LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 16

2022

Bate Stamp Numbers
01100688 – 01102689

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2022

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

VOLUME 16

2022

A.	Title:	(Cont'd) Report – Appendix D Level IV DOD (Oct 2020) to Final First Annual Remediation Action Operation Report, LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, Texas, April 2022
	Author(s):	Department of the Army
	Recipient:	U.S. Environmental Protection Agency and Texas Commission on Environmental Quality
	Date:	April 19, 2022
	Bate Stamp:	01100688 – 01102689

20201021

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201021_001	Perchlorate6850b.lcm	1x	☒		10/21/2020 9:41
2	null		20201021_002	Perchlorate6850b.lcm	1x	☒		10/21/2020 9:46
3	IB		20201021_003	Perchlorate6850b.lcm	1x	☒		10/21/2020 9:52
4	IB		20201021_004	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:00
5	LODV		20201021_005	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:07
6	ICS		20201021_006	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:15
7	PERCHLORATE7		20201021_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/21/2020 10:23
8	E2000965-005RR		20201021_008	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:31
9	E2000966-002RR		20201021_009	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:39
10	E2000971-001RR		20201021_010	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:47
11	E2000971-003RR		20201021_011	Perchlorate6850b.lcm	1x	☒		10/21/2020 10:55
12	E2000971-004RR		20201021_012	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:03
13	E2000981-001RR		20201021_013	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:11
14	E2000984-001RR		20201021_014	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:19
15	E2000985-003RR		20201021_015	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:26
16	E2000985-005RR		20201021_016	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:34
17	E2000985-006RR		20201021_017	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:42
18	PERCHLORATE7		20201021_018	Perchlorate6850b.lcm	1x	☒	3100807-05	10/21/2020 11:50
19	E2000996-003RR		20201021_019	Perchlorate6850b.lcm	1x	☒		10/21/2020 11:58
20	E2000996-005RR		20201021_020	Perchlorate6850b.lcm	1x	☒		10/21/2020 12:06
21	E2000996-009RR		20201021_021	Perchlorate6850b.lcm	1x	☒		10/21/2020 12:14
22	E2000985-006X2		20201021_022	Perchlorate6850b.lcm	2x	☒		10/21/2020 12:40
23	E2000996-009X2		20201021_023	Perchlorate6850b.lcm	2x	☒		10/21/2020 12:48
24	PERCHLORATE7		20201021_024	Perchlorate6850b.lcm	1x	☒	3100807-05	10/21/2020 12:56
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_016

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	NA	NA	NA	4.1	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_027

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	NA	NA	NA	5.7	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_038

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	NA	NA	NA	4.8	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_049

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	NA	NA	NA	6.8	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_060

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	NA	NA	NA	6.8	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201019\20201019_066

Calibration Date: 9/15/20
Calibration ID: EC2000032
Analysis Lot: 700168
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	NA	NA	NA	7.8	± 15 %	Quadratic

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201020\20201020_023

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700170
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.12	NA	NA	NA	-8.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201020\20201020_031

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700170
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.22	NA	NA	NA	-7.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201020\20201020_042

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700170
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.16	NA	NA	NA	-8.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/20/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201020\20201020_048

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700170
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.05	NA	NA	NA	-9.5	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/21/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201021\20201021_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700177
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.69	NA	NA	NA	-3.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/21/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201021\20201021_018

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700177
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.93	NA	NA	NA	-0.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/21/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201021\20201021_024

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700177
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.86	NA	NA	NA	-1.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/19/20 16:58

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201019\20201019_016	**Lab Code:**	EQ2000518-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700168
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-01	94,962	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/19/20 18:25

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201019\20201019_027	**Lab Code:**	EQ2000518-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700168
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-02	93,770	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/19/20 19:51

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201019\20201019_038	**Lab Code:**	EQ2000518-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700168
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-03	104,278	3.07
Method Blank	EQ2000513-01	116,517	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20 21:18

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201019\20201019_049
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000518-04
Analysis Lot: 700168
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-04	106,768	3.07
16WW25-201014	E2000996-001	114,150	3.03
16WW26-201014	E2000996-002	97,718	3.06
16WW29-201014	E2000996-004	104,090	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/19/20 22:45

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201019\20201019_060
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000518-05
Analysis Lot: 700168
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-05	112,348	3.07
16WW21-201014	E2000996-007	107,334	3.07
16WW21-201014-FD	E2000996-008	123,678	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/19/20 23:32

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201019\20201019_066	**Lab Code:**	EQ2000518-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700168
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	160,593	3.24
	Upper Limit ==>	240,890	5.24
	Lower Limit ==>	80,297	1.24
Associated Analyses			
Continuing Calibration Verification	EQ2000518-06	109,491	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/20/20 18:53

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201020\20201020_023	**Lab Code:**	EQ2000519-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700170
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000519-01	192,599	3.23

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/20/20 19:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201020\20201020_031	**Lab Code:**	EQ2000519-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700170
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000519-02	208,788	3.11
Lab Control Sample	EQ2000513-02	249,532	3.22
Duplicate Lab Control Sample	EQ2000513-03	201,356	3.21
Batch QCMS	EQ2000513-04	123,478	3.16
Batch QCDMS	EQ2000513-05	125,527	3.14

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/20/20 21:23

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201020\20201020_042
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000519-03
Analysis Lot: 700170
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000519-03	244,880	3.11
16WW41-201014	E2000996-006	133,178	3.14

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/20/20 22:10

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201020\20201020_048	**Lab Code:**	EQ2000519-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700170
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000519-04	243,797	3.11

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/21/20 10:23

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201021\20201021_007	**Lab Code:**	EQ2000520-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700177
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000520-01	232,030	3.25
Batch QC	E2000985-005	86,070	3.14

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20100779

Service Request: E2000996
Date Analyzed: 10/21/20 11:50

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201021\20201021_018
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000520-02
Analysis Lot: 700177
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000520-02	184,365	3.23
16WW30-201014	E2000996-003	107,920	3.21
16WW22-201014	E2000996-005	84,954	3.19
16WW39-201014	E2000996-009	93,722	3.21

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000996
Project:	HS20100779	**Date Analyzed:**	10/21/20 12:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201021\20201021_024	**Lab Code:**	EQ2000520-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700177
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000520-03	190,977	3.19

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

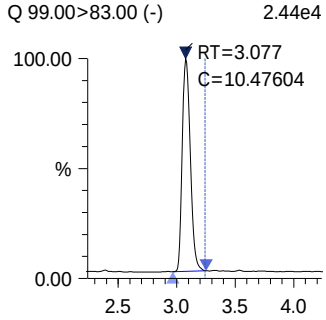
PERCHLORATE7

Date acquired: 10/19/2020 7:51:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201019\20201019_038.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/19/2020 7:51:58 PM	115561	10.47604	20201019_038	3.077	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/19/2020 7:51:58 PM	104278	1.00000	20201019_038	3.074	25.0000	1.0000	4

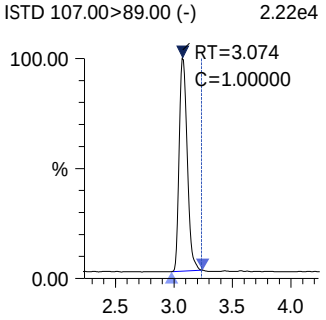
Perchlorate

Conc 10.47604
Area 115561



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 104278



ALS Group Houston

EQ2000513-01

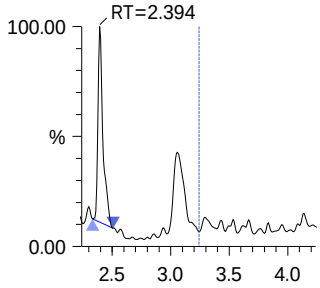
Date acquired: 10/19/2020 8:15:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201019\20201019_041.lcd
Vial: 23 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000513-01	10/19/2020 8:15:36 PM	----	----	20201019_041	----	25.0000	1.0000	23
Sodium Perchlorate-18O4_IS	EQ2000513-01	10/19/2020 8:15:36 PM	116517	1.00000	20201019_041	3.075	25.0000	1.0000	23

Perchlorate

Conc ----
Area ----

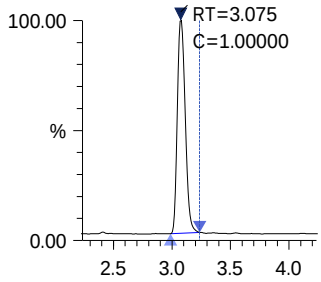
Q 99.00>83.00 (-) 1.40e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 116517

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

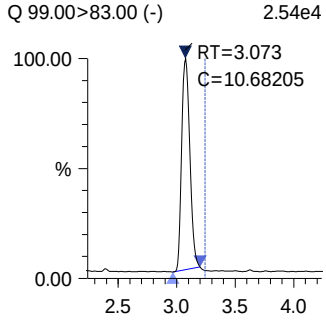
PERCHLORATE7

Date acquired: 10/19/2020 9:18:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201019\20201019_049.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/19/2020 9:18:43 PM	120622	10.68205	20201019_049	3.073	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/19/2020 9:18:43 PM	106768	1.00000	20201019_049	3.071	25.0000	1.0000	4

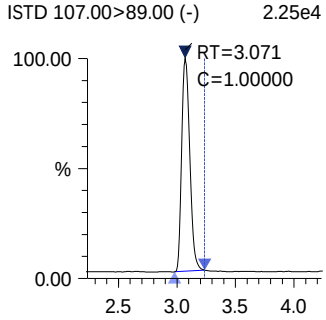
Perchlorate

Conc 10.68205
Area 120622



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 106768



ALS Group Houston

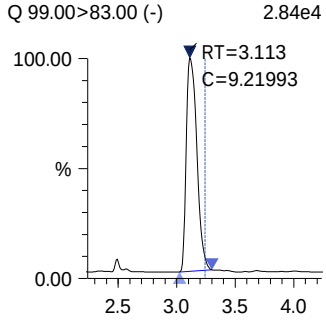
PERCHLORATE7

Date acquired: 10/20/2020 7:56:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_031.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 7:56:44 PM	180033	9.21993	20201020_031	3.113	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 7:56:44 PM	208788	1.00000	20201020_031	3.114	25.0000	1.0000	4

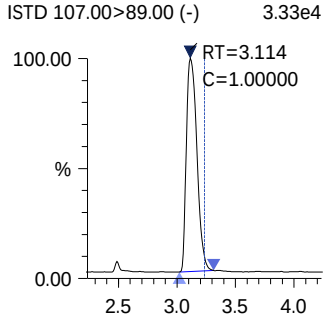
Perchlorate

Conc 9.21993
Area 180033



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 208788



ALS Group Houston

EQ2000513-02

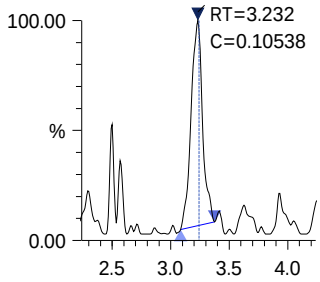
Date acquired: 10/20/2020 8:04:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_032.lcd
Vial: 24 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000513-02RR	10/20/2020 8:04:37 PM	3698	0.10538	20201020_032	3.232	25.0000	1.0000	24
Sodium Perchlorate-18O4_IS	EQ2000513-02RR	10/20/2020 8:04:37 PM	249532	1.00000	20201020_032	3.218	25.0000	1.0000	24

Perchlorate

Conc 0.10538
Area 3698

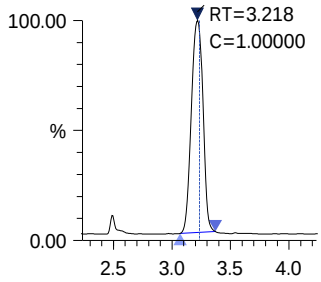
Q 99.00>83.00 (-) 5.68e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 249532

ISTD 107.00>89.00 (-) 3.65e4



ALS Group Houston

EQ2000513-03

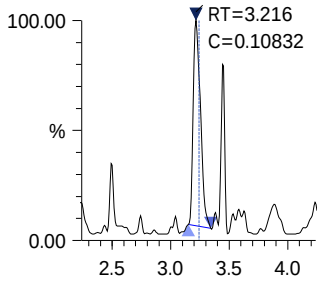
Date acquired: 10/20/2020 8:12:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_033.lcd
Vial: 25 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000513-03RR	10/20/2020 8:12:31 PM	3040	0.10832	20201020_033	3.216	25.0000	1.0000	25
Sodium Perchlorate-18O4_IS	EQ2000513-03RR	10/20/2020 8:12:31 PM	201356	1.00000	20201020_033	3.214	25.0000	1.0000	25

Perchlorate

Conc 0.10832
Area 3040

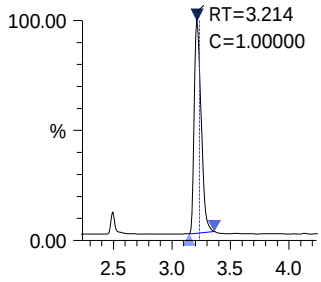
Q 99.00>83.00 (-) 7.35e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 201356

ISTD 107.00>89.00 (-) 4.92e4



ALS Group Houston

EQ2000513-04

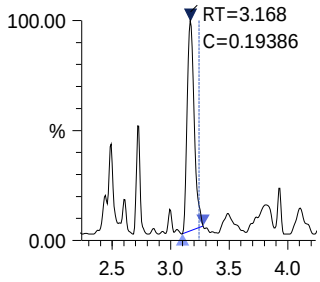
Date acquired: 10/20/2020 8:20:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_034.lcd
Vial: 26 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000513-04RR	10/20/2020 8:20:26 PM	2846	0.19386	20201020_034	3.168	25.0000	1.0000	26
Sodium Perchlorate-18O4_IS	EQ2000513-04RR	10/20/2020 8:20:26 PM	123478	1.00000	20201020_034	3.159	25.0000	1.0000	26

Perchlorate

Conc 0.19386
Area 2846

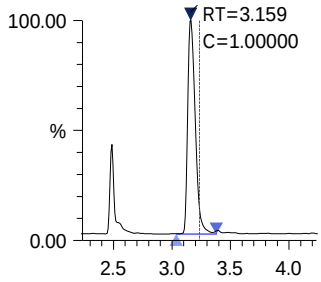
Q 99.00>83.00 (-) 6.78e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 123478

ISTD 107.00>89.00 (-) 2.69e4



ALS Group Houston

EQ2000513-05

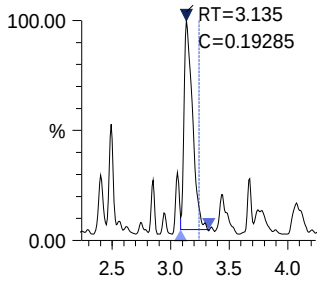
Date acquired: 10/20/2020 8:28:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_035.lcd
Vial: 27 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000513-05RR	10/20/2020 8:28:18 PM	2882	0.19285	20201020_035	3.135	25.0000	1.0000	27
Sodium Perchlorate-18O4_IS	EQ2000513-05RR	10/20/2020 8:28:18 PM	125527	1.00000	20201020_035	3.142	25.0000	1.0000	27

Perchlorate

Conc 0.19285
Area 2882

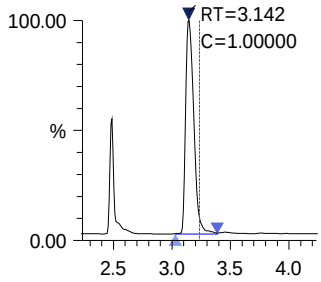
Q 99.00>83.00 (-) 5.79e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 125527

ISTD 107.00>89.00 (-) 2.54e4



ALS Group Houston

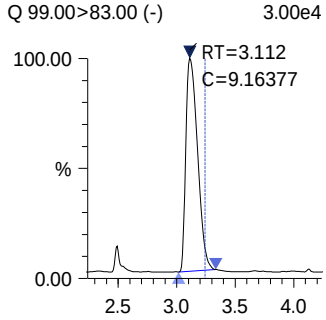
PERCHLORATE7

Date acquired: 10/20/2020 9:23:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_042.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 9:23:31 PM	209875	9.16377	20201020_042	3.112	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 9:23:31 PM	244880	1.00000	20201020_042	3.112	25.0000	1.0000	4

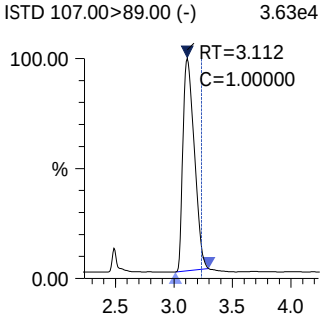
Perchlorate

Conc 9.16377
Area 209875



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 244880



10450 Stancliff Rd. Suite 210
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November 09, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101079**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

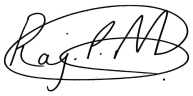
ALS Environmental received 8 sample(s) on Oct 21, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,



Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101079

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101079-01	16EW01-201020	Groundwater		20-Oct-2020 07:45	21-Oct-2020 09:30	☐
HS20101079-02	16WW49-201020	Groundwater		20-Oct-2020 08:50	21-Oct-2020 09:30	☐
HS20101079-03	16WW48-201020	Groundwater		20-Oct-2020 09:55	21-Oct-2020 09:30	☐
HS20101079-04	16WW51-201020	Groundwater		20-Oct-2020 10:55	21-Oct-2020 09:30	☐
HS20101079-05	16EW08-201020	Groundwater		20-Oct-2020 11:45	21-Oct-2020 09:30	☐
HS20101079-06	16EW04-201020	Groundwater		20-Oct-2020 12:30	21-Oct-2020 09:30	☐
HS20101079-07	16RW01-201020	Groundwater		20-Oct-2020 13:15	21-Oct-2020 09:30	☐
HS20101079-08	Trip Blank-201020	Water	CG-060320-207	20-Oct-2020 00:00	21-Oct-2020 09:30	☐

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101079

Work Order Comments

• Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached

The analysis for TOC was subcontracted to ALS Environmental in Kelso WA. Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R371594

Sample ID: 16WW48-201020 (HS20101079-03MS)

• The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW48-201020 (HS20101079-03MSD)

• The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

• The RPD between the MS and MSD was outside of the control limit.

Sample ID: HS20101123-01MS

• MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R371553

Sample ID: 16EW04-201020 (HS20101079-06)

• Surrogate failure for sample HS20101079-06 due to matrix. Confirmed by re-analysis @ higher dilution.

Sample ID: 16WW48-201020 (HS20101079-03MS)

• The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW48-201020 (HS20101079-03MSD)

• The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

WetChemistry by Method SM2320B

Batch ID: R371121

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R371048

Sample ID: 16EW01-201020 (HS20101079-01)

• Sample ran at 5X due to high concentration of non targeted analyte

Sample ID: 16WW48-201020 (HS20101079-03)

• Sample ran at 5X due to high concentration of non targeted analyte

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101079

WetChemistry by Method SW9056

Batch ID: R371048

Sample ID: 16WW48-201020 (HS20101079-03MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Sulfate)

Batch ID: R371917

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW01-201020
Collection Date: 20-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	12	U	7.5	12	25	UG/L	25	28-Oct-2020 19:27
1,1-Dichloroethene	**29**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
1,2-Dichloroethane	**25**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
cis-1,2-Dichloroethene	**7,600**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 19:48
Methylene chloride	25	U	10	25	50	UG/L	25	28-Oct-2020 19:27
Trichloroethene	**5,400**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 19:48
Vinyl chloride	**630**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
Surr: 1,2-Dichloroethane-d4	*82.0*			**0**	*81-118*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: 1,2-Dichloroethane-d4	*81.0*			**0**	*81-118*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: 4-Bromofluorobenzene	*86.1*			**0**	*85-114*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: 4-Bromofluorobenzene	*88.3*			**0**	*85-114*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: Dibromofluoromethane	*83.6*			**0**	*80-119*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: Toluene-d8	*98.2*			**0**	*89-112*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: Toluene-d8	*95.6*			**0**	*89-112*	*%REC*	*250*	*28-Oct-2020 19:48*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.00250	U	0.00144	0.00250	0.0100	mg/L	10	26-Oct-2020 14:15
Ethene	**0.112**		**0.00234**	**0.00500**	**0.0100**	**mg/L**	10	26-Oct-2020 14:15
Methane	**0.182**		**0.00107**	**0.00250**	**0.00500**	**mg/L**	10	26-Oct-2020 14:15
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**517**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	22-Oct-2020 23:02
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**7.02**		**0.150**	**0.500**	**0.500**	**mg/L**	5	21-Oct-2020 15:21
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	21-Oct-2020 15:21
Sulfate	**3,960**		**20.0**	**50.0**	**50.0**	**mg/L**	100	21-Oct-2020 20:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16WW49-201020 Lab ID:HS20101079-02
Collection Date: 20-Oct-2020 08:50 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	28-Oct-2020 14:53
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:53
1,2-Dichloroethane	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:53
cis-1,2-Dichloroethene	**190**		**1.0**	**2.5**	**5.0**	**UG/L**	5	28-Oct-2020 17:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:53
Trichloroethene	**4.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:53
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:53
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: 1,2-Dichloroethane-d4	*84.1*			**0**	*81-118*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: 4-Bromofluorobenzene	*89.7*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Toluene-d8	*96.8*			**0**	*89-112*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Toluene-d8	*98.0*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:53*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**2.66**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 02:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16WW48-201020 Lab ID:HS20101079-03
Collection Date: 20-Oct-2020 09:55 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	7.5	25	25	UG/L	25	28-Oct-2020 15:35
1,1-Dichloroethene	**32**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
1,2-Dichloroethane	**44**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
cis-1,2-Dichloroethene	**16,000**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 15:14
Methylene chloride	25	U	10	25	50	UG/L	25	28-Oct-2020 15:35
Trichloroethene	**14,000**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 15:14
Vinyl chloride	**57**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: 4-Bromofluorobenzene	*88.0*			**0**	*85-114*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: 4-Bromofluorobenzene	*88.9*			**0**	*85-114*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: Dibromofluoromethane	*84.6*			**0**	*80-119*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: Dibromofluoromethane	*87.5*			**0**	*80-119*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: Toluene-d8	*96.0*			**0**	*89-112*	*%REC*	*25*	*28-Oct-2020 15:35*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 13:05
Ethene	**0.00123**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 13:05
Methane	**0.00353**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 13:05
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**351**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	22-Oct-2020 22:49
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**7.35**		**0.150**	**0.500**	**0.500**	**mg/L**	5	21-Oct-2020 15:39
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	21-Oct-2020 15:39
Sulfate	**2,490**		**20.0**	**50.0**	**50.0**	**mg/L**	100	21-Oct-2020 21:03
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16WW51-201020 Lab ID:HS20101079-04
Collection Date: 20-Oct-2020 10:55 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	28-Oct-2020 17:21
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
cis-1,2-Dichloroethene	**50**		**1.0**	**2.5**	**5.0**	**UG/L**	5	28-Oct-2020 17:21
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	28-Oct-2020 17:21
Trichloroethene	**1,700**		**10**	**25**	**50**	**UG/L**	50	28-Oct-2020 17:42
Vinyl chloride	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
Surr: 1,2-Dichloroethane-d4	*82.0*			**0**	*81-118*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: 1,2-Dichloroethane-d4	*82.3*			**0**	*81-118*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: 4-Bromofluorobenzene	*90.4*			**0**	*85-114*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: 4-Bromofluorobenzene	*89.2*			**0**	*85-114*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Toluene-d8	*98.3*			**0**	*89-112*	*%REC*	*50*	*28-Oct-2020 17:42*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**4.65**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 03:13
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW08-201020
Collection Date: 20-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	28-Oct-2020 14:32
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
cis-1,2-Dichloroethene	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:32
Trichloroethene	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:32
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**9.59**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 03:31
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW04-201020
Collection Date: 20-Oct-2020 12:30

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	28-Oct-2020 18:03
1,1-Dichloroethene	**5.9**	J	**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:03
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:03
cis-1,2-Dichloroethene	**4,400**		**20**	**50**	**100**	**UG/L**	100	28-Oct-2020 18:24
Methylene chloride	10	U	4.0	10	20	UG/L	10	28-Oct-2020 18:03
Trichloroethene	**520**		**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:03
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:03
Surr: 1,2-Dichloroethane-d4	*80.5*	*S*		**0**	*81-118*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: 1,2-Dichloroethane-d4	*81.6*			**0**	*81-118*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: 4-Bromofluorobenzene	*87.3*			**0**	*85-114*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: Dibromofluoromethane	*86.4*			**0**	*80-119*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: Toluene-d8	*95.8*			**0**	*89-112*	*%REC*	*100*	*28-Oct-2020 18:24*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16RW01-201020 Lab ID:HS20101079-07
Collection Date: 20-Oct-2020 13:15 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	28-Oct-2020 18:45
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
cis-1,2-Dichloroethene	**120**		**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:45
Methylene chloride	10	U	4.0	10	20	UG/L	10	28-Oct-2020 18:45
Trichloroethene	**4,000**		**20**	**50**	**100**	**UG/L**	100	28-Oct-2020 19:06
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
Surr: 1,2-Dichloroethane-d4	*81.6*			**0**	*81-118*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: 4-Bromofluorobenzene	*85.5*			**0**	*85-114*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: 4-Bromofluorobenzene	*88.8*			**0**	*85-114*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: Dibromofluoromethane	*86.5*			**0**	*80-119*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: Toluene-d8	*98.9*			**0**	*89-112*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: Toluene-d8	*96.4*			**0**	*89-112*	*%REC*	*100*	*28-Oct-2020 19:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank-201020
Collection Date: 20-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	28-Oct-2020 14:11
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:11
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Surr: 1,2-Dichloroethane-d4	*81.9*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: Dibromofluoromethane	*81.7*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:11*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020 **DATES REPORT**
WorkOrder: HS20101079

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371048 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			21 Oct 2020 20:45	100
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			21 Oct 2020 15:21	5
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			21 Oct 2020 21:03	100
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			21 Oct 2020 15:39	5
Batch ID: R371121 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			22 Oct 2020 23:02	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			22 Oct 2020 22:49	1
Batch ID: R371410 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			27 Oct 2020 14:22	1
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			27 Oct 2020 14:22	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			27 Oct 2020 14:22	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			27 Oct 2020 14:22	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			27 Oct 2020 14:22	1
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			27 Oct 2020 14:22	1
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			27 Oct 2020 14:22	1
Batch ID: R371553 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101079-08	Trip Blank-201020	20 Oct 2020 00:00			28 Oct 2020 14:11	1
Batch ID: R371553 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			28 Oct 2020 19:48	250
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			28 Oct 2020 19:27	25
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			28 Oct 2020 17:00	5
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			28 Oct 2020 14:53	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			28 Oct 2020 15:35	25
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			28 Oct 2020 15:14	250
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			28 Oct 2020 17:42	50
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			28 Oct 2020 17:21	5
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			28 Oct 2020 14:32	1
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			28 Oct 2020 18:24	100
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			28 Oct 2020 18:03	10
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			28 Oct 2020 19:06	100
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			28 Oct 2020 18:45	10
Batch ID: R371594 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			26 Oct 2020 14:15	10
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			26 Oct 2020 13:05	1

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371917 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			03 Nov 2020 02:55	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			03 Nov 2020 03:13	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			03 Nov 2020 03:31	1
Batch ID: R372182 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			09 Nov 2020 09:42	1
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			09 Nov 2020 09:42	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			09 Nov 2020 09:42	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			09 Nov 2020 09:42	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			09 Nov 2020 09:42	1

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:00**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000250	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000250	0.000500								U

LCS Sample ID: **LCS-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:08**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0204	0.00100	0.01804	0	113	75 - 125				
Ethene	0.0186	0.00100	0.0168	0	111	75 - 125				
Methane	0.00935	0.000500	0.009647	0	96.9	75 - 125				

LCSD Sample ID: **LCSD-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:19**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0200	0.00100	0.01804	0	111	75 - 125	0.02037	1.7	30	
Ethene	0.0179	0.00100	0.0168	0	107	75 - 125	0.01859	3.66	30	
Methane	0.0105	0.000500	0.009647	0	109	75 - 125	0.009349	11.8	30	

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **26-Oct-2020 14:31**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807468** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0245	0.00100	0.01804	0	136	75 - 125				S
Ethene	0.0261	0.00100	0.0168	0.002009	144	75 - 125				S
Methane	0.0131	0.000500	0.009647	0.001258	123	75 - 125				

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **26-Oct-2020 13:16**
Client ID: **16WW48-201020** Run ID: **FID-4_371594** SeqNo: **5807463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0111	0.00100	0.01804	0	61.4	75 - 125				S
Ethene	0.0124	0.00100	0.0168	0.001226	66.7	75 - 125				S
Methane	0.00691	0.000500	0.009647	0.003527	35.1	75 - 125				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 14:49**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807469** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0251	0.00100	0.01804	0	139	75 - 125	0.02450	2.53	30	S
Ethene	0.0267	0.00100	0.0168	0.002009	147	75 - 125	0.02614	2.06	30	S
Methane	0.0123	0.000500	0.009647	0.001258	114	75 - 125	0.01312	6.57	30	

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 13:34**
Client ID: **16WW48-201020** Run ID: **FID-4_371594** SeqNo: **5807464** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0261	0.00100	0.01804	0	144	75 - 125	0.01109	80.6	30	SR
Ethene	0.0261	0.00100	0.0168	0.001226	148	75 - 125	0.01244	71	30	SR
Methane	0.0133	0.000500	0.009647	0.003527	102	75 - 125	0.006909	63.5	30	R

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371553 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201028** Units: **UG/L** Analysis Date: **28-Oct-2020 13:50**
Client ID: Run ID: **VOA6_371553** SeqNo: **5806473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.26*	*1.0*	*50*	*0*	*82.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.08*	*1.0*	*50*	*0*	*88.2*	*85 - 114*				
Surr: Dibromofluoromethane	*42.6*	*1.0*	*50*	*0*	*85.2*	*80 - 119*				
Surr: Toluene-d8	*48.88*	*1.0*	*50*	*0*	*97.8*	*89 - 112*				

LCS Sample ID: **VLCSW-201028** Units: **UG/L** Analysis Date: **28-Oct-2020 13:08**
Client ID: Run ID: **VOA6_371553** SeqNo: **5806472** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	21.12	1.0	20	0	106	80 - 119				
1,1-Dichloroethene	14.99	1.0	20	0	75.0	71 - 131				
1,2-Dichloroethane	22.35	1.0	20	0	112	73 - 128				
cis-1,2-Dichloroethene	19.47	1.0	20	0	97.3	78 - 123				
Methylene chloride	17.67	2.0	20	0	88.3	74 - 124				
Trichloroethene	23.08	1.0	20	0	115	79 - 123				
Vinyl chloride	15.03	1.0	20	0	75.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.48*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.44*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*50.84*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*51.14*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371553 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101079-03MS** Units: **UG/L** Analysis Date: **28-Oct-2020 15:56**
Client ID: **16WW48-201020** Run ID: **VOA6_371553** SeqNo: **5806479** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	5403	250	5000	0	108	80 - 119				
1,1-Dichloroethene	4587	250	5000	0	91.7	71 - 131				
1,2-Dichloroethane	5789	250	5000	0	116	73 - 128				
cis-1,2-Dichloroethene	21390	250	5000	15590	116	78 - 123				
Methylene chloride	4565	500	5000	0	91.3	74 - 124				
Trichloroethene	22570	250	5000	14450	162	79 - 123				S
Vinyl chloride	4371	250	5000	0	87.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*10410*	*250*	*12500*	*0*	*83.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*11430*	*250*	*12500*	*0*	*91.5*	*85 - 114*				
Surr: Dibromofluoromethane	*10830*	*250*	*12500*	*0*	*86.6*	*80 - 119*				
Surr: Toluene-d8	*11820*	*250*	*12500*	*0*	*94.5*	*89 - 112*				

MSD Sample ID: **HS20101079-03MSD** Units: **UG/L** Analysis Date: **28-Oct-2020 16:18**
Client ID: **16WW48-201020** Run ID: **VOA6_371553** SeqNo: **5806480** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	5616	250	5000	0	112	80 - 119	5403	3.86	20	
1,1-Dichloroethene	4292	250	5000	0	85.8	71 - 131	4587	6.65	20	
1,2-Dichloroethane	5992	250	5000	0	120	73 - 128	5789	3.46	20	
cis-1,2-Dichloroethene	21130	250	5000	15590	111	78 - 123	21390	1.22	20	
Methylene chloride	4721	500	5000	0	94.4	74 - 124	4565	3.36	20	
Trichloroethene	21390	250	5000	14450	139	79 - 123	22570	5.38	20	S
Vinyl chloride	4299	250	5000	0	86.0	58 - 137	4371	1.66	20	
Surr: 1,2-Dichloroethane-d4	*11120*	*250*	*12500*	*0*	*88.9*	*81 - 118*	*10410*	*6.61*	*20*	
Surr: 4-Bromofluorobenzene	*11370*	*250*	*12500*	*0*	*90.9*	*85 - 114*	*11430*	*0.572*	*20*	
Surr: Dibromofluoromethane	*11020*	*250*	*12500*	*0*	*88.2*	*80 - 119*	*10830*	*1.78*	*20*	
Surr: Toluene-d8	*11770*	*250*	*12500*	*0*	*94.2*	*89 - 112*	*11820*	*0.375*	*20*	

The following samples were analyzed in this batch:

HS20101079-01	HS20101079-02	HS20101079-03	HS20101079-04
HS20101079-05	HS20101079-06	HS20101079-07	HS20101079-08

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371048 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-102120** Units: **mg/L** Analysis Date: **22-Oct-2020 01:51**
Client ID: Run ID: **ICS-Integrion_371048** SeqNo: **5794524** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-102120** Units: **mg/L** Analysis Date: **22-Oct-2020 02:09**
Client ID: Run ID: **ICS-Integrion_371048** SeqNo: **5794525** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	4.022	0.100	4	0	101	80 - 120				
Nitrogen, Nitrate (As N)	4.148	0.100	4	0	104	80 - 120				
Sulfate	18.79	0.500	20	0	94.0	80 - 120				

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **21-Oct-2020 20:09**
Client ID: **16WW48-201020** Run ID: **ICS-Integrion_371048** SeqNo: **5794518** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	16.76	0.500	10	7.352	94.1	80 - 120				
Nitrogen, Nitrate (As N)	11.47	0.500	10	0	115	80 - 120				
Sulfate	2338	2.50	50	2334	7.79	80 - 120				SEO

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **21-Oct-2020 20:27**
Client ID: **16WW48-201020** Run ID: **ICS-Integrion_371048** SeqNo: **5794519** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	16.87	0.500	10	7.352	95.2	80 - 120	16.76	0.633	20	
Nitrogen, Nitrate (As N)	11.56	0.500	10	0	116	80 - 120	11.47	0.768	20	
Sulfate	2350	2.50	50	2334	32.3	80 - 120	2338	0.523	20	SEO

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371121 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:09**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796038** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:17**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796039** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1013	5.00	1000	0	101	85 - 115				

LCSD Sample ID: **WLCSD2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:42**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796042** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1016	5.00	1000	0	102	85 - 115	1013	0.301	20	

DUP Sample ID: **HS20101079-03DUP** Units: **mg/L** Analysis Date: **22-Oct-2020 22:55**
Client ID: **16WW48-201020** Run ID: **ManTech01_371121** SeqNo: **5796044** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	343.9	5.00					351.3	2.13	20	

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371917 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:19**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814879** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:37**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814880** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.828	0.100	4	0	95.7	80 - 120				

MS Sample ID: **HS20101310-11MS** Units: **mg/L** Analysis Date: **03-Nov-2020 06:49**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814901** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.111	0.100	2	1.274	91.9	80 - 120				

MSD Sample ID: **HS20101310-11MSD** Units: **mg/L** Analysis Date: **03-Nov-2020 07:07**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814902** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.191	0.100	2	1.274	95.9	80 - 120	3.111	2.53	20	

The following samples were analyzed in this batch: HS20101079-02 HS20101079-04 HS20101079-05

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101079**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101079

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	Sub
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	WET068
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	VOA260
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	RSK022
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	Sub

ALS Houston, US Date: 09-Nov-20

Sample Receipt Checklist

Work Order ID: HS20101079 **Date/Time Received:** 21-Oct-2020 09:30

Client Name: CBI-Houston **Received by:** Jared R. Makan

Completed By:	/S/ Paresh M. Giga	21-Oct-2020 13:23	**Reviewed by:**	/S/ RJ Modashia	21-Oct-2020 16:38
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.5C U/c	IR31	
Cooler(s)/Kit(s):	43016		
Date/Time sample(s) sent to storage:	10/21/2020 13:45		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16EW01-201020	WG	10/20/20/0745		10	X	X	X	X	X	X					
16WW49-201020	WG	10/20/20/0850		7	X	X			X	X					
16WW48-201020	WG	10/20/20/0955		10	X	X	X	X	X	X					
16WW48-201020-MS	WG	10/20/20/0955		10	X	X	X	X	X	X					
16WW48-201020-MSD	WG	10/20/20/0955		10	X	X	X	X	X	X					
16WW51-201020	WG	10/20/20/1055		7	X	X			X	X					
16EW08-201020	WG	10/20/20/1145		7	X	X			X	X					
16EW04-201020	WG	10/20/20/1230		4	X					X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Hinerman	10/21/20	09:30							

Remarks: Cooler 43016 Temp 1.5 IR31 CFU

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101079

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
Analyses															
16RW01-201020	W G	10/20/20/1315		4	X					X					
TRIP BLANK-201020	W	10/20/20		2	X										

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101079

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Jimenez	10/21/20	09:30							

Remarks:

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

u3016

CUSTODY SEAL

Date: 10/20/20 Time: 1430
Name: Scott Beesinger
Company: SHAW

Seal Broken By:
Date: 10/21/20

u3016 OCT 21 2020

Must Deliver Next Business Day
Time and Tempature Sensitive!

ALS

u3016

ORIGIN ID:SCRA (903) 930-6189
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 20OCT20
ACTWGT: 1.00 LB MAN
CAD: 9001307/CFE3211
DIMS: 19x16x10 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-6668
REF: LHAAP 16-BQ72394-RJ
RMA:

FedEx Express

FedEx TRK# 0221 1891 8877 8325

WED - 21 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

October 26, 2020 Service Request No:E2001015

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101079

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001015.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001015
Project:	HS20101079	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Seven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD recoveries were outside control limits, Sample result is 10X greater than the spike amount.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001015
Project: HS20101079

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001015-001	16EW01-201020	10/20/2020	0745
E2001015-002	16WW49-201020	10/20/2020	0850
E2001015-003	16WW48-201020	10/20/2020	0955
E2001015-004	16WW51-201020	10/20/2020	1055
E2001015-005	16EW08-201020	10/20/2020	1145
E2001015-006	16EW04-201020	10/20/2020	1230
E2001015-007	16RW01-201020	10/20/2020	1315

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001015-001	16EW01-201020	Ground Water	10/20/20 0745	**IV**
E2001015-002	16WW49-201020	Ground Water	10/20/20 0850	**IV**
E2001015-003	16WW48-201020	Ground Water	10/20/20 0955	**IV**
E2001015-004	16WW51-201020	Ground Water	10/20/20 1055	**IV**
E2001015-005	16EW08-201020	Ground Water	10/20/20 1145	**IV**
E2001015-006	16EW04-201020	Ground Water	10/20/20 1230	**IV**
E2001015-007	16RW01-201020	Ground Water	10/20/20 1315	**IV**

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	Level II due 11/4,level IV 11/11
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101079-06**	**16EW04-201020**	**Groundwater**	**20 Oct 2020 12:30**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101079-07**	**16RW01-201020**	**Groundwater**	**20 Oct 2020 13:15**
	SUB_Perch-6850			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

RIGHT SOLUTIONS | RIGHT PARTNER

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. Mascorro	Date/Time:	10/22/20
Received By:	LL	Date/Time:	10/22/20 1105
Cooler ID(s):		Temperature(s):	

ALS Environmental

Cooler Receipt Form

Project Chemist: LH

Client/Project: ALS-HI

Thermometer ID: IR91

Date/Time Received: 10/22/20

Initials: LH

Date/Time Logged in: 10/22/20

Initials: LH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	LH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0745
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW01-201020	**Units:**	µg/L
Lab Code:	E2001015-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**27.5**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:50	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0850
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW49-201020	**Units:**	µg/L
Lab Code:	E2001015-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:58	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:39	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1055
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW51-201020	**Units:**	µg/L
Lab Code:	E2001015-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:36	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW08-201020	**Units:**	µg/L
Lab Code:	E2001015-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:44	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1230
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW04-201020	**Units:**	µg/L
Lab Code:	E2001015-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:52	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1315
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW01-201020	**Units:**	µg/L
Lab Code:	E2001015-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 22:00	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079
Sample Matrix: Ground Water

Service Request: E2001015
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		16WW48-201020MS				16WW48-201020DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000533-04				EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

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November 06, 2020 **Analytical Report for Service Request No:** K2009599

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **K2009599.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009599
Date Received: 10/22/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 10/22/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

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K2009599

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Houston, TX 77099
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14982**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626 **Phone:** +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Received by NRedersen ALS 10/22/20 1000

K20095 99

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14982**

Relinquished By: _____ Date/Time: 10/21/2020 1800

Received By: _____ Date/Time: 10/22/20 1000

Cooler ID(s): _____ Temperature(s): _____

PM KL

Cooler Receipt and Preservation Form

Client AIS Houston Service Request K20 09599

Received: 10/22/20 Opened: 10/22/20 By: MP Unloaded: 10/22/20 By: MP

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
0.7	—	IR01	14982	—	—	1891 8881 8403	

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16EW01-201020	K2009599-001	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW49-201020	K2009599-002	**3.74**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW48-201020	K2009599-003	**8.44**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW51-201020	K2009599-004	**4.52**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW08-201020	K2009599-005	**332**	5.0	2.0	0.7	10	11/03/20 11:36	
Method Blank	K2009599-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009599-003DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	8.44	8.47	8.46	<1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009599-003MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	8.44	30.5	25.0	88	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009599-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

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WorkOrder: HS20101079

LHAAP 16 October 2020

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

01-Dec-2020

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HS20101079 LHAAP 16 October 2020 Final

ALS WO# HS20101079

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November 09, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101079**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 8 sample(s) on Oct 21, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101079

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101079-01	16EW01-201020	Groundwater		20-Oct-2020 07:45	21-Oct-2020 09:30	☐
HS20101079-02	16WW49-201020	Groundwater		20-Oct-2020 08:50	21-Oct-2020 09:30	☐
HS20101079-03	16WW48-201020	Groundwater		20-Oct-2020 09:55	21-Oct-2020 09:30	☐
HS20101079-04	16WW51-201020	Groundwater		20-Oct-2020 10:55	21-Oct-2020 09:30	☐
HS20101079-05	16EW08-201020	Groundwater		20-Oct-2020 11:45	21-Oct-2020 09:30	☐
HS20101079-06	16EW04-201020	Groundwater		20-Oct-2020 12:30	21-Oct-2020 09:30	☐
HS20101079-07	16RW01-201020	Groundwater		20-Oct-2020 13:15	21-Oct-2020 09:30	☐
HS20101079-08	Trip Blank-201020	Water	CG-060320-207	20-Oct-2020 00:00	21-Oct-2020 09:30	☐

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101079

Work Order Comments

- Analysis of Perchlorate was performed by ALS Houston TX, High Resolution. Laboratory. Final report attached

  The analysis for TOC was subcontracted to ALS Environmental in Kelso WA. Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R371594

Sample ID: 16WW48-201020 (HS20101079-03MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW48-201020 (HS20101079-03MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.
- The RPD between the MS and MSD was outside of the control limit.

Sample ID: HS20101123-01MS

- MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R371553

Sample ID: 16EW04-201020 (HS20101079-06)

- Surrogate failure for sample HS20101079-06 due to matrix. Confirmed by re-analysis @ higher dilution.

Sample ID: 16WW48-201020 (HS20101079-03MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW48-201020 (HS20101079-03MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

WetChemistry by Method SM2320B

Batch ID: R371121

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R371048

Sample ID: 16EW01-201020 (HS20101079-01)

- Sample ran at 5X due to high concentration of non targeted analyte

Sample ID: 16WW48-201020 (HS20101079-03)

- Sample ran at 5X due to high concentration of non targeted analyte

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101079

WetChemistry by Method SW9056

Batch ID: R371048

Sample ID: 16WW48-201020 (HS20101079-03MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Sulfate)

Batch ID: R371917

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW01-201020
Collection Date: 20-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	12	U	7.5	12	25	UG/L	25	28-Oct-2020 19:27
1,1-Dichloroethene	**29**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
1,2-Dichloroethane	**25**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
cis-1,2-Dichloroethene	**7,600**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 19:48
Methylene chloride	25	U	10	25	50	UG/L	25	28-Oct-2020 19:27
Trichloroethene	**5,400**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 19:48
Vinyl chloride	**630**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 19:27
Surr: 1,2-Dichloroethane-d4	*82.0*			**0**	*81-118*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: 1,2-Dichloroethane-d4	*81.0*			**0**	*81-118*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: 4-Bromofluorobenzene	*86.1*			**0**	*85-114*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: 4-Bromofluorobenzene	*88.3*			**0**	*85-114*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: Dibromofluoromethane	*83.6*			**0**	*80-119*	*%REC*	*250*	*28-Oct-2020 19:48*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: Toluene-d8	*98.2*			**0**	*89-112*	*%REC*	*25*	*28-Oct-2020 19:27*
Surr: Toluene-d8	*95.6*			**0**	*89-112*	*%REC*	*250*	*28-Oct-2020 19:48*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.00250	U	0.00144	0.00250	0.0100	mg/L	10	26-Oct-2020 14:15
Ethene	**0.112**		**0.00234**	**0.00500**	**0.0100**	**mg/L**	10	26-Oct-2020 14:15
Methane	**0.182**		**0.00107**	**0.00250**	**0.00500**	**mg/L**	10	26-Oct-2020 14:15
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**517**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	22-Oct-2020 23:02
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**7.02**		**0.150**	**0.500**	**0.500**	**mg/L**	5	21-Oct-2020 15:21
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	21-Oct-2020 15:21
Sulfate	**3,960**		**20.0**	**50.0**	**50.0**	**mg/L**	100	21-Oct-2020 20:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16WW49-201020 Lab ID:HS20101079-02
Collection Date: 20-Oct-2020 08:50 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	28-Oct-2020 14:53
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:53
1,2-Dichloroethane	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:53
cis-1,2-Dichloroethene	**190**		**1.0**	**2.5**	**5.0**	**UG/L**	5	28-Oct-2020 17:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:53
Trichloroethene	**4.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:53
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:53
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: 1,2-Dichloroethane-d4	*84.1*			**0**	*81-118*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: 4-Bromofluorobenzene	*89.7*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:53*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Toluene-d8	*96.8*			**0**	*89-112*	*%REC*	*5*	*28-Oct-2020 17:00*
Surr: Toluene-d8	*98.0*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:53*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**2.66**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 02:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW48-201020
Collection Date: 20-Oct-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	7.5	25	25	UG/L	25	28-Oct-2020 15:35
1,1-Dichloroethene	**32**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
1,2-Dichloroethane	**44**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
cis-1,2-Dichloroethene	**16,000**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 15:14
Methylene chloride	25	U	10	25	50	UG/L	25	28-Oct-2020 15:35
Trichloroethene	**14,000**		**50**	**120**	**250**	**UG/L**	250	28-Oct-2020 15:14
Vinyl chloride	**57**		**5.0**	**12**	**25**	**UG/L**	25	28-Oct-2020 15:35
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: 4-Bromofluorobenzene	*88.0*			**0**	*85-114*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: 4-Bromofluorobenzene	*88.9*			**0**	*85-114*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: Dibromofluoromethane	*84.6*			**0**	*80-119*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: Dibromofluoromethane	*87.5*			**0**	*80-119*	*%REC*	*25*	*28-Oct-2020 15:35*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*250*	*28-Oct-2020 15:14*
Surr: Toluene-d8	*96.0*			**0**	*89-112*	*%REC*	*25*	*28-Oct-2020 15:35*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 13:05
Ethene	**0.00123**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 13:05
Methane	**0.00353**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 13:05
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**351**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	22-Oct-2020 22:49
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**7.35**		**0.150**	**0.500**	**0.500**	**mg/L**	5	21-Oct-2020 15:39
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	21-Oct-2020 15:39
Sulfate	**2,490**		**20.0**	**50.0**	**50.0**	**mg/L**	100	21-Oct-2020 21:03
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101079
Sample ID: 16WW51-201020 Lab ID:HS20101079-04
Collection Date: 20-Oct-2020 10:55 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	28-Oct-2020 17:21
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
cis-1,2-Dichloroethene	**50**		**1.0**	**2.5**	**5.0**	**UG/L**	5	28-Oct-2020 17:21
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	28-Oct-2020 17:21
Trichloroethene	**1,700**		**10**	**25**	**50**	**UG/L**	50	28-Oct-2020 17:42
Vinyl chloride	2.5	U	1.0	2.5	5.0	UG/L	5	28-Oct-2020 17:21
Surr: 1,2-Dichloroethane-d4	*82.0*			**0**	*81-118*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: 1,2-Dichloroethane-d4	*82.3*			**0**	*81-118*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: 4-Bromofluorobenzene	*90.4*			**0**	*85-114*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: 4-Bromofluorobenzene	*89.2*			**0**	*85-114*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*50*	*28-Oct-2020 17:42*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*5*	*28-Oct-2020 17:21*
Surr: Toluene-d8	*98.3*			**0**	*89-112*	*%REC*	*50*	*28-Oct-2020 17:42*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**4.65**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 03:13
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW08-201020
Collection Date: 20-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	28-Oct-2020 14:32
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
cis-1,2-Dichloroethene	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:32
Trichloroethene	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	28-Oct-2020 14:32
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:32
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:32*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:32*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**9.59**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	03-Nov-2020 03:31
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 09:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW04-201020
Collection Date: 20-Oct-2020 12:30

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	28-Oct-2020 18:03
1,1-Dichloroethene	**5.9**	J	**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:03
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:03
cis-1,2-Dichloroethene	**4,400**		**20**	**50**	**100**	**UG/L**	100	28-Oct-2020 18:24
Methylene chloride	10	U	4.0	10	20	UG/L	10	28-Oct-2020 18:03
Trichloroethene	**520**		**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:03
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:03
Surr: 1,2-Dichloroethane-d4	*80.5*	*S*		**0**	*81-118*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: 1,2-Dichloroethane-d4	*81.6*			**0**	*81-118*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: 4-Bromofluorobenzene	*87.3*			**0**	*85-114*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: Dibromofluoromethane	*86.4*			**0**	*80-119*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: Dibromofluoromethane	*85.8*			**0**	*80-119*	*%REC*	*100*	*28-Oct-2020 18:24*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*10*	*28-Oct-2020 18:03*
Surr: Toluene-d8	*95.8*			**0**	*89-112*	*%REC*	*100*	*28-Oct-2020 18:24*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW01-201020
Collection Date: 20-Oct-2020 13:15

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	28-Oct-2020 18:45
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
cis-1,2-Dichloroethene	**120**		**2.0**	**5.0**	**10**	**UG/L**	10	28-Oct-2020 18:45
Methylene chloride	10	U	4.0	10	20	UG/L	10	28-Oct-2020 18:45
Trichloroethene	**4,000**		**20**	**50**	**100**	**UG/L**	100	28-Oct-2020 19:06
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	28-Oct-2020 18:45
Surr: 1,2-Dichloroethane-d4	*81.6*			**0**	*81-118*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: 4-Bromofluorobenzene	*85.5*			**0**	*85-114*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: 4-Bromofluorobenzene	*88.8*			**0**	*85-114*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: Dibromofluoromethane	*86.5*			**0**	*80-119*	*%REC*	*100*	*28-Oct-2020 19:06*
Surr: Toluene-d8	*98.9*			**0**	*89-112*	*%REC*	*10*	*28-Oct-2020 18:45*
Surr: Toluene-d8	*96.4*			**0**	*89-112*	*%REC*	*100*	*28-Oct-2020 19:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank-201020
Collection Date: 20-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101079
Lab ID:HS20101079-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	28-Oct-2020 14:11
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	28-Oct-2020 14:11
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	28-Oct-2020 14:11
Surr: 1,2-Dichloroethane-d4	*81.9*			**0**	*81-118*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: Dibromofluoromethane	*81.7*			**0**	*80-119*	*%REC*	*1*	*28-Oct-2020 14:11*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*1*	*28-Oct-2020 14:11*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020 **DATES REPORT**
WorkOrder: HS20101079

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371048 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			21 Oct 2020 20:45	100
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			21 Oct 2020 15:21	5
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			21 Oct 2020 21:03	100
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			21 Oct 2020 15:39	5
Batch ID: R371121 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			22 Oct 2020 23:02	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			22 Oct 2020 22:49	1
Batch ID: R371410 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			27 Oct 2020 14:22	1
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			27 Oct 2020 14:22	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			27 Oct 2020 14:22	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			27 Oct 2020 14:22	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			27 Oct 2020 14:22	1
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			27 Oct 2020 14:22	1
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			27 Oct 2020 14:22	1
Batch ID: R371553 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101079-08	Trip Blank-201020	20 Oct 2020 00:00			28 Oct 2020 14:11	1
Batch ID: R371553 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			28 Oct 2020 19:48	250
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			28 Oct 2020 19:27	25
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			28 Oct 2020 17:00	5
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			28 Oct 2020 14:53	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			28 Oct 2020 15:35	25
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			28 Oct 2020 15:14	250
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			28 Oct 2020 17:42	50
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			28 Oct 2020 17:21	5
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			28 Oct 2020 14:32	1
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			28 Oct 2020 18:24	100
HS20101079-06	16EW04-201020	20 Oct 2020 12:30			28 Oct 2020 18:03	10
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			28 Oct 2020 19:06	100
HS20101079-07	16RW01-201020	20 Oct 2020 13:15			28 Oct 2020 18:45	10
Batch ID: R371594 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			26 Oct 2020 14:15	10
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			26 Oct 2020 13:05	1

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371917 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			03 Nov 2020 02:55	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			03 Nov 2020 03:13	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			03 Nov 2020 03:31	1
Batch ID: R372182 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101079-01	16EW01-201020	20 Oct 2020 07:45			09 Nov 2020 09:42	1
HS20101079-02	16WW49-201020	20 Oct 2020 08:50			09 Nov 2020 09:42	1
HS20101079-03	16WW48-201020	20 Oct 2020 09:55			09 Nov 2020 09:42	1
HS20101079-04	16WW51-201020	20 Oct 2020 10:55			09 Nov 2020 09:42	1
HS20101079-05	16EW08-201020	20 Oct 2020 11:45			09 Nov 2020 09:42	1

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK Sample ID: **MBLK-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:00**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000250	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000250	0.000500								U

LCS Sample ID: **LCS-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:08**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0204	0.00100	0.01804	0	113	75 - 125				
Ethene	0.0186	0.00100	0.0168	0	111	75 - 125				
Methane	0.00935	0.000500	0.009647	0	96.9	75 - 125				

LCSD Sample ID: **LCSD-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:19**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0200	0.00100	0.01804	0	111	75 - 125	0.02037	1.7	30	
Ethene	0.0179	0.00100	0.0168	0	107	75 - 125	0.01859	3.66	30	
Methane	0.0105	0.000500	0.009647	0	109	75 - 125	0.009349	11.8	30	

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **26-Oct-2020 14:31**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807468** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0245	0.00100	0.01804	0	136	75 - 125				S
Ethene	0.0261	0.00100	0.0168	0.002009	144	75 - 125				S
Methane	0.0131	0.000500	0.009647	0.001258	123	75 - 125				

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **26-Oct-2020 13:16**
Client ID: **16WW48-201020** Run ID: **FID-4_371594** SeqNo: **5807463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0111	0.00100	0.01804	0	61.4	75 - 125				S
Ethene	0.0124	0.00100	0.0168	0.001226	66.7	75 - 125				S
Methane	0.00691	0.000500	0.009647	0.003527	35.1	75 - 125				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 14:49**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807469** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0251	0.00100	0.01804	0	139	75 - 125	0.02450	2.53	30	S
Ethene	0.0267	0.00100	0.0168	0.002009	147	75 - 125	0.02614	2.06	30	S
Methane	0.0123	0.000500	0.009647	0.001258	114	75 - 125	0.01312	6.57	30	

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 13:34**
Client ID: **16WW48-201020** Run ID: **FID-4_371594** SeqNo: **5807464** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0261	0.00100	0.01804	0	144	75 - 125	0.01109	80.6	30	SR
Ethene	0.0261	0.00100	0.0168	0.001226	148	75 - 125	0.01244	71	30	SR
Methane	0.0133	0.000500	0.009647	0.003527	102	75 - 125	0.006909	63.5	30	R

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371553 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201028** Units: **UG/L** Analysis Date: **28-Oct-2020 13:50**
Client ID: Run ID: **VOA6_371553** SeqNo: **5806473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.26*	*1.0*	*50*	*0*	*82.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.08*	*1.0*	*50*	*0*	*88.2*	*85 - 114*				
Surr: Dibromofluoromethane	*42.6*	*1.0*	*50*	*0*	*85.2*	*80 - 119*				
Surr: Toluene-d8	*48.88*	*1.0*	*50*	*0*	*97.8*	*89 - 112*				

LCS Sample ID: **VLCSW-201028** Units: **UG/L** Analysis Date: **28-Oct-2020 13:08**
Client ID: Run ID: **VOA6_371553** SeqNo: **5806472** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	21.12	1.0	20	0	106	80 - 119				
1,1-Dichloroethene	14.99	1.0	20	0	75.0	71 - 131				
1,2-Dichloroethane	22.35	1.0	20	0	112	73 - 128				
cis-1,2-Dichloroethene	19.47	1.0	20	0	97.3	78 - 123				
Methylene chloride	17.67	2.0	20	0	88.3	74 - 124				
Trichloroethene	23.08	1.0	20	0	115	79 - 123				
Vinyl chloride	15.03	1.0	20	0	75.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.48*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.44*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*50.84*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*51.14*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371553 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101079-03MS** Units: **UG/L** Analysis Date: **28-Oct-2020 15:56**
Client ID: **16WW48-201020** Run ID: **VOA6_371553** SeqNo: **5806479** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	5403	250	5000	0	108	80 - 119				
1,1-Dichloroethene	4587	250	5000	0	91.7	71 - 131				
1,2-Dichloroethane	5789	250	5000	0	116	73 - 128				
cis-1,2-Dichloroethene	21390	250	5000	15590	116	78 - 123				
Methylene chloride	4565	500	5000	0	91.3	74 - 124				
Trichloroethene	22570	250	5000	14450	162	79 - 123				S
Vinyl chloride	4371	250	5000	0	87.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*10410*	*250*	*12500*	*0*	*83.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*11430*	*250*	*12500*	*0*	*91.5*	*85 - 114*				
Surr: Dibromofluoromethane	*10830*	*250*	*12500*	*0*	*86.6*	*80 - 119*				
Surr: Toluene-d8	*11820*	*250*	*12500*	*0*	*94.5*	*89 - 112*				

MSD Sample ID: **HS20101079-03MSD** Units: **UG/L** Analysis Date: **28-Oct-2020 16:18**
Client ID: **16WW48-201020** Run ID: **VOA6_371553** SeqNo: **5806480** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	5616	250	5000	0	112	80 - 119	5403	3.86	20	
1,1-Dichloroethene	4292	250	5000	0	85.8	71 - 131	4587	6.65	20	
1,2-Dichloroethane	5992	250	5000	0	120	73 - 128	5789	3.46	20	
cis-1,2-Dichloroethene	21130	250	5000	15590	111	78 - 123	21390	1.22	20	
Methylene chloride	4721	500	5000	0	94.4	74 - 124	4565	3.36	20	
Trichloroethene	21390	250	5000	14450	139	79 - 123	22570	5.38	20	S
Vinyl chloride	4299	250	5000	0	86.0	58 - 137	4371	1.66	20	
Surr: 1,2-Dichloroethane-d4	*11120*	*250*	*12500*	*0*	*88.9*	*81 - 118*	*10410*	*6.61*	*20*	
Surr: 4-Bromofluorobenzene	*11370*	*250*	*12500*	*0*	*90.9*	*85 - 114*	*11430*	*0.572*	*20*	
Surr: Dibromofluoromethane	*11020*	*250*	*12500*	*0*	*88.2*	*80 - 119*	*10830*	*1.78*	*20*	
Surr: Toluene-d8	*11770*	*250*	*12500*	*0*	*94.2*	*89 - 112*	*11820*	*0.375*	*20*	

The following samples were analyzed in this batch:

HS20101079-01	HS20101079-02	HS20101079-03	HS20101079-04
HS20101079-05	HS20101079-06	HS20101079-07	HS20101079-08

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371048 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **MBLK-102120** Units: **mg/L** Analysis Date: **22-Oct-2020 01:51**
Client ID: Run ID: **ICS-Integrion_371048** SeqNo: **5794524** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-102120** Units: **mg/L** Analysis Date: **22-Oct-2020 02:09**
Client ID: Run ID: **ICS-Integrion_371048** SeqNo: **5794525** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	4.022	0.100	4	0	101	80 - 120				
Nitrogen, Nitrate (As N)	4.148	0.100	4	0	104	80 - 120				
Sulfate	18.79	0.500	20	0	94.0	80 - 120				

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **21-Oct-2020 20:09**
Client ID: **16WW48-201020** Run ID: **ICS-Integrion_371048** SeqNo: **5794518** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	16.76	0.500	10	7.352	94.1	80 - 120				
Nitrogen, Nitrate (As N)	11.47	0.500	10	0	115	80 - 120				
Sulfate	2338	2.50	50	2334	7.79	80 - 120				SEO

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **21-Oct-2020 20:27**
Client ID: **16WW48-201020** Run ID: **ICS-Integrion_371048** SeqNo: **5794519** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	16.87	0.500	10	7.352	95.2	80 - 120	16.76	0.633	20	
Nitrogen, Nitrate (As N)	11.56	0.500	10	0	116	80 - 120	11.47	0.768	20	
Sulfate	2350	2.50	50	2334	32.3	80 - 120	2338	0.523	20	SEO

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371121 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:09**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796038** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:17**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796039** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1013	5.00	1000	0	101	85 - 115				

LCSD Sample ID: **WLCSD2-201022** Units: **mg/L** Analysis Date: **22-Oct-2020 22:42**
Client ID: Run ID: **ManTech01_371121** SeqNo: **5796042** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1016	5.00	1000	0	102	85 - 115	1013	0.301	20	

DUP Sample ID: **HS20101079-03DUP** Units: **mg/L** Analysis Date: **22-Oct-2020 22:55**
Client ID: **16WW48-201020** Run ID: **ManTech01_371121** SeqNo: **5796044** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	343.9	5.00					351.3	2.13	20	

The following samples were analyzed in this batch: HS20101079-01 HS20101079-03

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101079

QC BATCH REPORT

Batch ID: R371917 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:19**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814879** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:37**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814880** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.828	0.100	4	0	95.7	80 - 120				

MS Sample ID: **HS20101310-11MS** Units: **mg/L** Analysis Date: **03-Nov-2020 06:49**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814901** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.111	0.100	2	1.274	91.9	80 - 120				

MSD Sample ID: **HS20101310-11MSD** Units: **mg/L** Analysis Date: **03-Nov-2020 07:07**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814902** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.191	0.100	2	1.274	95.9	80 - 120	3.111	2.53	20	

The following samples were analyzed in this batch: HS20101079-02 HS20101079-04 HS20101079-05

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101079**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 09-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101079

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	Sub
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	WET068
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	VOA260
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	RSK022
HS20101079-01	16EW01-201020	Login	10/21/2020 1:00:57 PM	PMG	Sub

ALS Houston, US Date: 09-Nov-20

Sample Receipt Checklist

Work Order ID: HS20101079 **Date/Time Received:** 21-Oct-2020 09:30

Client Name: CBI-Houston **Received by:** Jared R. Makan

Completed By:	/S/ Paresh M. Giga	21-Oct-2020 13:23	**Reviewed by:**	/S/ RJ Modashia	21-Oct-2020 16:38
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.5C U/c	IR31	
Cooler(s)/Kit(s):	43016		
Date/Time sample(s) sent to storage:	10/21/2020 13:45		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D. / Time	Sample Matrix	Date /	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16 EW01-201020	W6	10/20/20/0745		10	X	X	X	X	X	X					
16WW49-201020	W6	10/20/20/0850		7	X	X			X	X					
16WW48-201020	W6	10/20/20/0955		10	X	X	X	X	X	X					
16WW48-201020-MS	W6	10/20/20/0955		10	X	X	X	X	X	X					
16WW48-201020-MSD	W6	10/20/20/0955		10	X	X	X	X	X	X					
16WW51-201020	W6	10/20/20/1055		7	X	X			X	X					
16EW08-201020	W6	10/20/20/1145		7	X	X			X	X					
16EW04-201020	W6	10/20/20/1230		4	X					X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Hinerman	10/21/20	09:30							

Remarks: Cooler 43016 Temp 1.5 IR31 CFU

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101079

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16RW01-201020	W G	10/20/20/1315		4	X					X					
TRIP BLANK-201020	W	10/20/20		2	X										

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101079

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Wheeler	10/21/20	09:30							

Remarks:

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

u3016

CUSTODY SEAL

Date: 10/20/20 Time: 1430
Name: Scott Beesinger
Company: SHAW

Seal Broken By:
Date: 10/21/20

u3016 OCT 21 2020

Must Deliver Next Business Day
Time and Tempature Sensitive!

u3016

ORIGIN ID:SGRA (903) 930-6183
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 20JUN20
ACTWGT: 1.00 LB MAN
CAD: 9001302/CAFE3211
DIMS: 18x16x10 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-6660
REF: LHAAP 16 - B072394 - RJ
RMA:

FedEx
Expr

FedEx
TRK# 0221 1891 8877 8325

WED - 21 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

October 26, 2020 Service Request No:E2001015

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101079

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001015.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001015
Project:	HS20101079	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Seven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD recoveries were outside control limits, Sample result is 10X greater than the spike amount.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001015
Project: HS20101079

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001015-001	16EW01-201020	10/20/2020	0745
E2001015-002	16WW49-201020	10/20/2020	0850
E2001015-003	16WW48-201020	10/20/2020	0955
E2001015-004	16WW51-201020	10/20/2020	1055
E2001015-005	16EW08-201020	10/20/2020	1145
E2001015-006	16EW04-201020	10/20/2020	1230
E2001015-007	16RW01-201020	10/20/2020	1315

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001015-001	16EW01-201020	Ground Water	10/20/20 0745	**IV**
E2001015-002	16WW49-201020	Ground Water	10/20/20 0850	**IV**
E2001015-003	16WW48-201020	Ground Water	10/20/20 0955	**IV**
E2001015-004	16WW51-201020	Ground Water	10/20/20 1055	**IV**
E2001015-005	16EW08-201020	Ground Water	10/20/20 1145	**IV**
E2001015-006	16EW04-201020	Ground Water	10/20/20 1230	**IV**
E2001015-007	16RW01-201020	Ground Water	10/20/20 1315	**IV**

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	Level II due 11/4,level IV 11/11
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101079-06**	**16EW04-201020**	**Groundwater**	**20 Oct 2020 12:30**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101079-07**	**16RW01-201020**	**Groundwater**	**20 Oct 2020 13:15**
	SUB_Perch-6850			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

ENVIRONMENTAL | RIGHT PARTNER

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. Mascorro	Date/Time:	10/22/20
Received By:		Date/Time:	10/22/20 1105
Cooler ID(s):		Temperature(s):	

Cooler Receipt Form

ALS Environmental

Project Chemist: LH

Client/Project: ALS-HI

Thermometer ID: IR41

Date/Time Received: 10/22/20 Initials: LH

Date/Time Logged in: 10/22/20 Initials: LH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	LH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0745
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW01-201020	**Units:**	µg/L
Lab Code:	E2001015-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**27.5**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:50	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0850
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW49-201020	**Units:**	µg/L
Lab Code:	E2001015-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:58	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:39	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1055
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW51-201020	**Units:**	µg/L
Lab Code:	E2001015-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:36	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW08-201020	**Units:**	µg/L
Lab Code:	E2001015-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:44	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1230
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW04-201020	**Units:**	µg/L
Lab Code:	E2001015-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:52	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1315
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW01-201020	**Units:**	µg/L
Lab Code:	E2001015-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 22:00	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

ALS Environmental - Houston HRMS
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/26/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		16WW48-201020MS				16WW48-201020DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000533-04				EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

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November 06, 2020 **Analytical Report for Service Request No:** K2009599

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **K2009599.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009599
Date Received: 10/22/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 10/22/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

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K2009599

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14982**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

QC Level: DOD IV (DoD Data Package)

RIGHT SOLUTIONS | RIGHT PARTNER

Received by NRedersen ALS 10/22/20 1000

K2009599

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14982**

Relinquished By: _____ Date/Time: 10/21/2020 1800

Received By: _____ Date/Time: 10/22/20 1000

Cooler ID(s): _____ Temperature(s): _____

PM KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 09599

Received: 10/22/20 Opened: 10/22/20 By: AR Unloaded: 10/22/20 By: AR

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
0.7	—	IR01	14982	—	—	1891 8881 8403	

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16EW01-201020	K2009599-001	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW49-201020	K2009599-002	**3.74**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW48-201020	K2009599-003	**8.44**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW51-201020	K2009599-004	**4.52**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW08-201020	K2009599-005	**332**	5.0	2.0	0.7	10	11/03/20 11:36	
Method Blank	K2009599-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009599-003DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	8.44	8.47	8.46	<1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009599-003MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	8.44	30.5	25.0	88	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009599-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

HS20101079 8260_W_DOD Raw Data

ALS WO# HS20101079

MSVOA06 -Logbook

Batch: 42421 **Analyst:** Presenta Cabascango

Date: 10-25-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	10-25-2020 04:21 pm	1.00	50 mL	50 mL	X102501.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	10-25-2020 04:42 pm	1.00	50 mL	50 mL	X102502.D	Liquid	Y	NA
	0.10 uL cal std/100 mL DI									
3	VSTD000.5	ICAL2	10-25-2020 05:24 pm	1.00	50 mL	50 mL	X102503.D	Liquid	Y	NA
	0.10 uL cal std/50 mL DI									
4	VSTD001	ICAL3	10-25-2020 05:45 pm	1.00	50 mL	50 mL	X102504.D	Liquid	Y	NA
	0.20 uL cal std/50 mL DI									
5	VSTD002	ICAL4	10-25-2020 06:06 pm	1.00	50 mL	50 mL	X102505.D	Liquid	Y	NA
	0.40 uL cal std/50 mL DI									
6	VSTD005	ICAL5	10-25-2020 06:27 pm	1.00	50 mL	50 mL	X102506.D	Liquid	Y	NA
	1.0 uL cal std/50 mL DI									
7	VSTD020	ICAL6	10-25-2020 06:48 pm	1.00	50 mL	50 mL	X102507.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
8	VSTD050	ICAL7	10-25-2020 07:09 pm	1.00	50 mL	50 mL	X102508.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
9	VSTD100	ICAL8	10-25-2020 07:29 pm	1.00	50 mL	50 mL	X102509.D	Liquid	Y	NA
	20 uL cal std/50 mL DI									
10	VSTD150	ICAL9	10-25-2020 07:50 pm	1.00	50 mL	50 mL	X102510.D	Liquid	Y	NA
	30 uL cal std/50 mL DI									
11	VSTD200	ICAL	10-25-2020 08:11 pm	1.00	50 mL	50 mL	X102511.D	Liquid	Y	NA
	40 uL cal std/50 mL DI									
12	BLANK	SAMP	10-25-2020 08:32 pm	1.00	50 mL	50 mL	X102512.D	Liquid	Y	NA
13	BLANK	SAMP	10-25-2020 08:53 pm	1.00	50 mL	50 mL	X102513.D	Liquid	Y	NA
14	VSTD050	ICV	10-25-2020 09:14 pm	1.00	50 mL	50 mL	X102514.D	Liquid	Y	NA
	10 uL ical std/50 mL DI									
15	BLANK	SAMP	10-25-2020 09:35 pm	1.00	50 mL	50 mL	X102515.D	Liquid	Y	NA
16	VLCSW-201025	LCS	10-25-2020 09:56 pm	1.00	50 mL	50 mL	X102516.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
17	BLK	SAMP	10-25-2020 10:17 pm	1.00	50 mL	50 mL	X102517.D	Liquid	Y	NA
18	VBLKW-201025	MBLK	10-25-2020 10:38 pm	1.00	50 mL	50 mL	X102518.D	Liquid	Y	NA
19	HS20101167-11	SAMP	10-25-2020 10:59 pm	1.00	50 mL	50 mL	X102519.D	Liquid	Y	NA
20	HS20101167-01	SAMP	10-25-2020 11:21 pm	1.00	50 mL	50 mL	X102520.D	Liquid	Y	NA
21	HS20101167-01MS	MS	10-25-2020 11:42 pm	1.00	50 mL	50 mL	X102521.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
22	HS20101167-01MSD	MSD	10-26-2020 12:03 am	1.00	50 mL	50 mL	X102522.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
23	HS20101167-02	SAMP	10-26-2020 12:24 am	1.00	50 mL	50 mL	X102523.D	Liquid	Y	NA
24	HS20101167-03	SAMP	10-26-2020 12:45 am	1.00	50 mL	50 mL	X102524.D	Liquid	Y	NA
25	HS20101167-04	SAMP	10-26-2020 01:06 am	1.00	50 mL	50 mL	X102525.D	Liquid	Y	NA
26	HS20101167-05	SAMP	10-26-2020 01:27 am	1.00	50 mL	50 mL	X102526.D	Liquid	Y	NA
27	HS20101167-06	SAMP	10-26-2020 01:48 am	1.00	50 mL	50 mL	X102527.D	Liquid	Y	NA
28	HS20101167-07	SAMP	10-26-2020 02:09 am	1.00	50 mL	50 mL	X102528.D	Liquid	Y	NA
29	HS20101167-08	SAMP	10-26-2020 02:30 am	1.00	50 mL	50 mL	X102529.D	Liquid	Y	NA
30	HS20101167-09	SAMP	10-26-2020 02:51 am	1.00	50 mL	50 mL	X102530.D	Liquid	Y	NA
31	HS20101167-10	SAMP	10-26-2020 03:12 am	1.00	50 mL	50 mL	X102531.D	Liquid	Y	NA
32	HS20101049-01	SAMP	10-26-2020 03:33 am	1.00	50 mL	50 mL	X102532.D	Liquid	Y	NA
33	HS20101270-01	SAMP	10-26-2020 03:54 am	1.00	50 mL	50 mL	X102533.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-06
LCS/MS ID	
CAL STD ID	31106-52-01-02
BFB ID	31106-51-06
pH Paper	634-64-10

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
1,2-Dichloroethane	50.00	46.31	93	80-120
Trichloroethene	50.00	47.81	96	80-120
Methylene Chloride	50.00	43.89	88	80-120
cis-1,2-Dichloroethene	50.00	46.68	93	80-120
Vinyl Chloride	50.00	46.16	92	80-120
1,1,2-Trichloroethane	50.00	44.14	88	80-120
1,1-Dichloroethene	50.00	46.19	92	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Lab File ID: X102501 BFB Injection Date: 10/25/20

Instrument ID: VOA6 BFB Injection Time: 1621

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.0
75	30.0 - 60.0% of mass 95	58.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.4 (0.4)1
174	Greater than 50.0% of mass 95	89.4
175	5.0 - 9.0% of mass 174	7.9 (8.9)1
176	95.0 - 101.0% of mass 174	86.9 (97.2)1
177	5.0 - 9.0% of mass 176	4.6 (5.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X102502	10/25/20	1642
02	VSTD000.5	VSTD000.5	X102503	10/25/20	1724
03	VSTD001	VSTD001	X102504	10/25/20	1745
04	VSTD002	VSTD002	X102505	10/25/20	1806
05	VSTD005	VSTD005	X102506	10/25/20	1827
06	VSTD020	VSTD020	X102507	10/25/20	1848
07	VSTD050	VSTD050	X102508	10/25/20	1909
08	VSTD100	VSTD100	X102509	10/25/20	1929
09	VSTD150	VSTD150	X102510	10/25/20	1950
10	VSTD200	VSTD200	X102511	10/25/20	2011
11	ICV	ICV	X102514	10/25/20	2114
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: VOA6 Calibration Date(s): 10/25/20 10/25/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1642 2011

LAB FILE ID: RF0.25: X102502 RF0.5: X102503 RF1: X102504
RF2: X102505 RF5: X102506 RF20: X102507

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
1,2-Dichloroethane		0.637	0.568	0.501	0.543	0.544
Trichloroethene		0.381	0.339	0.298	0.298	0.347
Methylene Chloride		0.998	0.868	0.781	0.768	0.727
cis-1,2-Dichloroethene		0.789	0.854	0.729	0.765	0.758
Vinyl Chloride		1.990	1.608	1.560	1.358	1.533
1,1,2-Trichloroethane		0.371	0.338	0.317	0.355	0.317
1,1-Dichloroethene		1.458	1.408	1.256	1.196	1.172
4-Bromofluorobenzene		1363	2133	4602	10188	42426
Dibromofluoromethane		0.683	0.653	0.617	0.673	0.662
Toluene-d8		4504	5855	11754	31270	131486
1,2-Dichloroethane-d4		1543	2362	4999	11402	46344

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010107

Instrument ID: VOA6 Calibration Date(s): 10/25/20 10/25/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1642 2011

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
1,2-Dichloroethane	AVRG		0.54001827	8.254	15.000
Trichloroethene	AVRG		0.32886398	8.008	15.000
Methylene Chloride	AVRG		0.79011013	11.841	15.000
cis-1,2-Dichloroethene	AVRG		0.78242092	5.776	15.000
Vinyl Chloride	AVRG		1.53714306	12.735	15.000
1,1,2-Trichloroethane	AVRG		0.32523954	7.480	15.000
1,1-Dichloroethene	AVRG		1.21777783	11.302	15.000
4-Bromofluorobenzene	LINR	3.987e-002	2.00729845	0.9979045	0.9900000
Dibromofluoromethane	AVRG		0.68831108	6.846	15.000
Toluene-d8	LINR	3.444e-002	0.68472816	0.9978314	0.9900000
1,2-Dichloroethane-d4	LINR	6.198e-004	1.14170833	0.9993034	0.9900000

FORM VI VOA

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

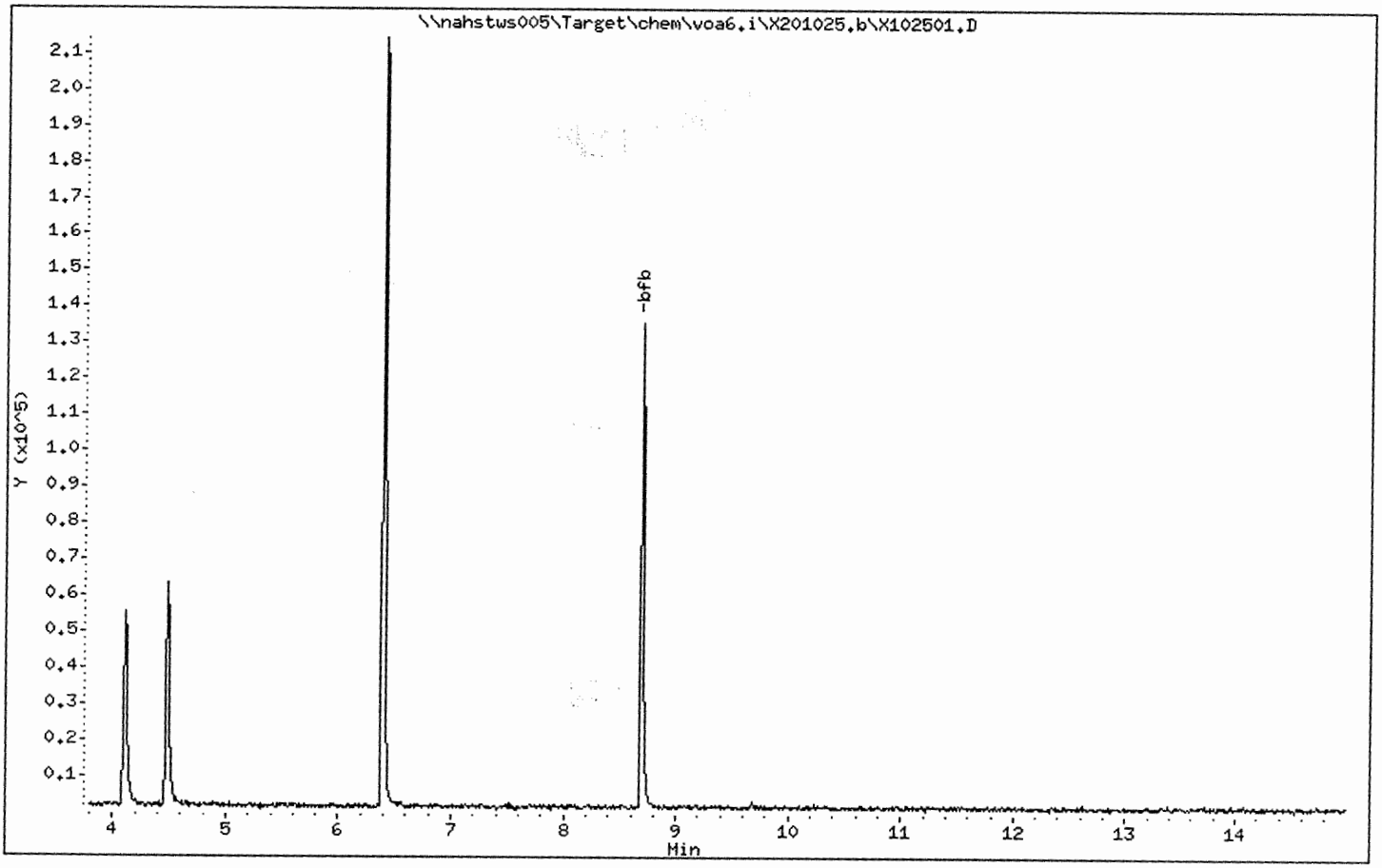
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

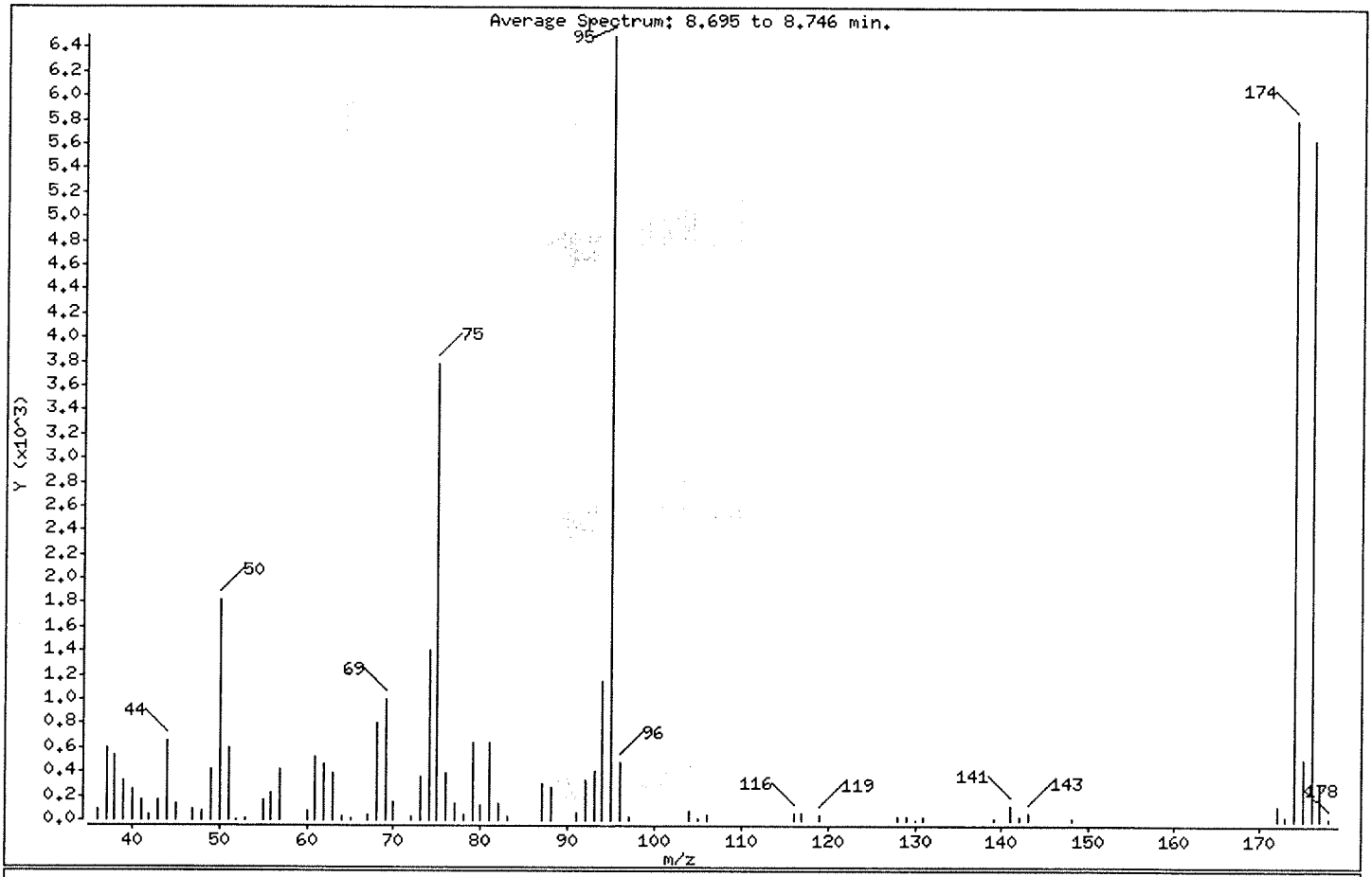
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	28.00
75	30.00 - 60.00% of mass 95	58.21
96	5.00 - 9.00% of mass 95	7.39
173	Less than 2.00% of mass 174	0.37 (0.41)
174	Greater than 50.00% of mass 95	89.43
175	5.00 - 9.00% of mass 174	7.93 (8.86)
176	95.00 - 101.00% of mass 174	86.92 (97.19)
177	5.00 - 9.00% of mass 176	4.59 (5.28)

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X102501.D

Spectrum: Average Spectrum: 8.695 to 8.746 min.

Location of Maximum: 95.00

Number of points: 73

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	85	57.00	418	80.00	125	128.00	32
37.00	598	60.00	77	81.00	647	129.00	25
38.00	531	61.00	530	82.00	136	130.00	7
39.00	331	62.00	462	83.00	25	131.00	23
40.00	251	63.00	389	87.00	304	139.00	11
41.00	162	64.00	32	88.00	276	141.00	125
42.00	45	65.00	13	91.00	58	142.00	27
43.00	158	67.00	40	92.00	323	143.00	62
44.00	662	68.00	802	93.00	396	148.00	14
45.00	129	69.00	1002	94.00	1155	172.00	117
47.00	83	70.00	155	95.00	6497	173.00	24
48.00	71	72.00	34	96.00	480	174.00	5810
49.00	419	73.00	365	97.00	24	175.00	515
50.00	1819	74.00	1406	104.00	74	176.00	5647
51.00	597	75.00	3782	105.00	12	177.00	298
52.00	7	76.00	391	106.00	41	178.00	13
53.00	16	77.00	127	116.00	58		
55.00	158	78.00	44	117.00	53		
56.00	225	79.00	645	119.00	46		

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102502.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 25-OCT-2020 16:42
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

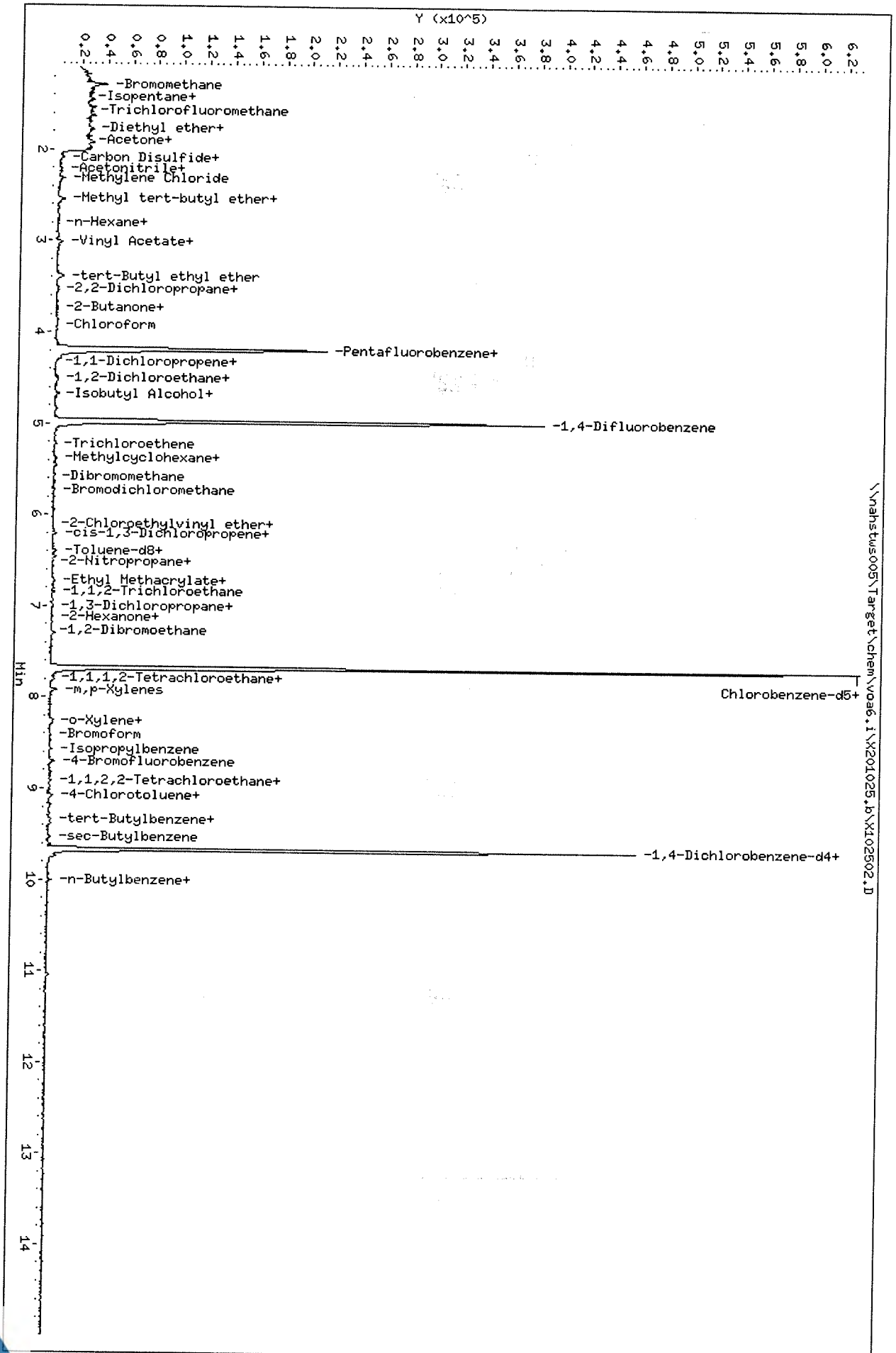
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150152	50.0000	
* 36 1,4-Difluorobenzene	114	4.977	4.977	(1.000)	287204	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	254000	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	90115	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	930	0.25000	0.38(Ta)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	1264	0.25000	2.49(a)
$ 30 Dibromofluoromethane	113	4.125	4.125	(0.985)	683	0.25000	0.33(aM)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	2041	0.25000	1.99(Ta)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	445	0.25000	0.26(aM)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	948	0.25000	0.25(aM)
33 1,2-Dichloroethane	62	4.576	4.576	(0.919)	1008	0.25000	0.32(a)
27 cis-1,2-Dichloroethene	96	3.559	3.559	(0.850)	630	0.25000	0.26(aM)
17 Methylene Chloride	84	2.313	2.313	(0.552)	1009	0.25000	0.42(aM)
38 Trichloroethene	130	5.228	5.228	(1.050)	367	0.25000	0.19(aM)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	1201	0.25000	0.26(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102502.D
Date : 25-OCT-2020 16:42
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D Page 1
Report Date: 30-Nov-2020 13:13

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 25-OCT-2020 17:24
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 16:42 Cal File: X102502.D
Als bottle: 6 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

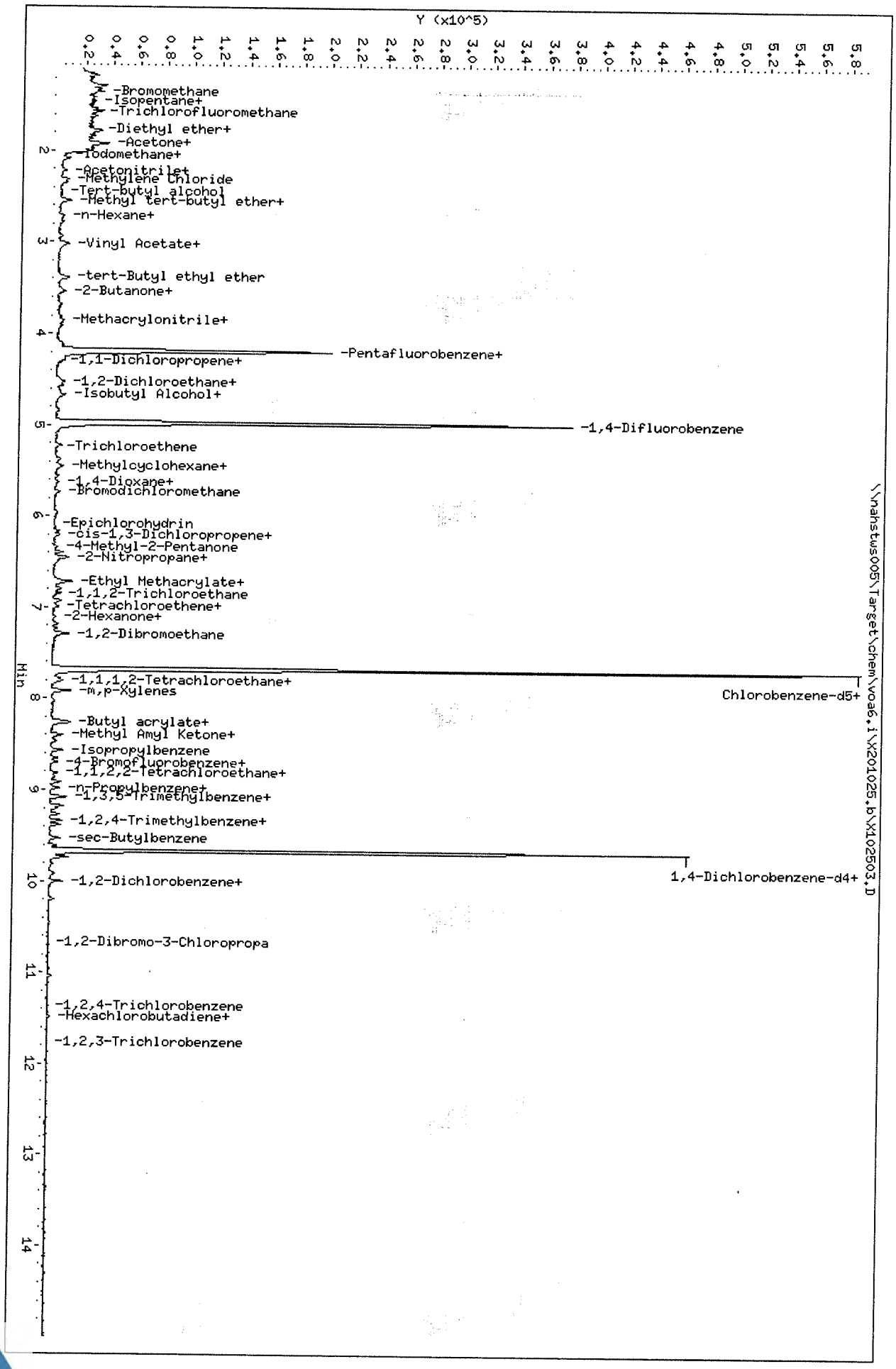
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	137561	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274062	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	236128	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	90393	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.490	4.490	(1.072)	1543	0.50000	0.67(TaM)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	1363	0.50000	2.57(a)
$ 30 Dibromofluoromethane	113	4.118	4.118	(0.983)	940	0.50000	0.49(a)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	4504	0.50000	2.37(Ta)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.894)	877	0.50000	0.57(aM)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	2005	0.50000	0.59(aM)
33 1,2-Dichloroethane	62	4.583	4.583	(0.922)	1745	0.50000	0.58(a)
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	1086	0.50000	0.50(aM)
17 Methylene Chloride	84	2.320	2.320	(0.554)	1373	0.50000	0.63(a)
38 Trichloroethene	130	5.235	5.235	(1.053)	1044	0.50000	0.57(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	2738	0.50000	0.64(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

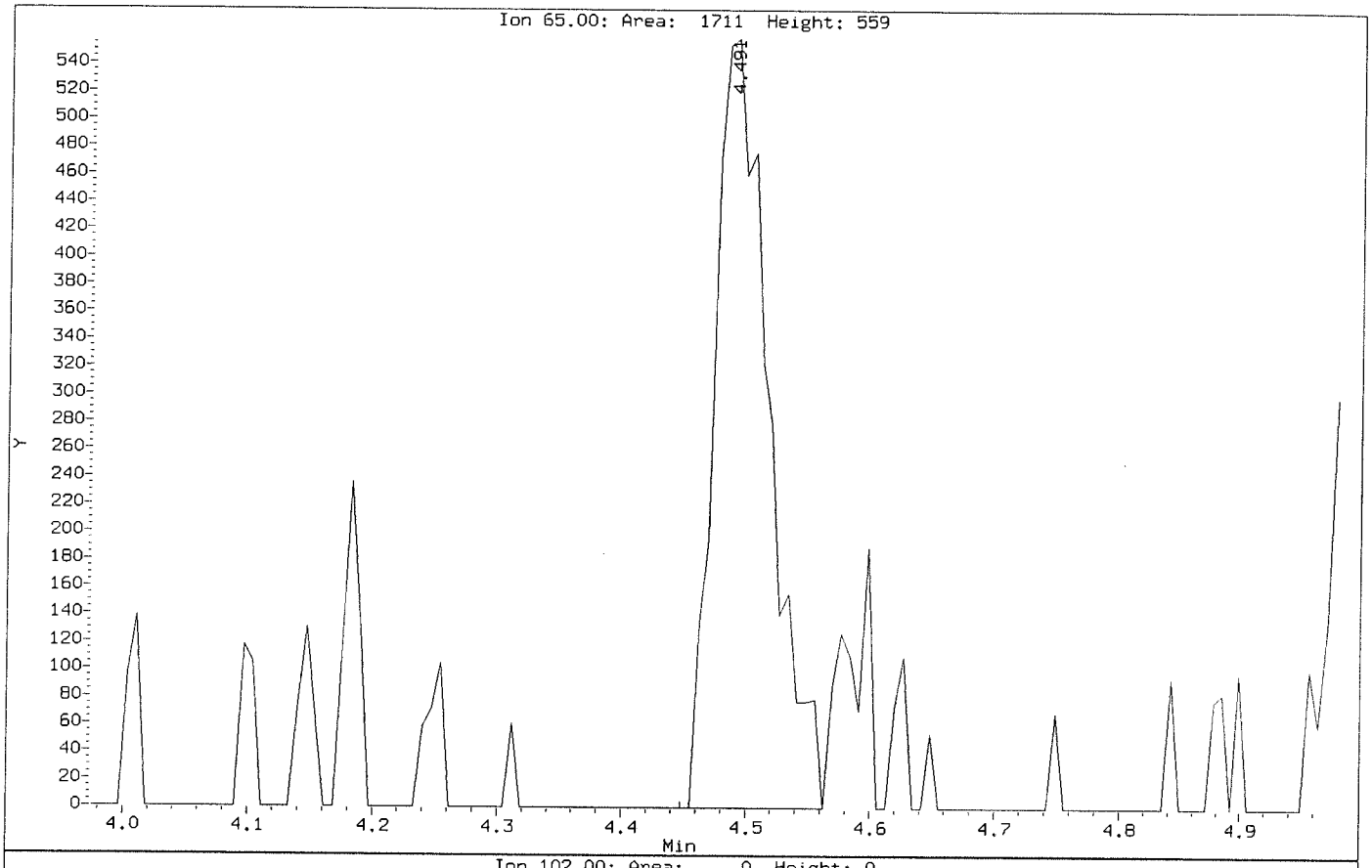


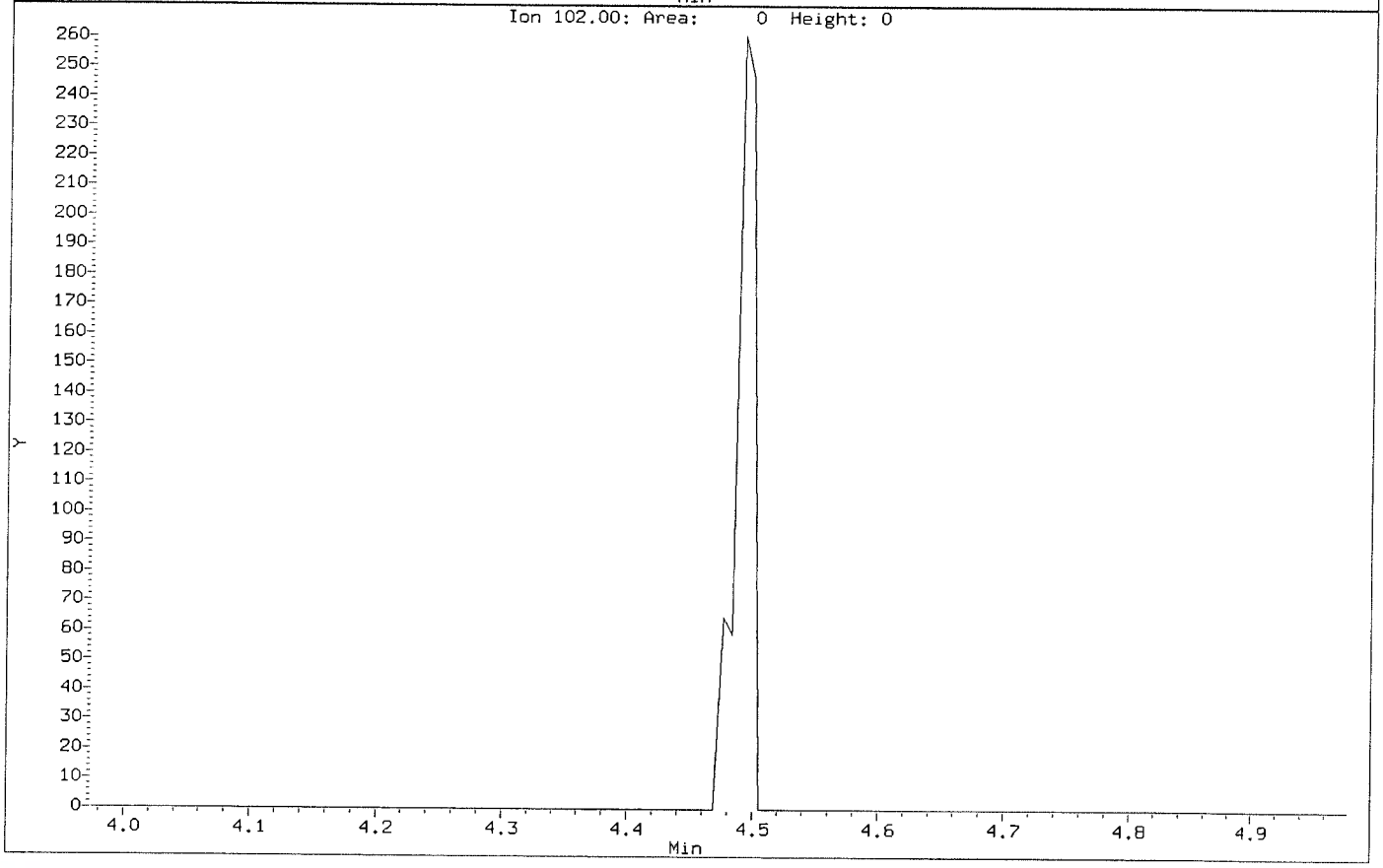
Data File: \\nahstus005\Target\chem\voa6.i\X201025.b\X102503.D
Date : 25-OCT-2020 17:24
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





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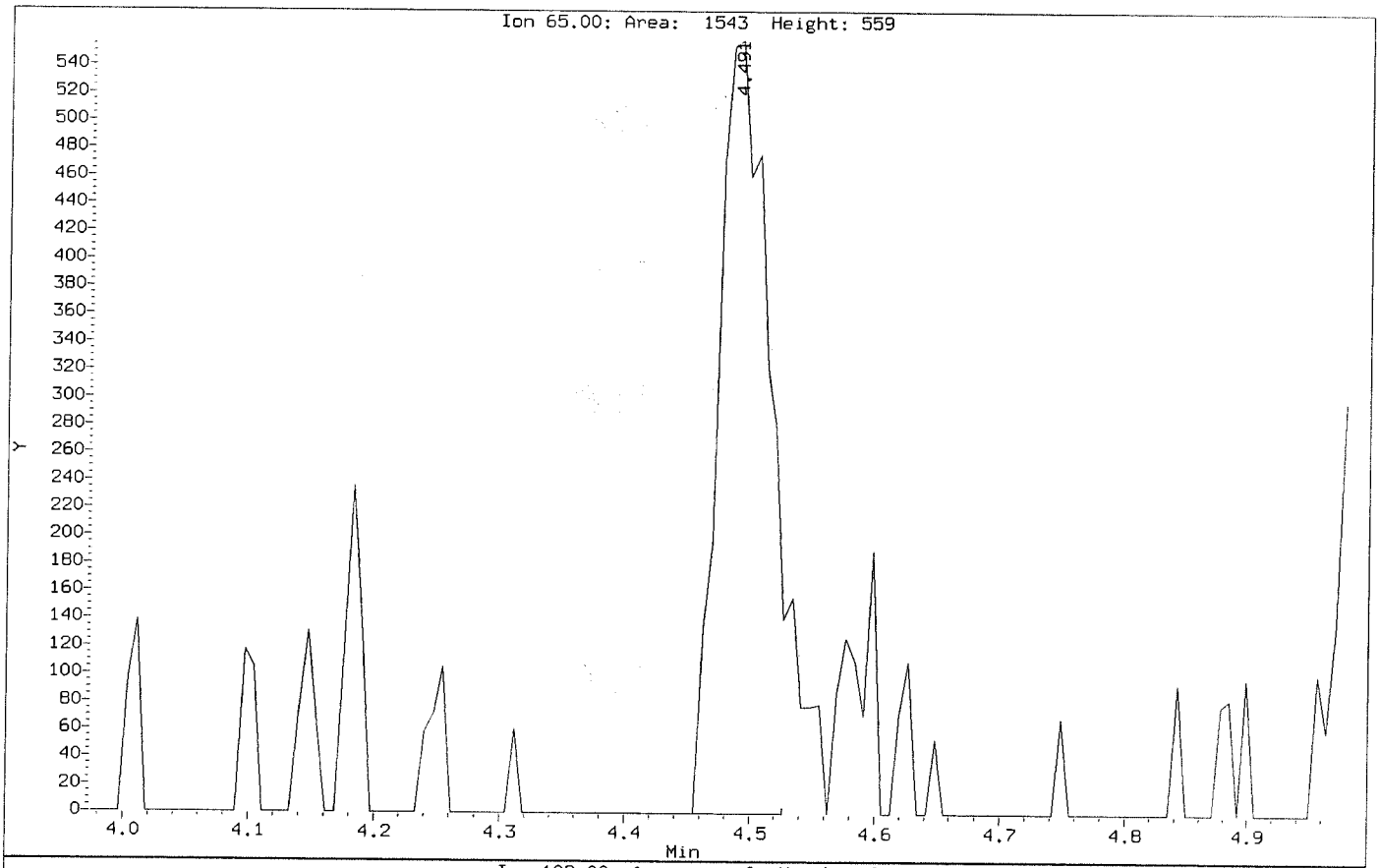
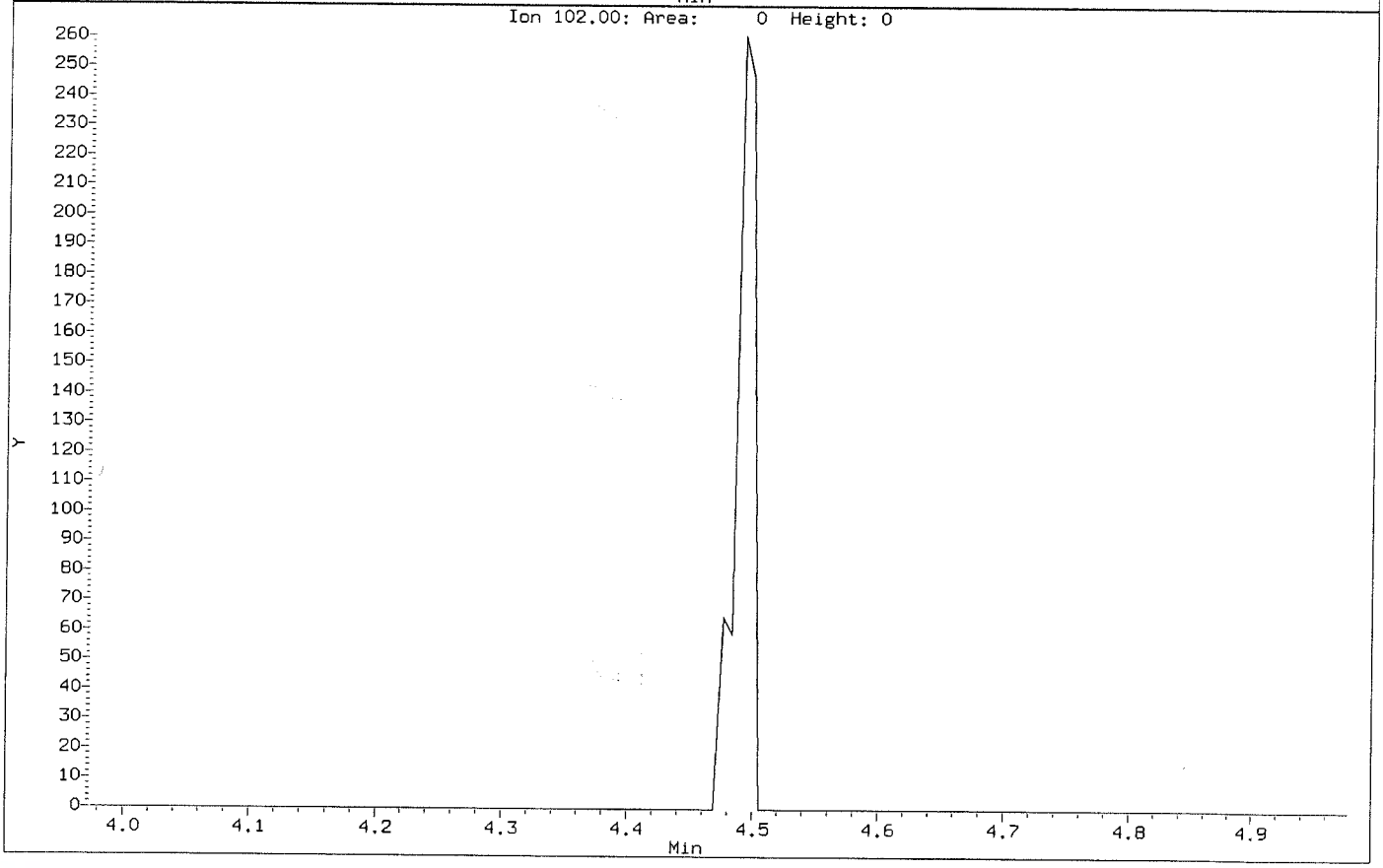
Instrument: voa6.i
Client Sample ID: VSTD000.5

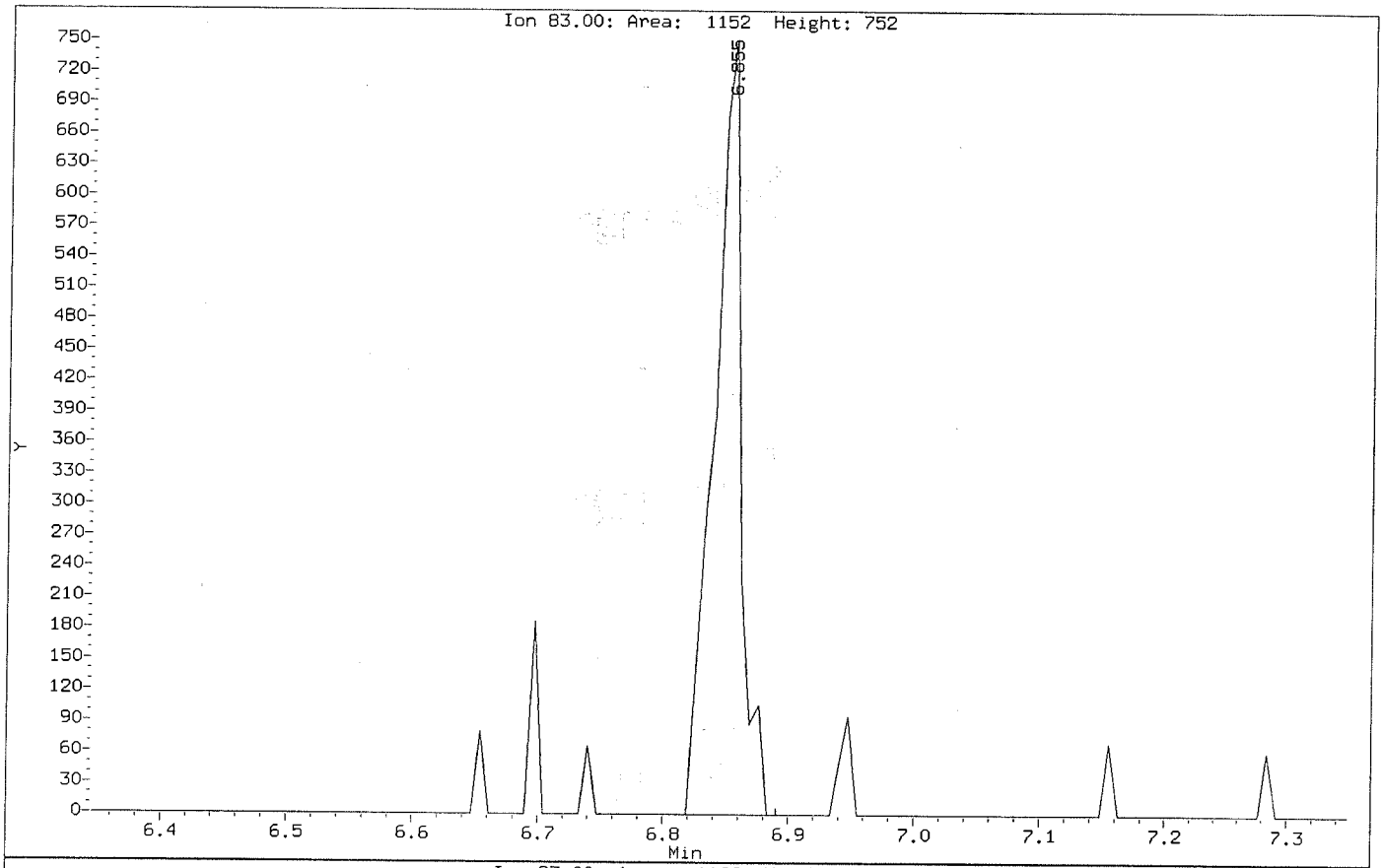
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

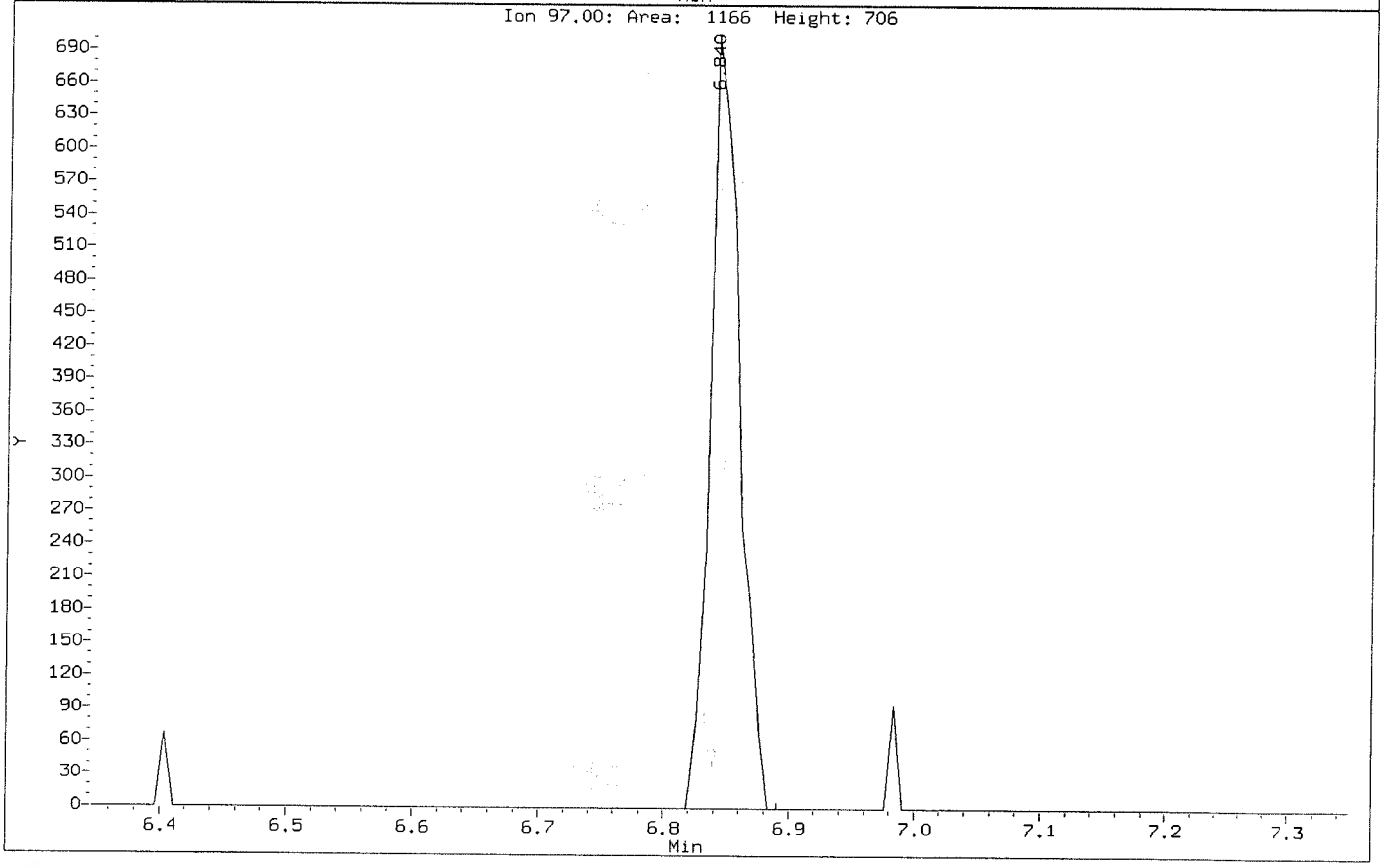




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5





Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
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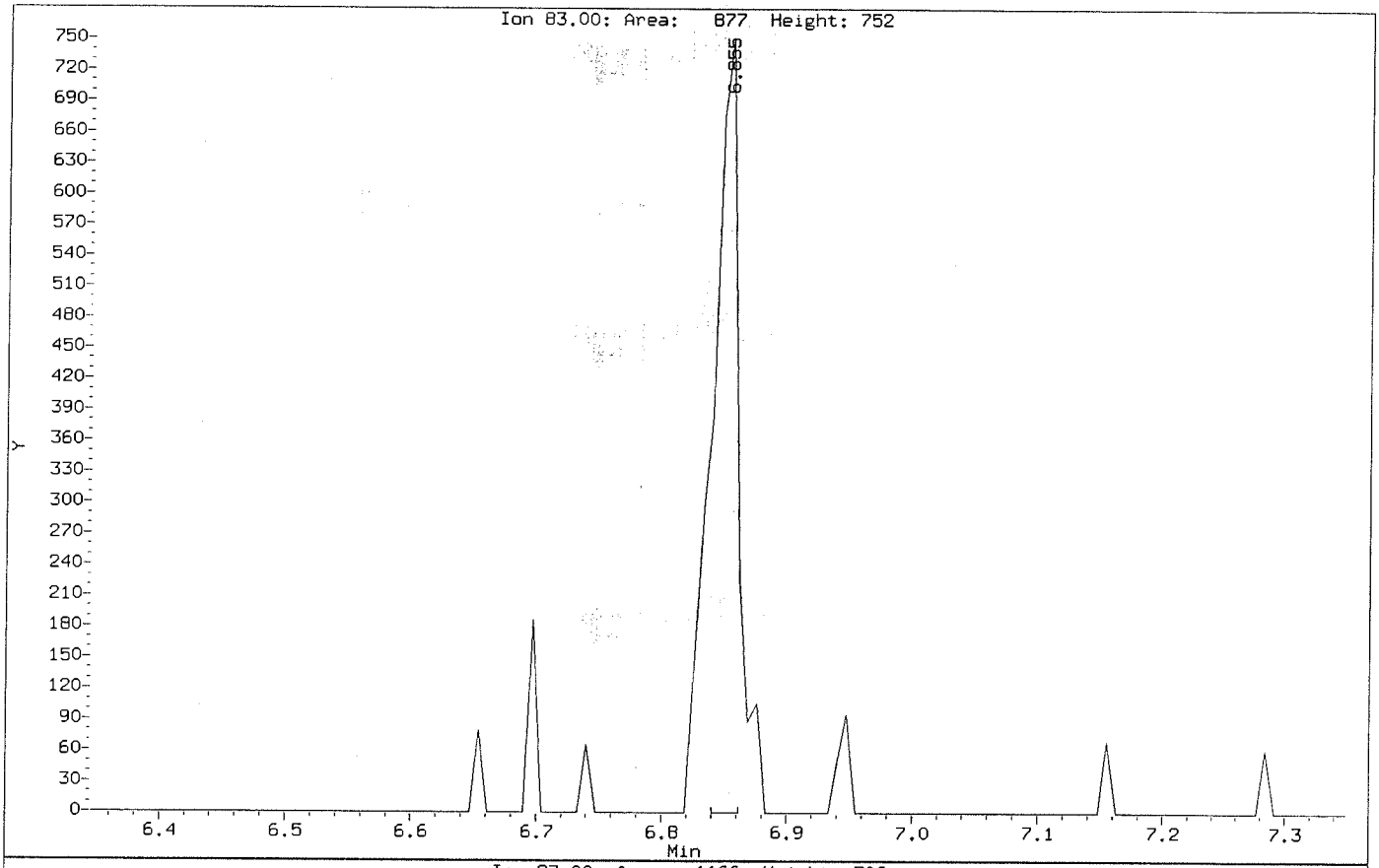
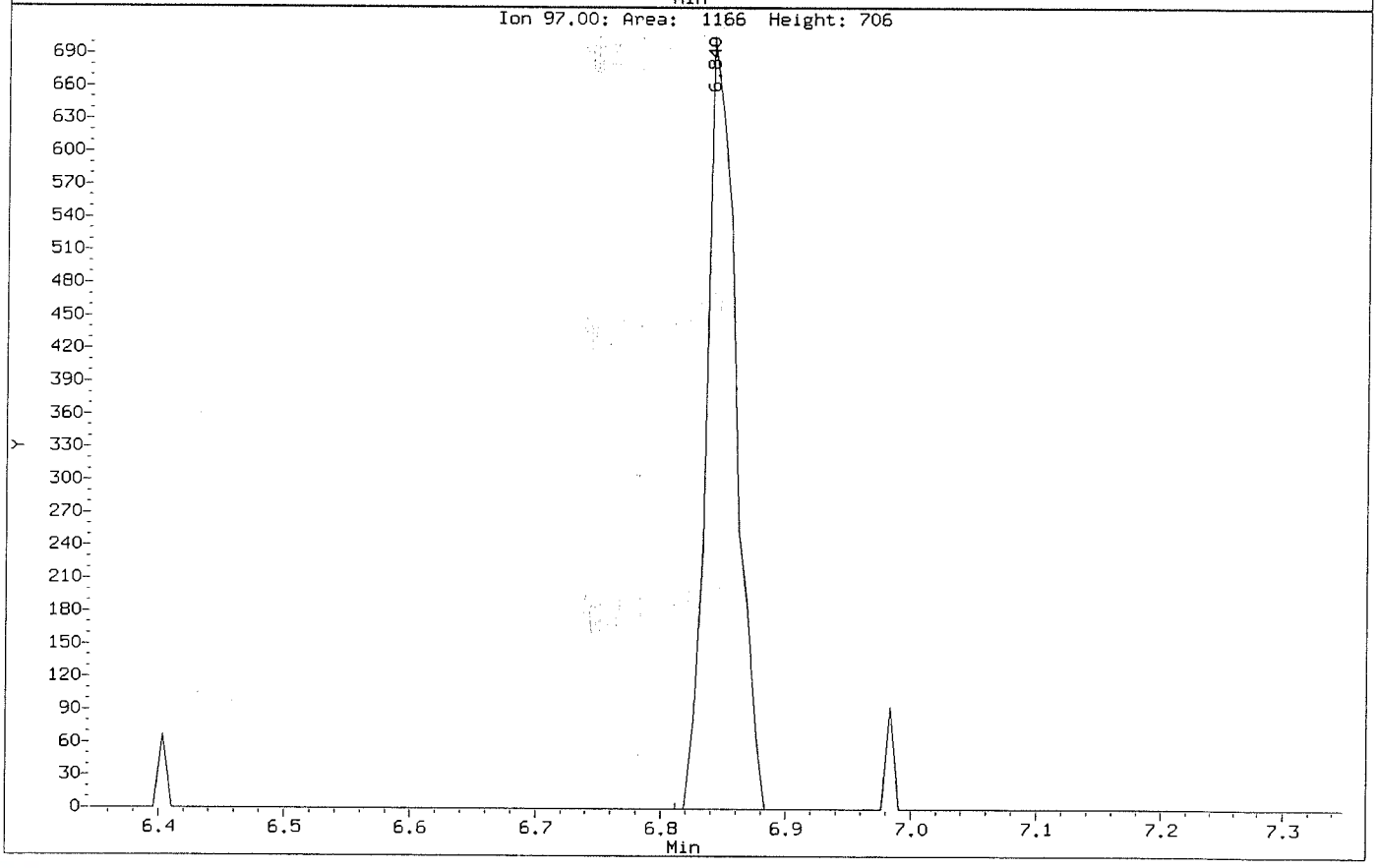
Instrument: voa6.i
Client Sample ID: VSTD000.5

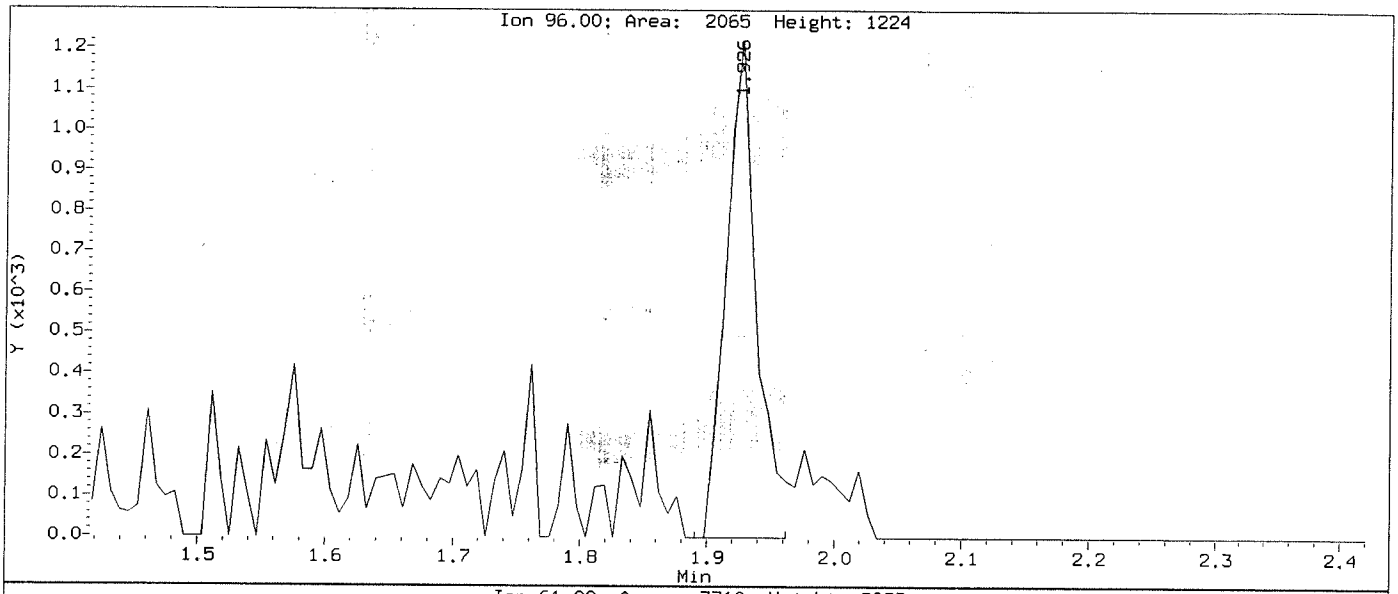
Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5

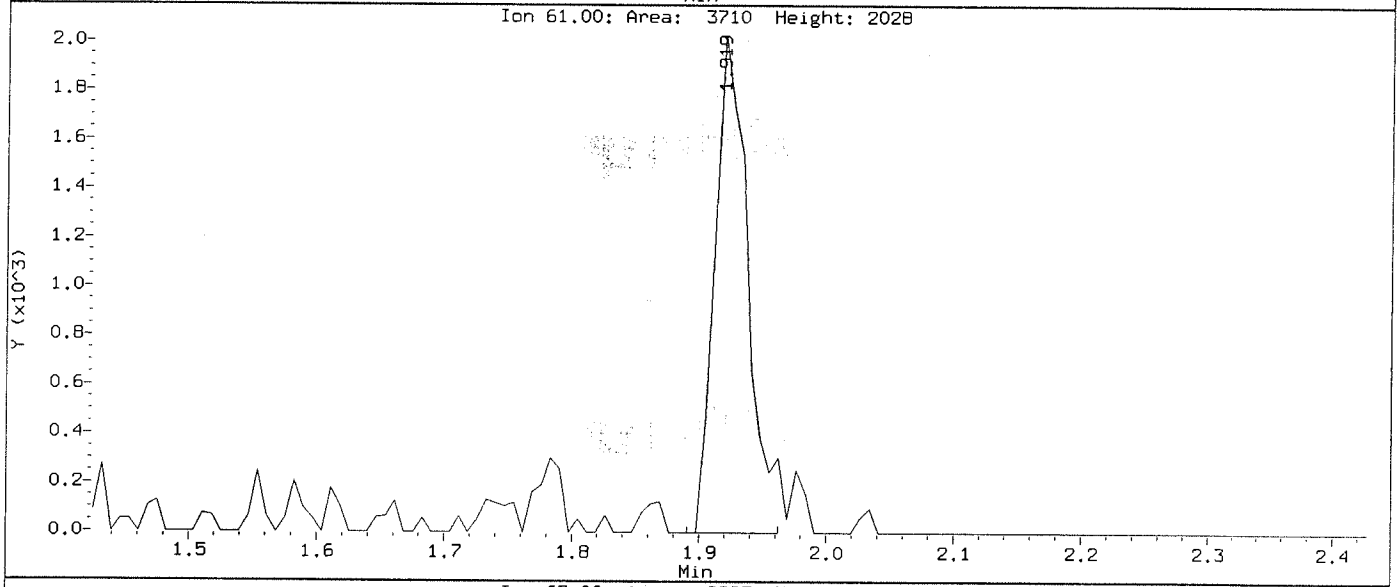


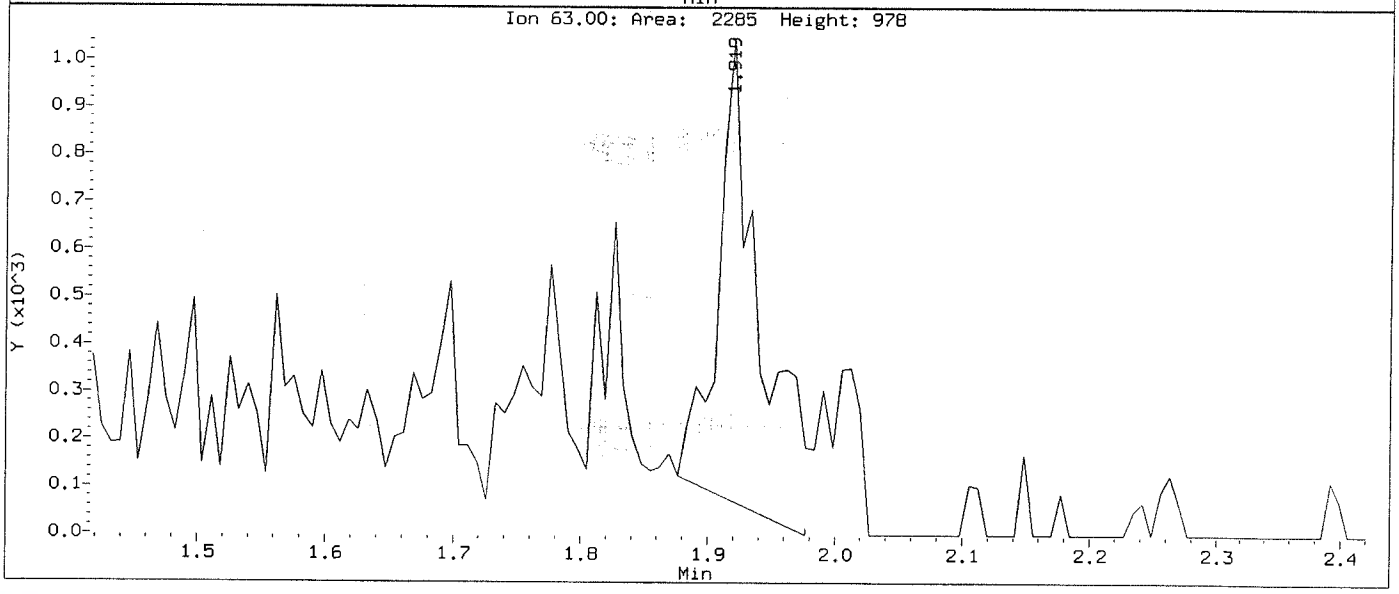


Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4







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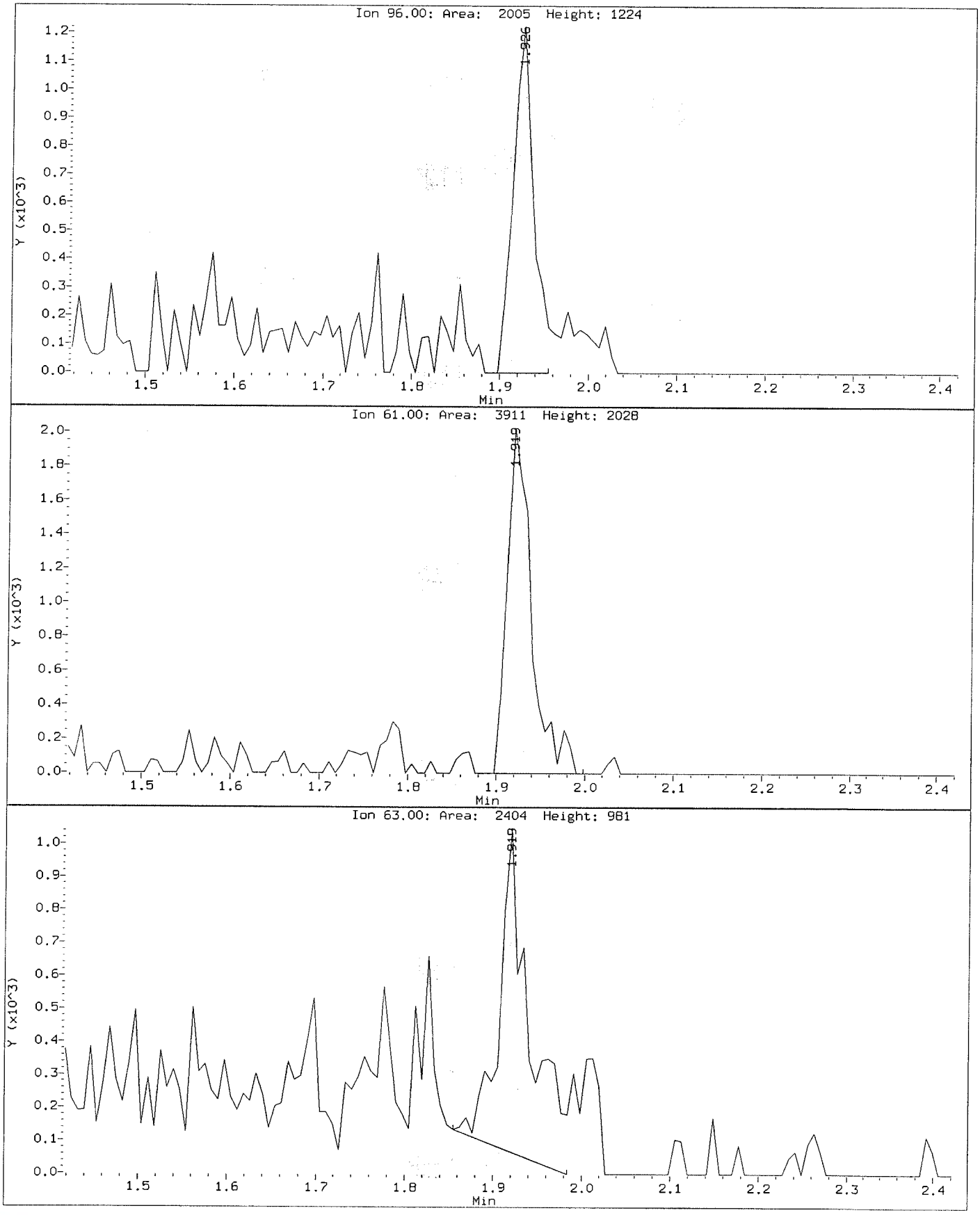
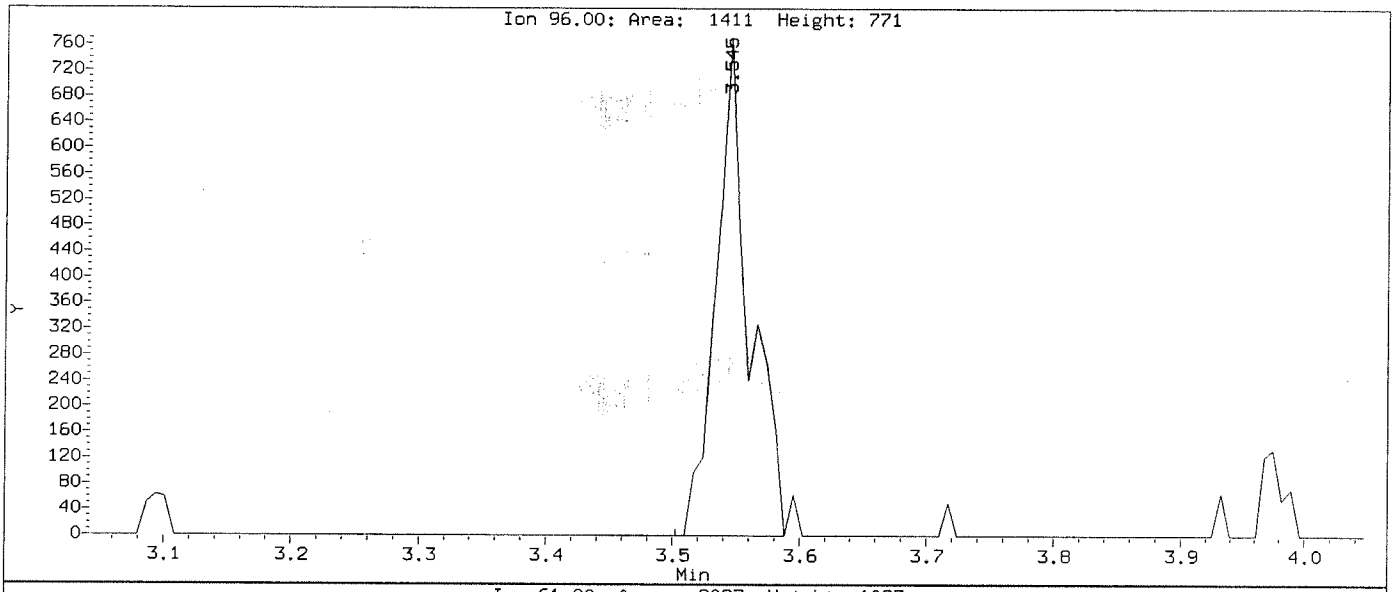
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

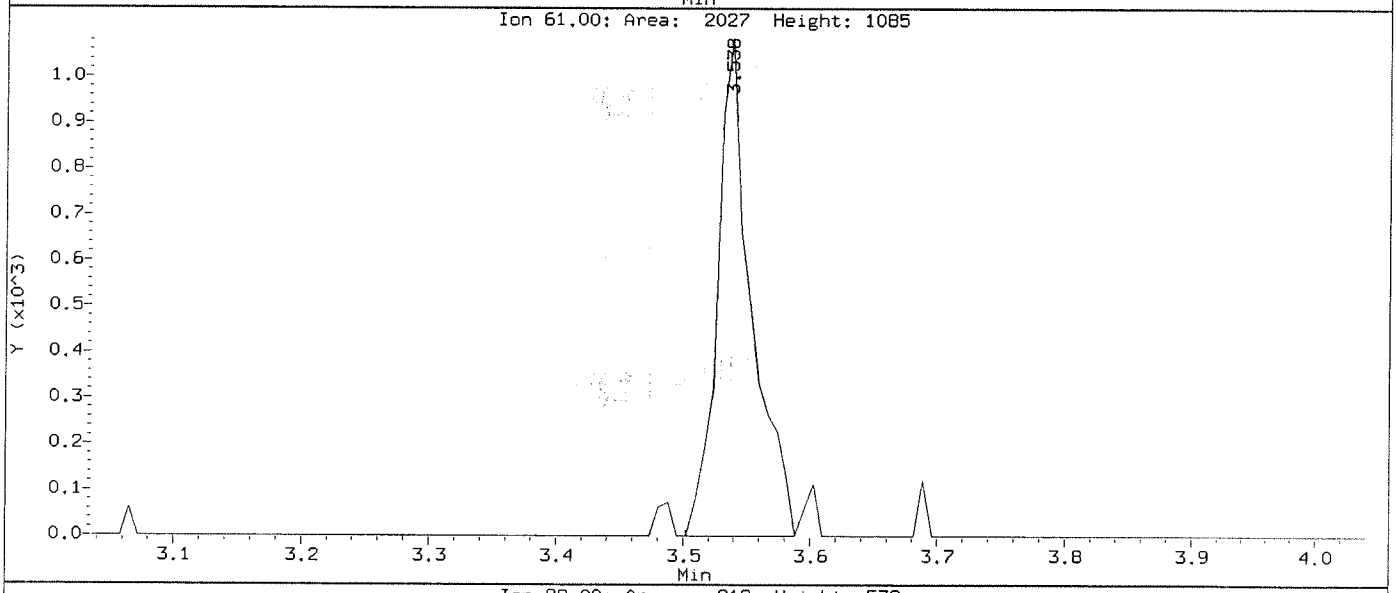
Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

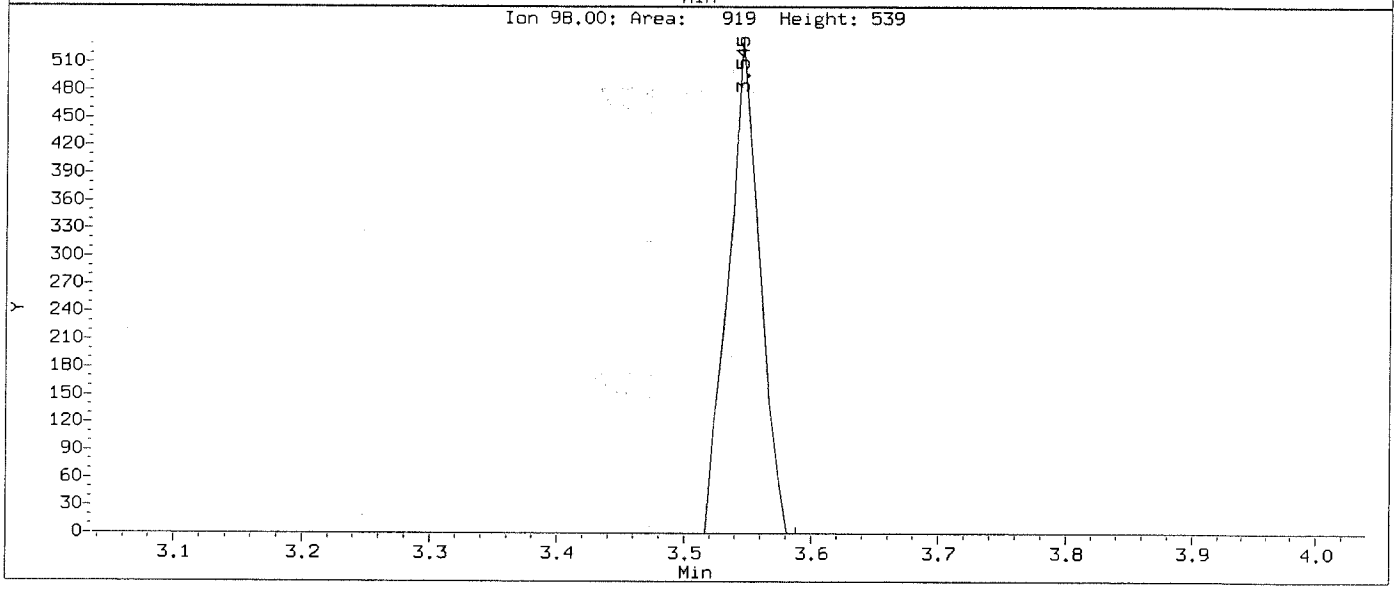


Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2







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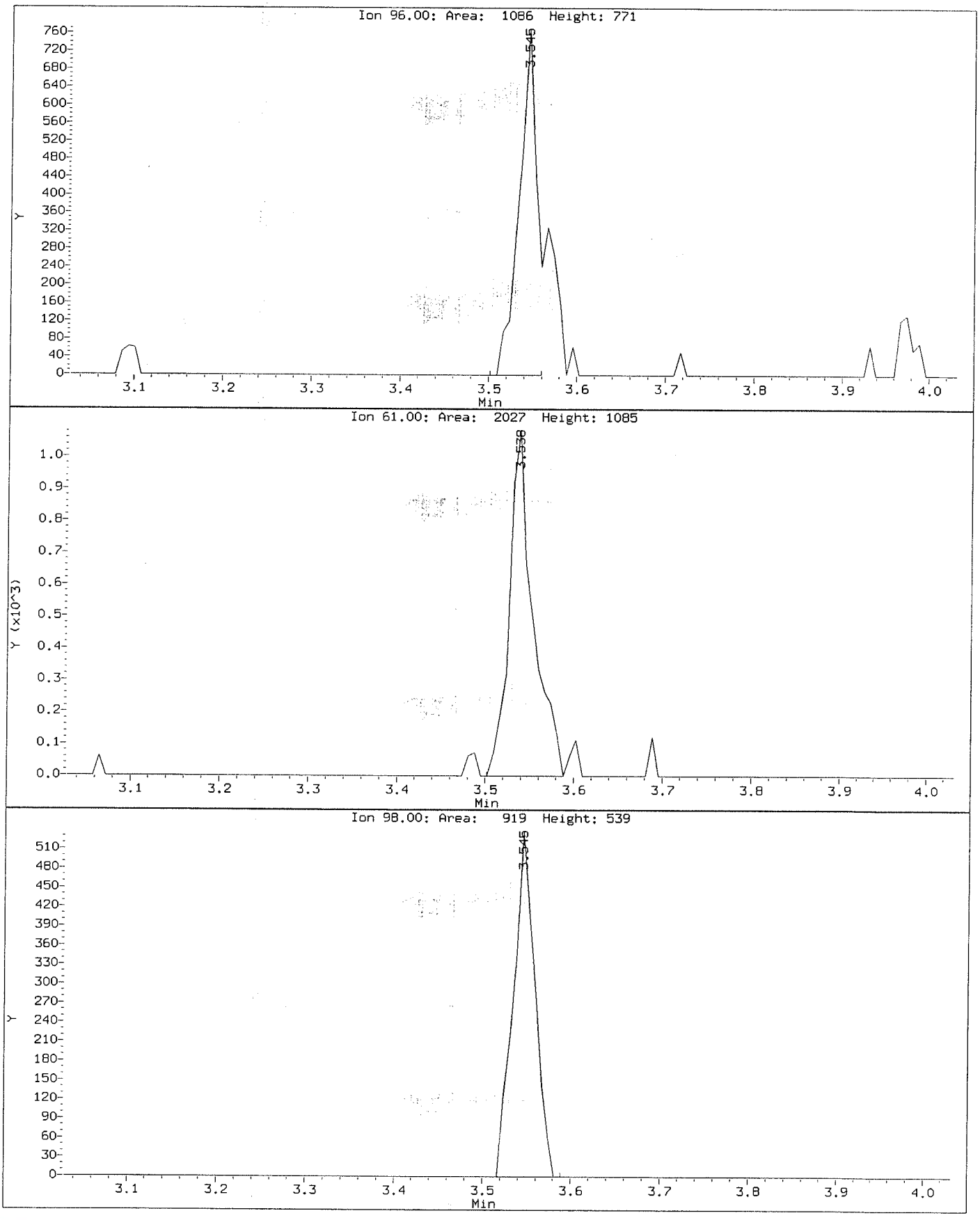
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2



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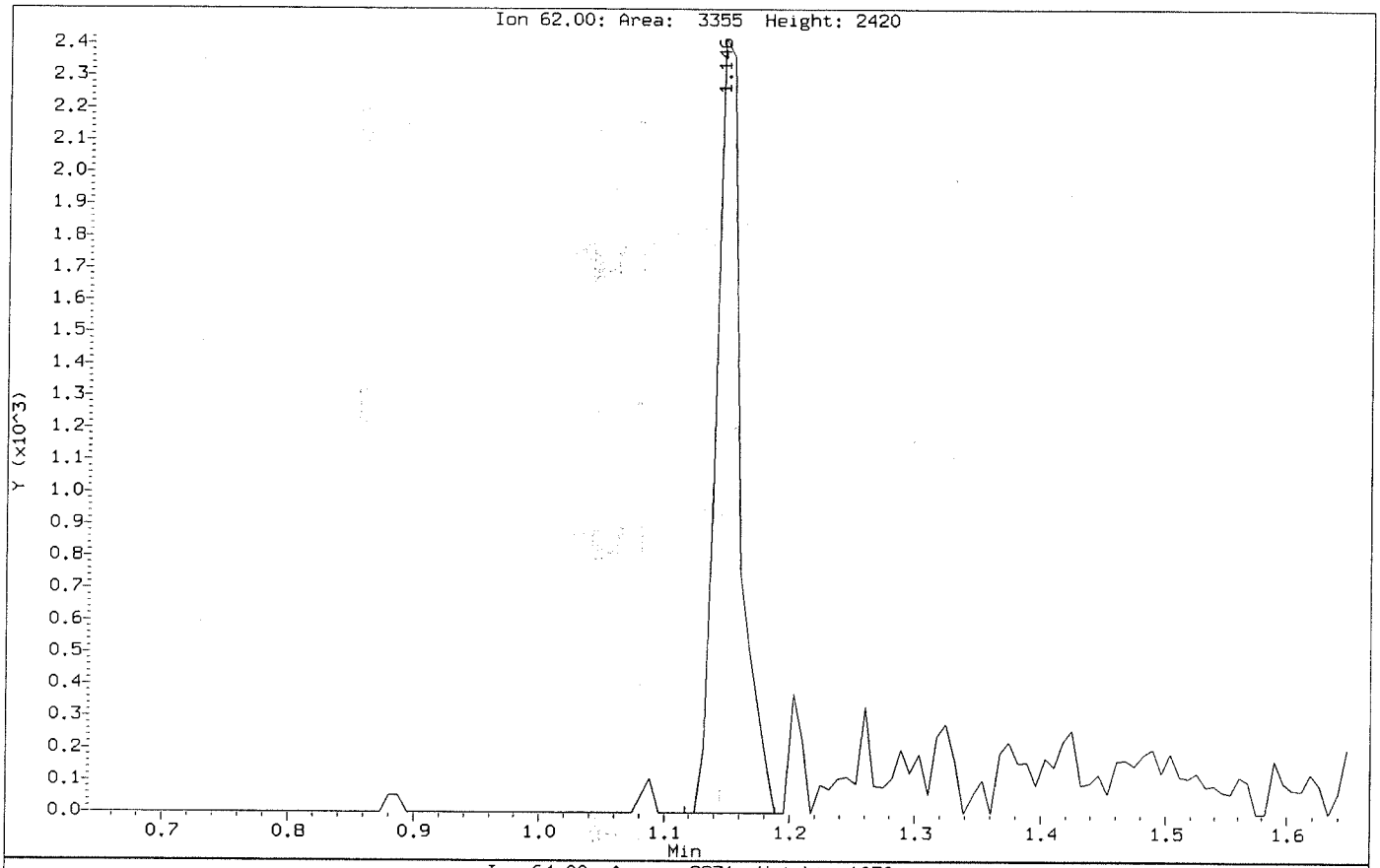
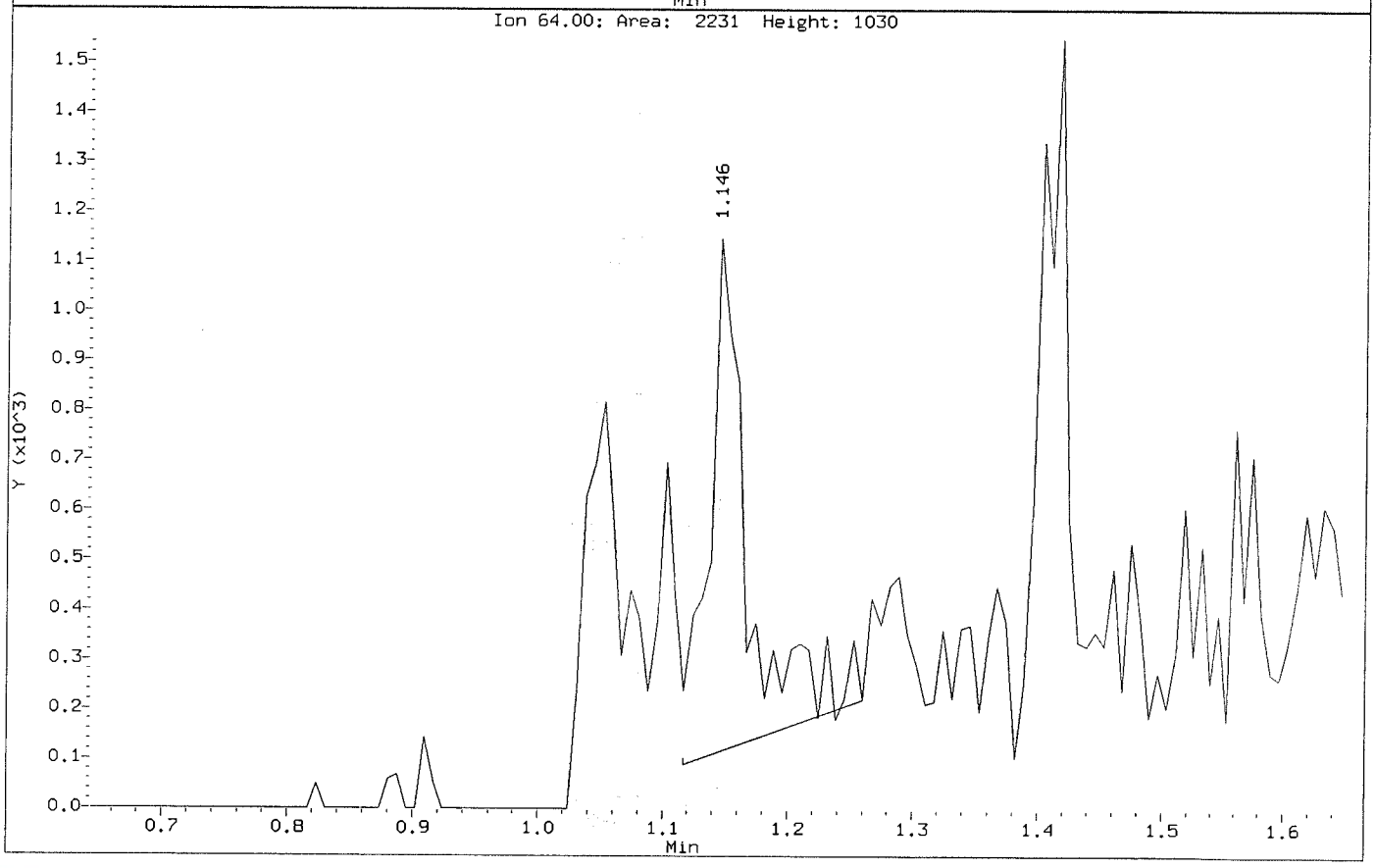
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

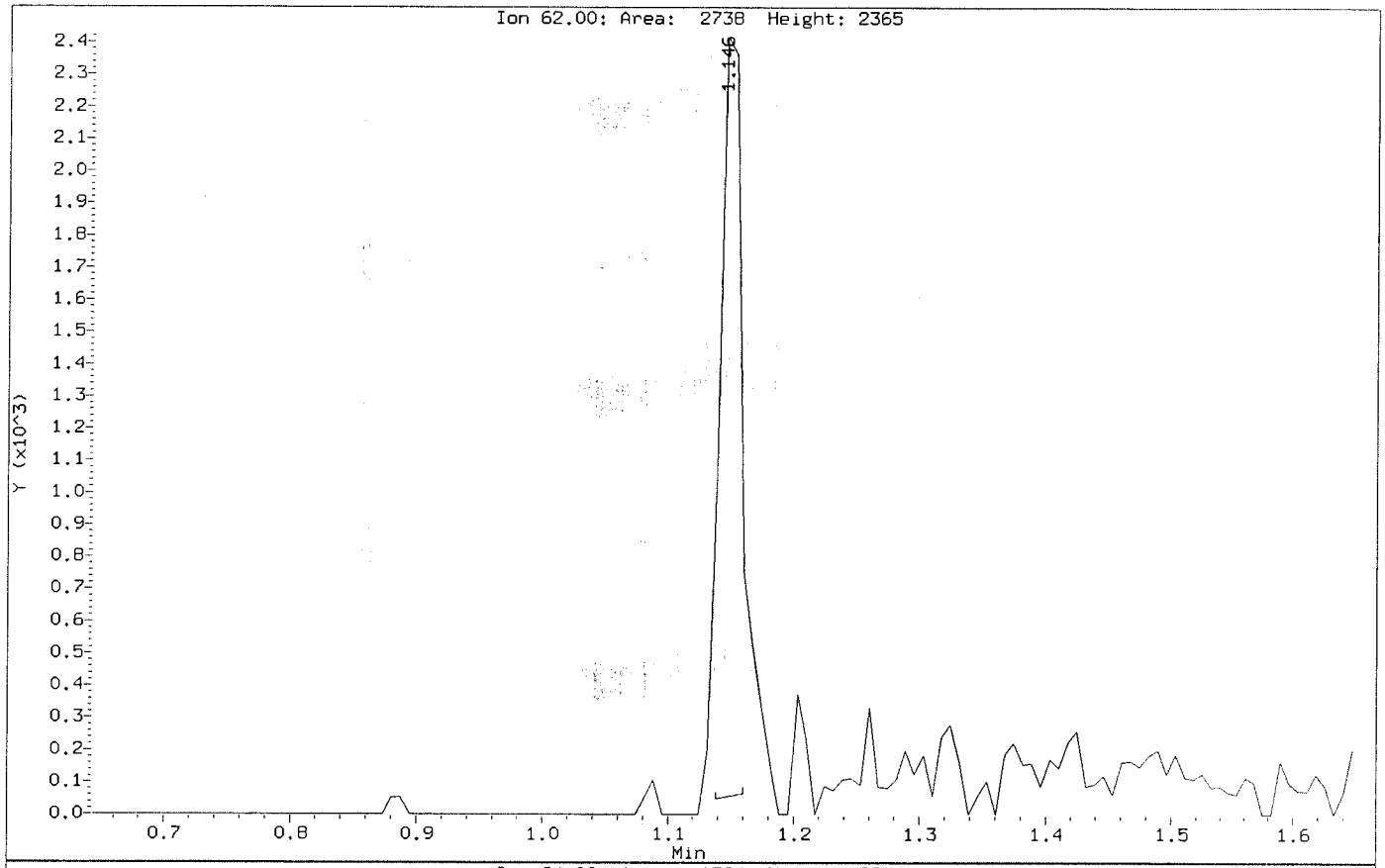
Compound: Vinyl Chloride
CAS Number: 75-01-4

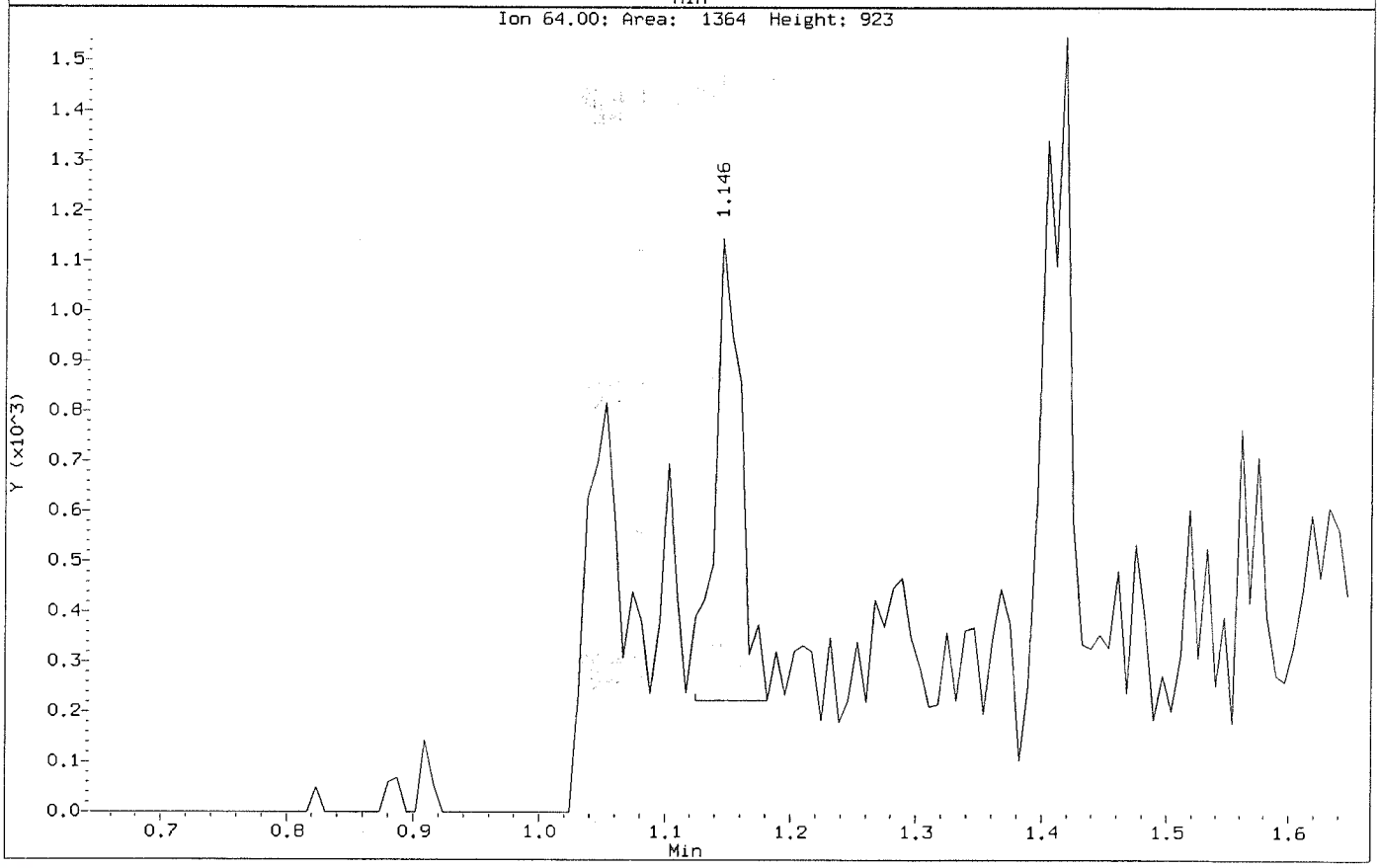




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D Page 1
Report Date: 30-Nov-2020 13:13

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Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 25-OCT-2020 17:45
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 17:24 Cal File: X102503.D
Als bottle: 7 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

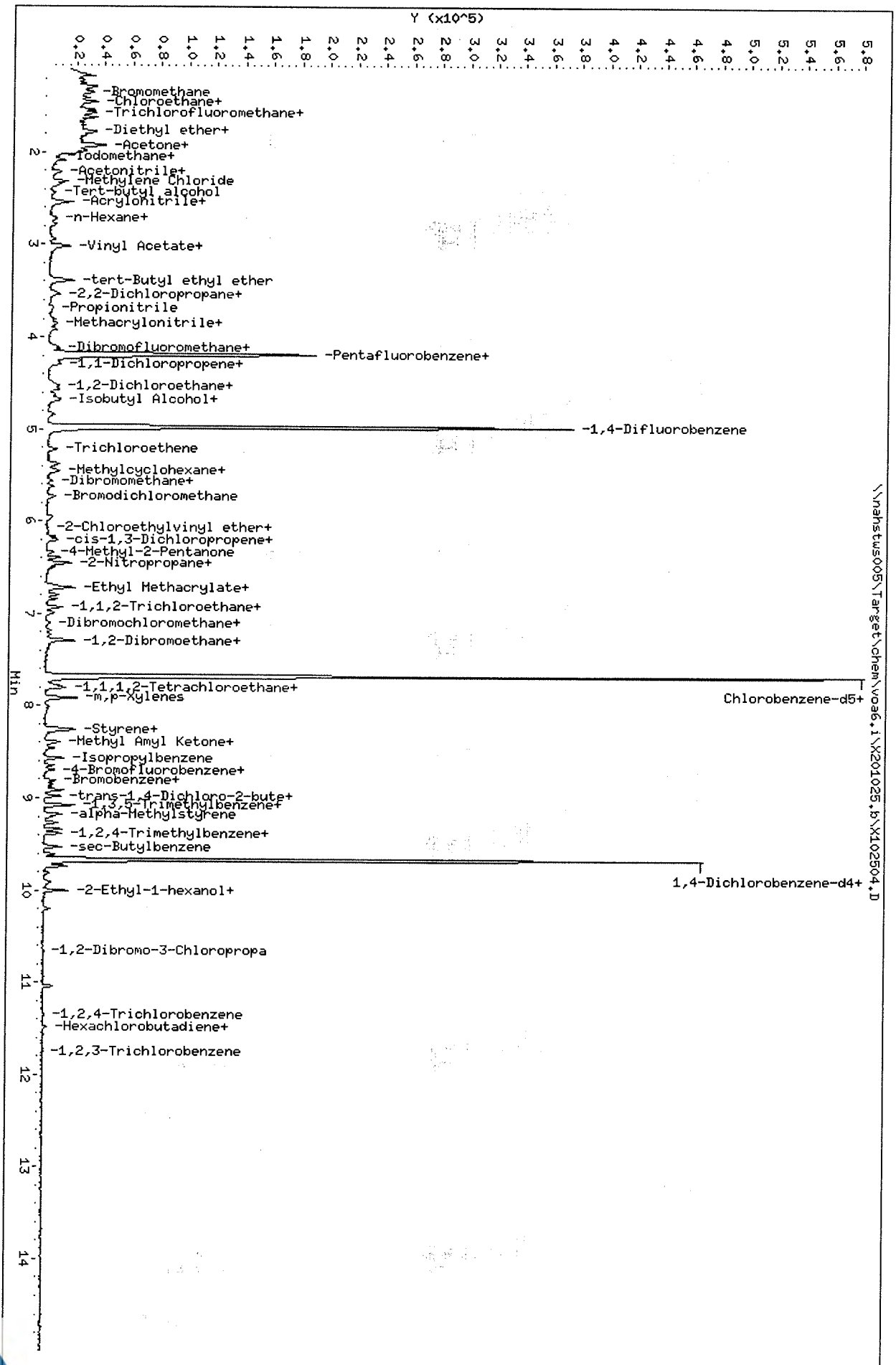
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	133725	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	265523	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	237249	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	89977	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.490	4.490	(1.072)	2362	1.00000	1.03(Ta)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	2133	1.00000	2.89(a)
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	1747	1.00000	0.94(a)
$ 48 Toluene-d8	98	6.395	6.395	(0.834)	5855	1.00000	2.56(Ta)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.894)	1602	1.00000	1.03(a)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	3767	1.00000	1.15(a)
33 1,2-Dichloroethane	62	4.569	4.569	(0.919)	3014	1.00000	1.05(a)
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	2283	1.00000	1.09(a)
17 Methylene Chloride	84	2.320	2.320	(0.554)	2321	1.00000	1.09(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	1801	1.00000	1.03(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	4301	1.00000	1.04(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



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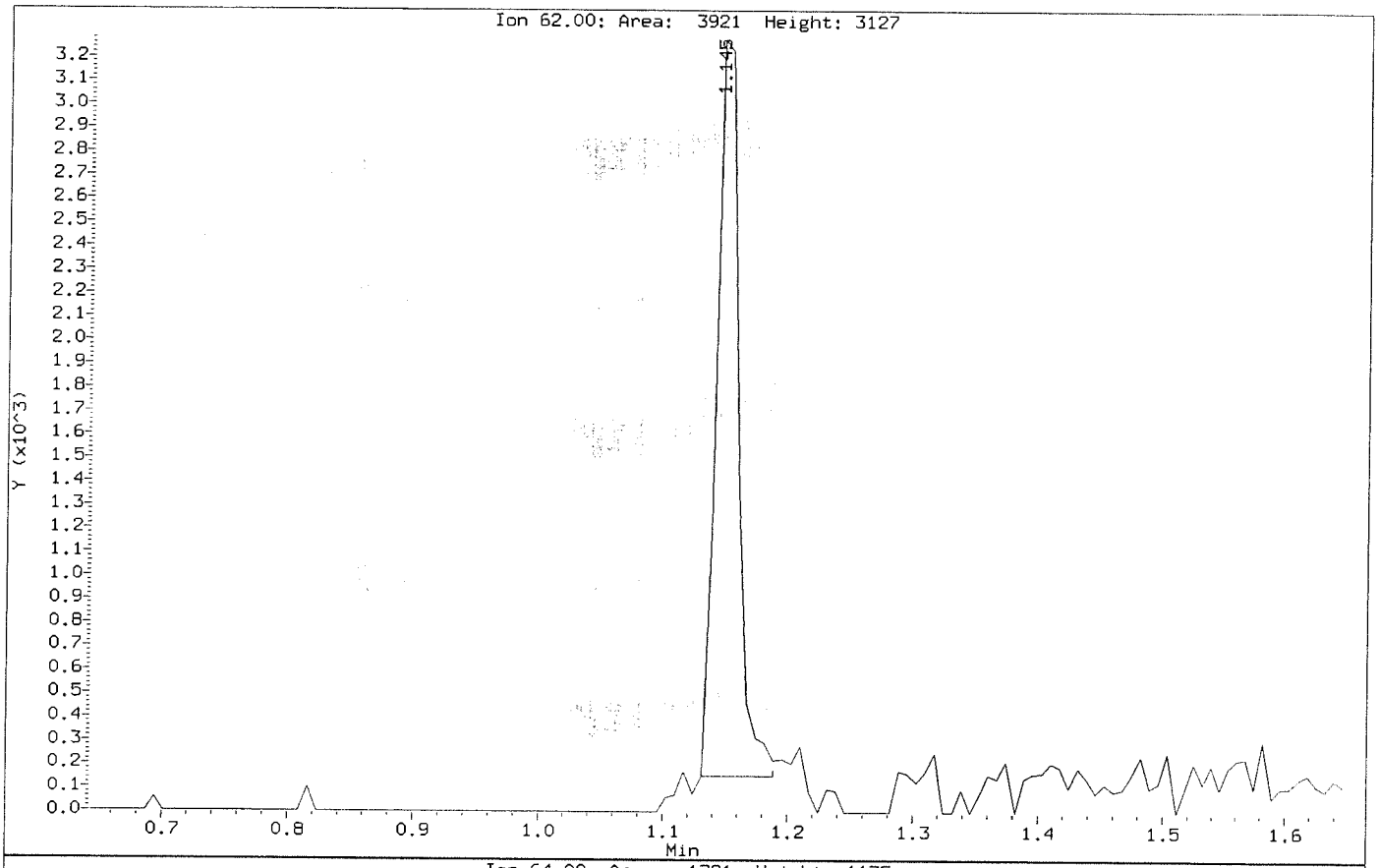
Date : 25-OCT-2020 17:45
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

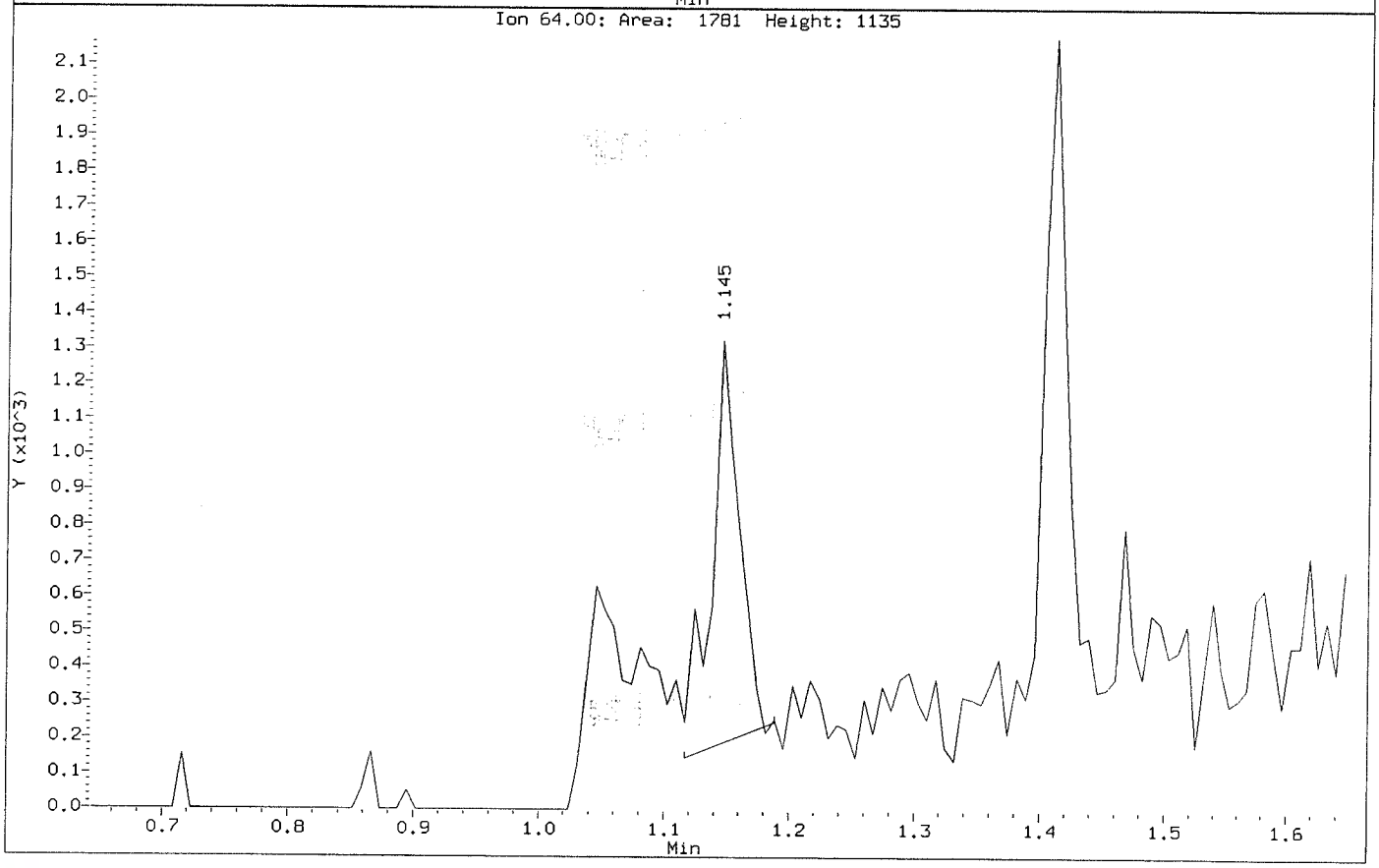
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102504.D
Injection Date: 25-OCT-2020 17:45
Instrument: voa6.i
Client Sample ID: VSTD001

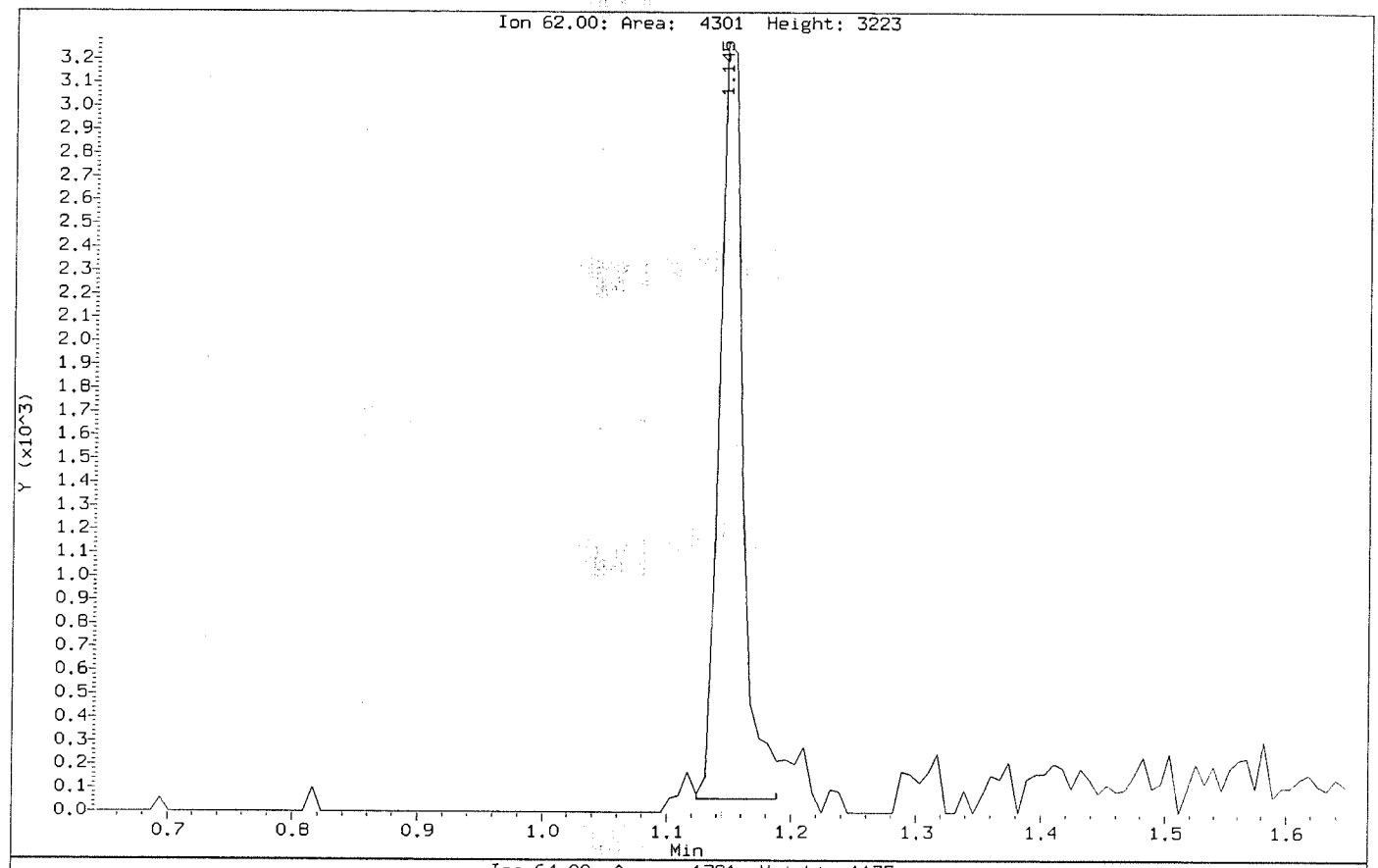
Compound: Vinyl Chloride
CAS Number: 75-01-4

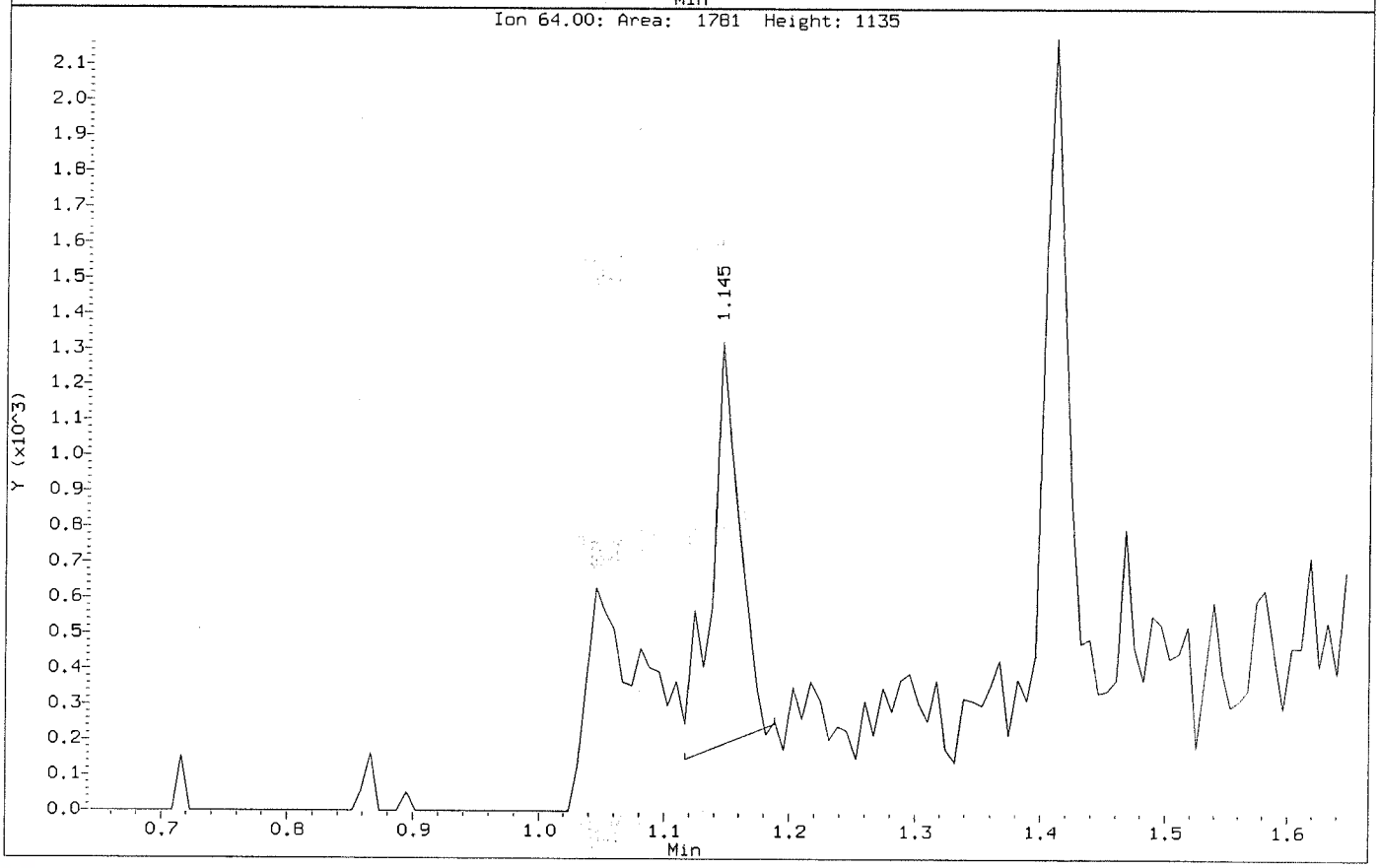




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D
Injection Date: 25-OCT-2020 17:45
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Vinyl Chloride
CAS Number: 75-01-4





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Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102505.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 25-OCT-2020 18:06
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 17:45 Cal File: X102504.D
Als bottle: 8 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

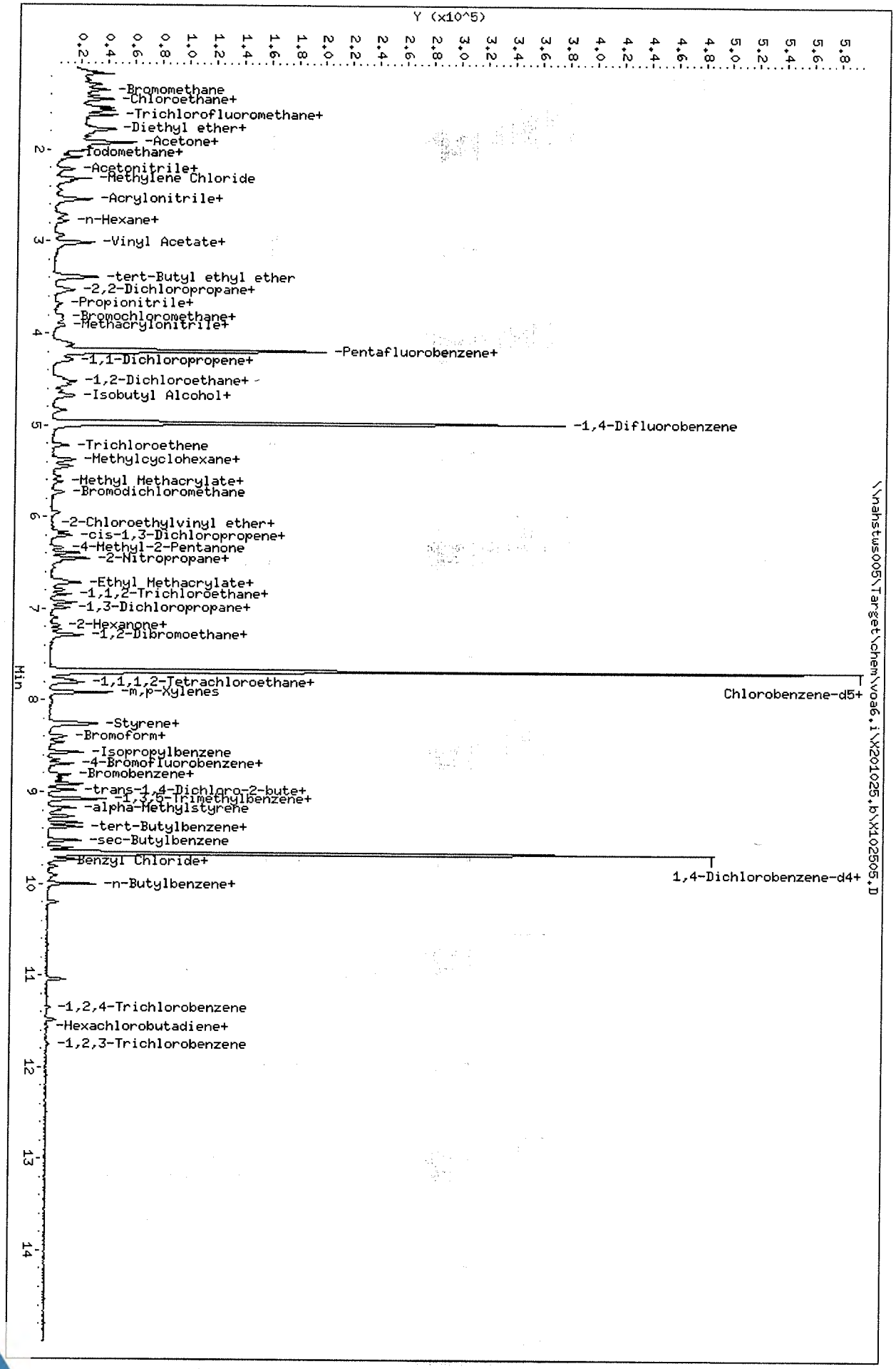
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	138059	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	268911	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	238375	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	92380	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	4999	2.00000	2.09(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4602	2.00000	3.93(a)
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	3406	2.00000	1.79(a)
$ 48 Toluene-d8	98	6.395	6.395	(0.834)	11754	2.00000	3.40(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	3021	2.00000	1.94(a)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	6937	2.00000	2.06(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5387	2.00000	1.85(a)
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	4027	2.00000	1.86(a)
17 Methylene Chloride	84	2.313	2.313	(0.552)	4313	2.00000	1.97(a)
38 Trichloroethene	130	5.221	5.221	(1.050)	3205	2.00000	1.81(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	8618	2.00000	2.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102505.D
Date : 25-OCT-2020 18:06
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D Page 1
Report Date: 30-Nov-2020 13:14

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 25-OCT-2020 18:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:06 Cal File: X102505.D
Als bottle: 9 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

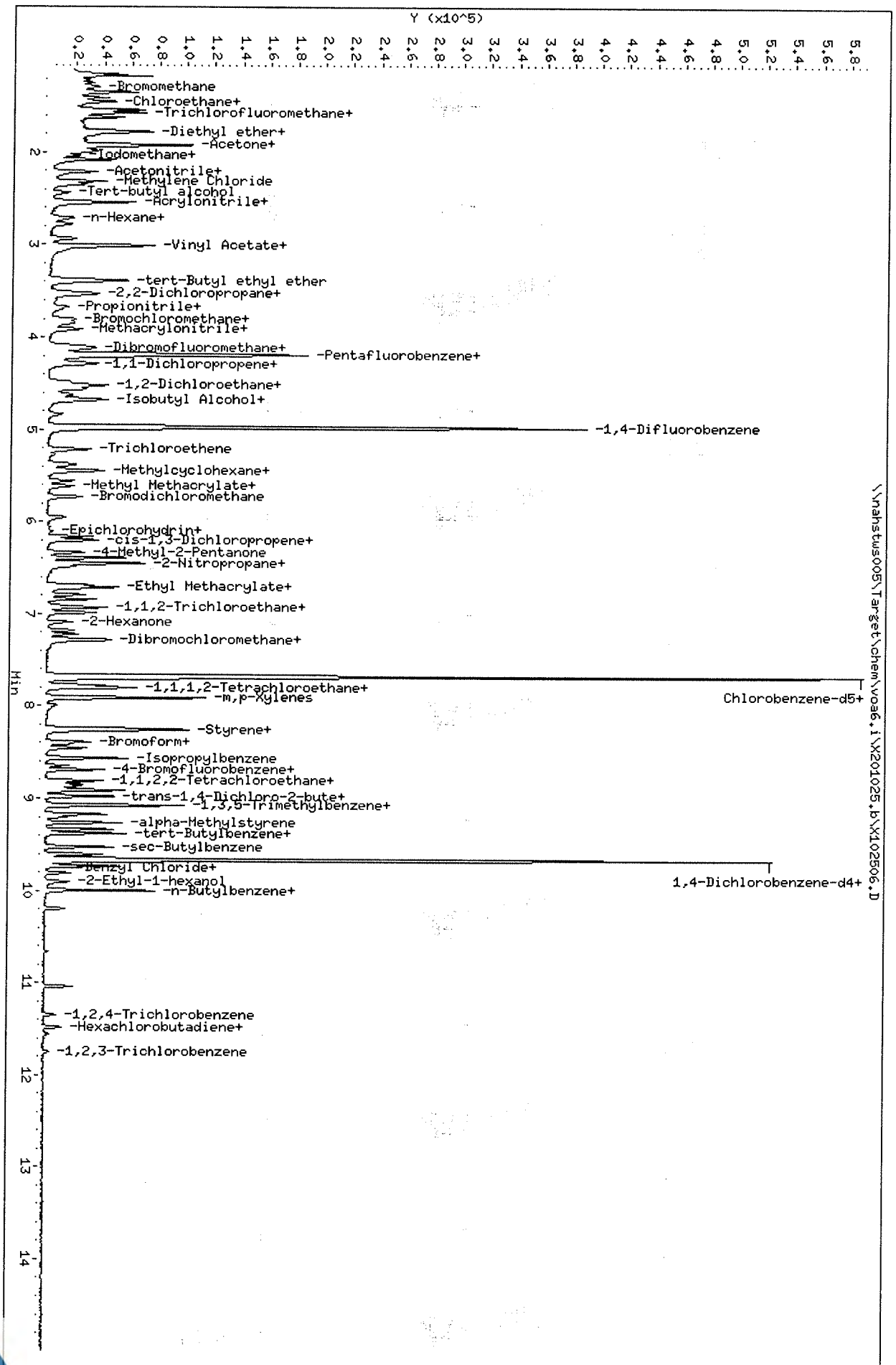
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	132183	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	262424	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	236481	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	93887	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	11402	5.00000	4.95(aM)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	10188	5.00000	6.31
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	8894	5.00000	4.88(a)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	31270	5.00000	6.24
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	8403	5.00000	5.46
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	15811	5.00000	4.91(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	14249	5.00000	5.02
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	10113	5.00000	4.88(a)
17 Methylene Chloride	84	2.313	2.313	(0.552)	10150	5.00000	4.85(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	7833	5.00000	4.53(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	17953	5.00000	4.41(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



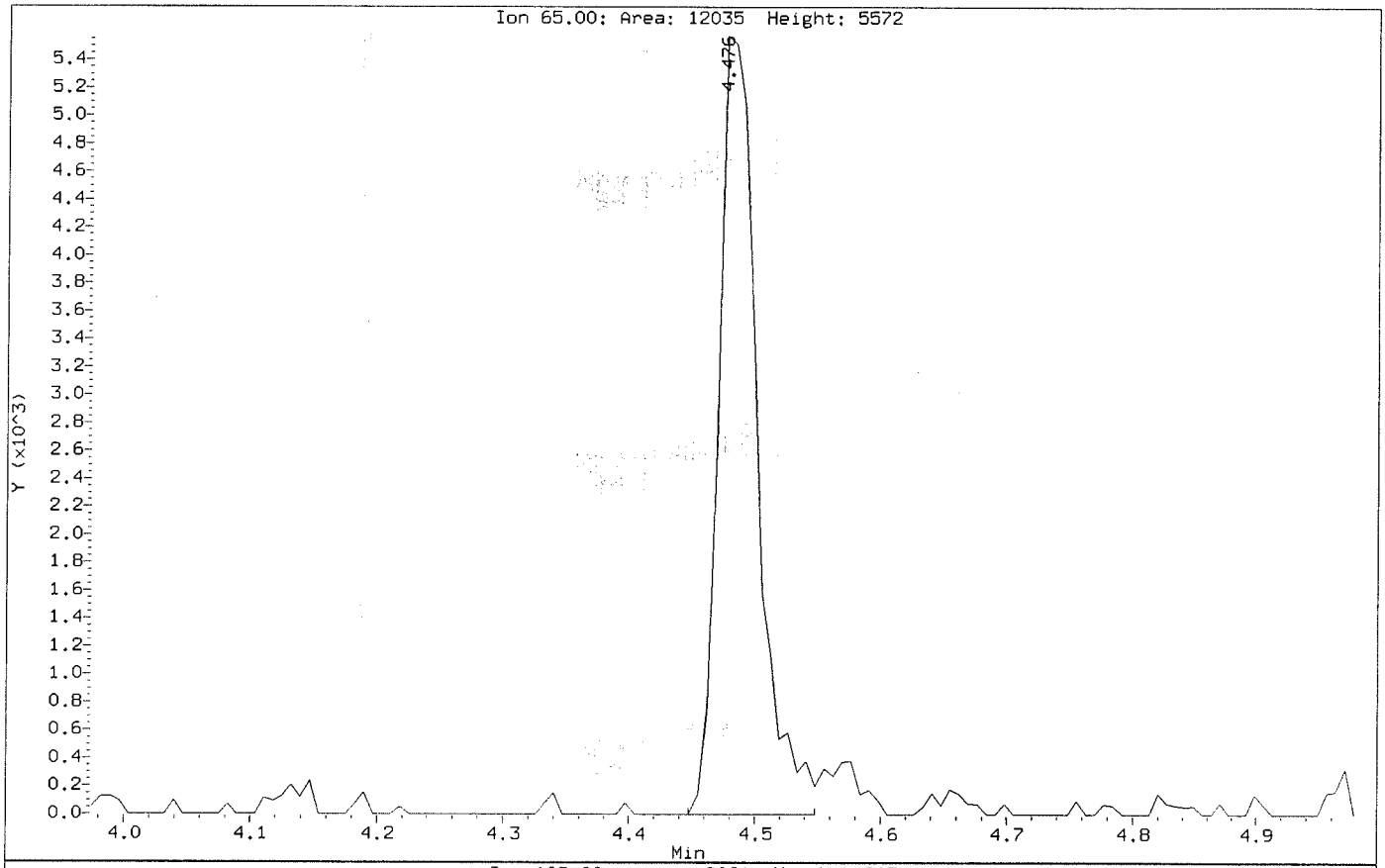
Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Date : 25-OCT-2020 18:27
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

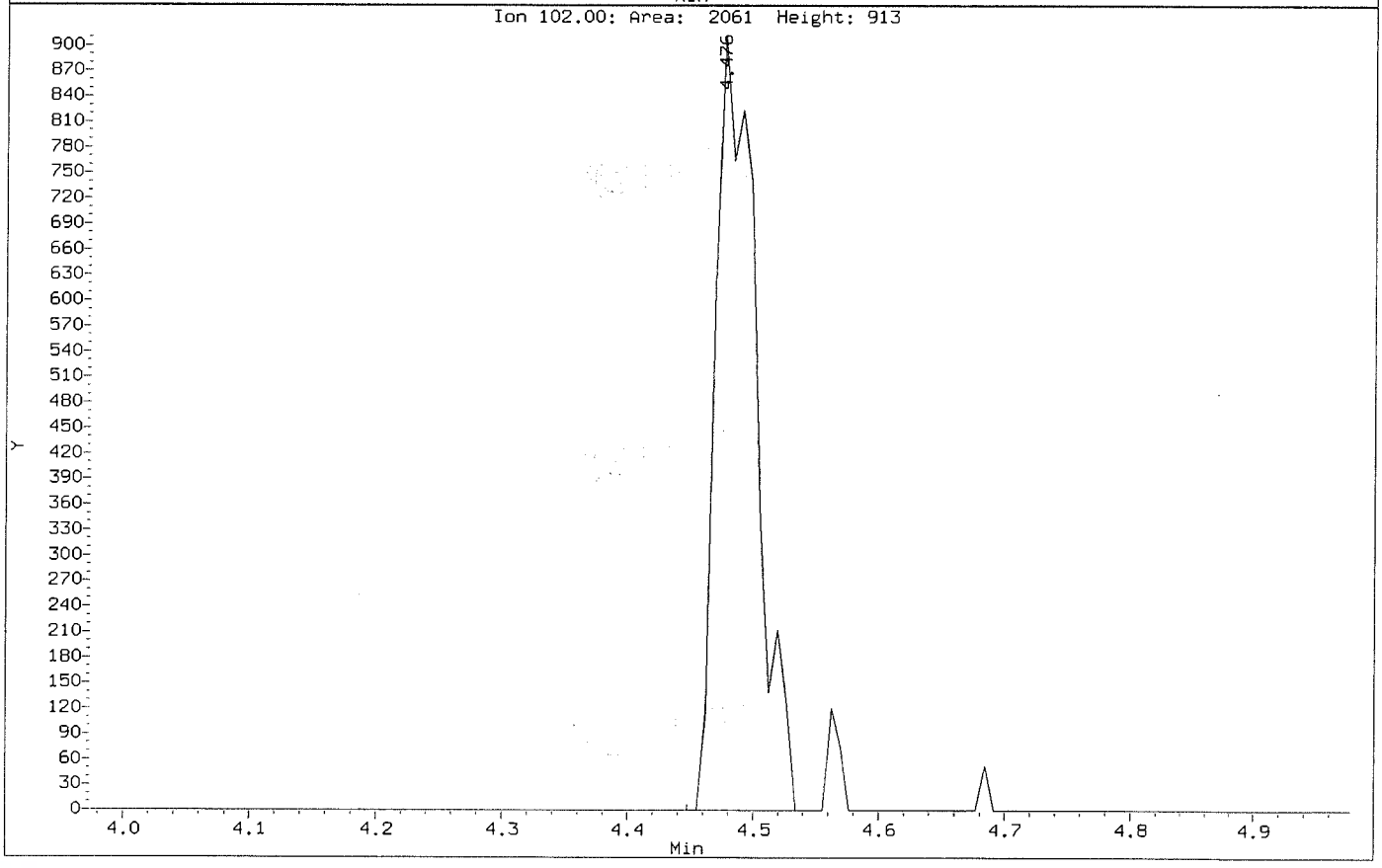
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102506.D
Injection Date: 25-OCT-2020 18:27
Instrument: voa6.i
Client Sample ID: VSTD005

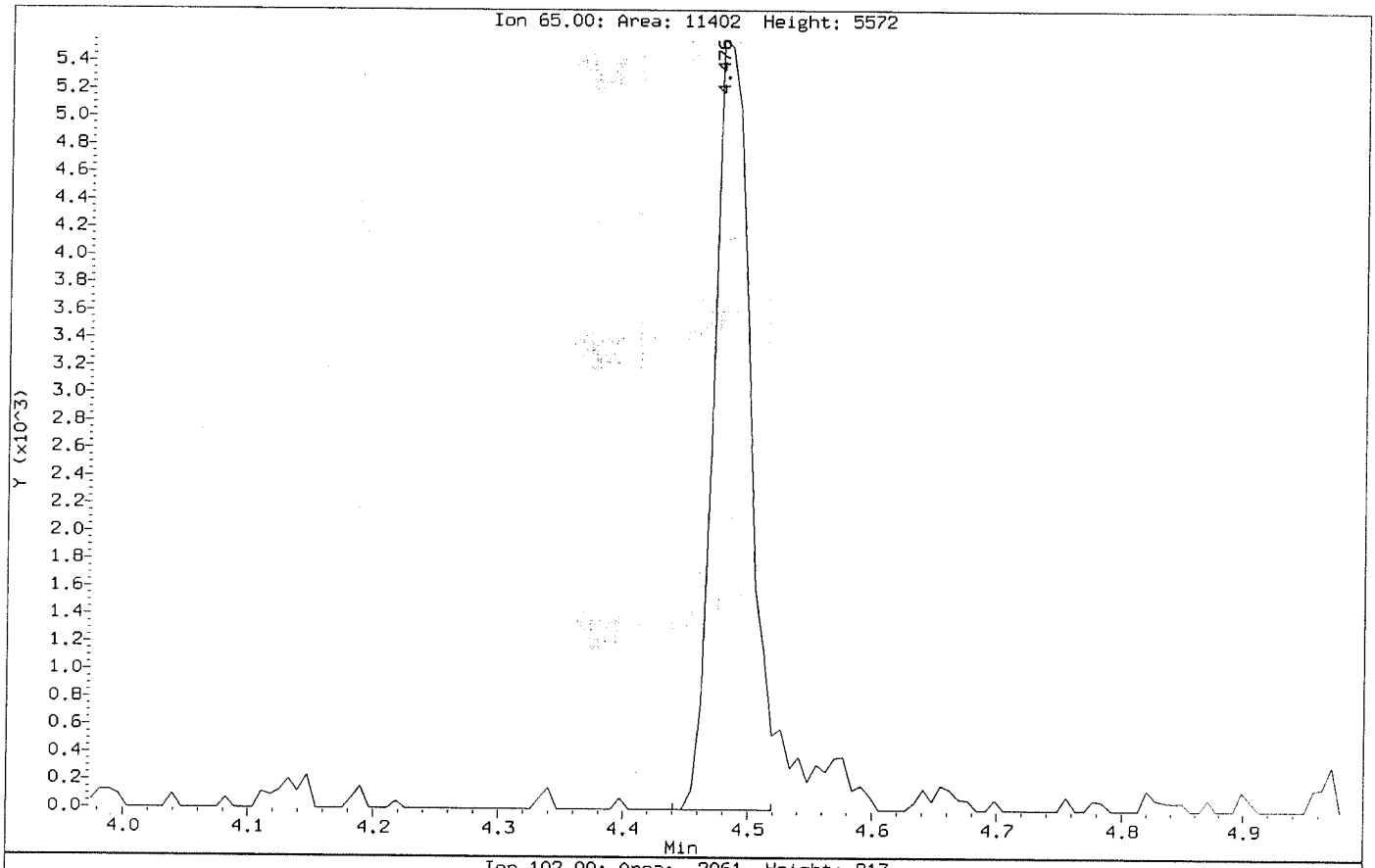
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

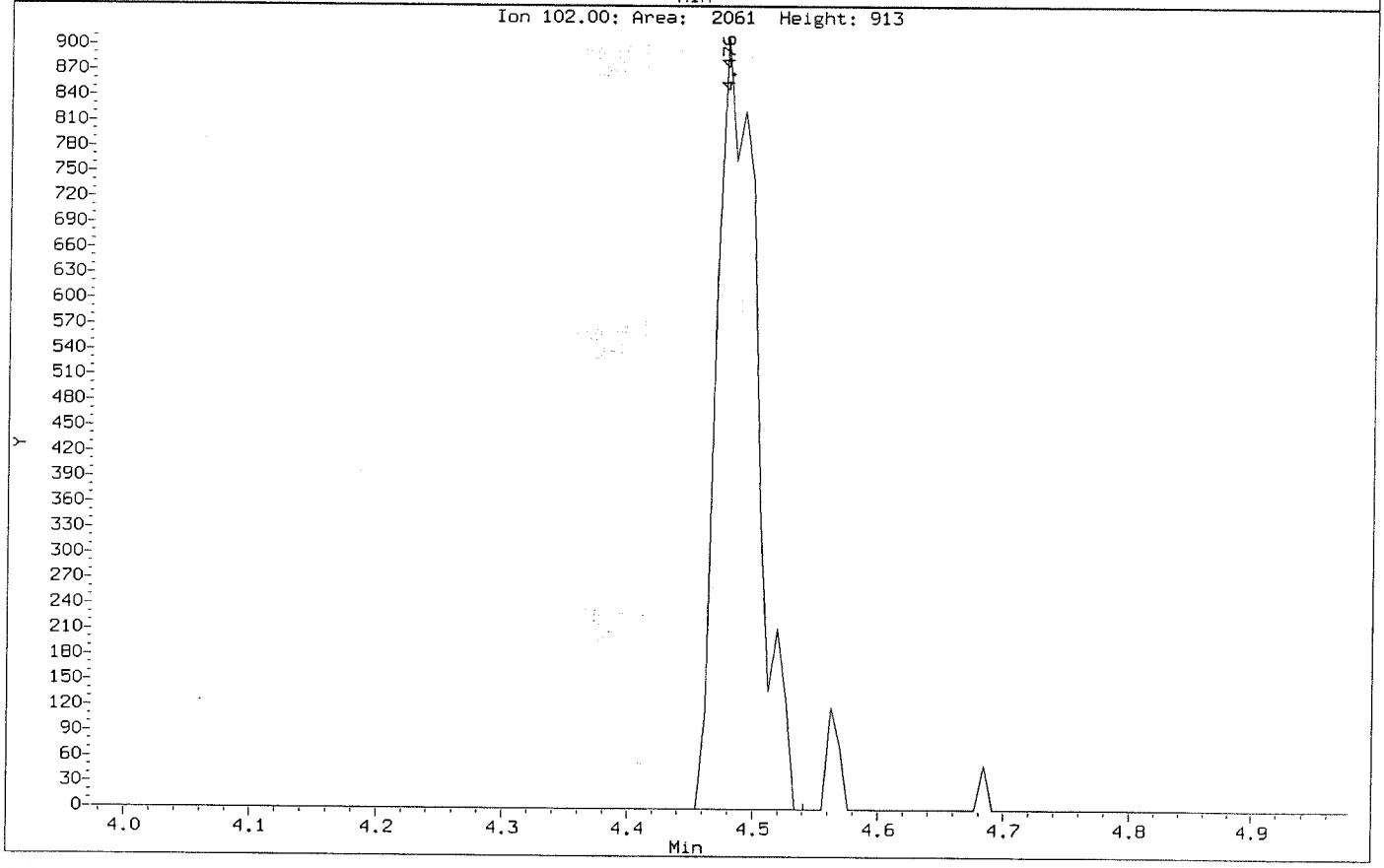




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Injection Date: 25-OCT-2020 18:27
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





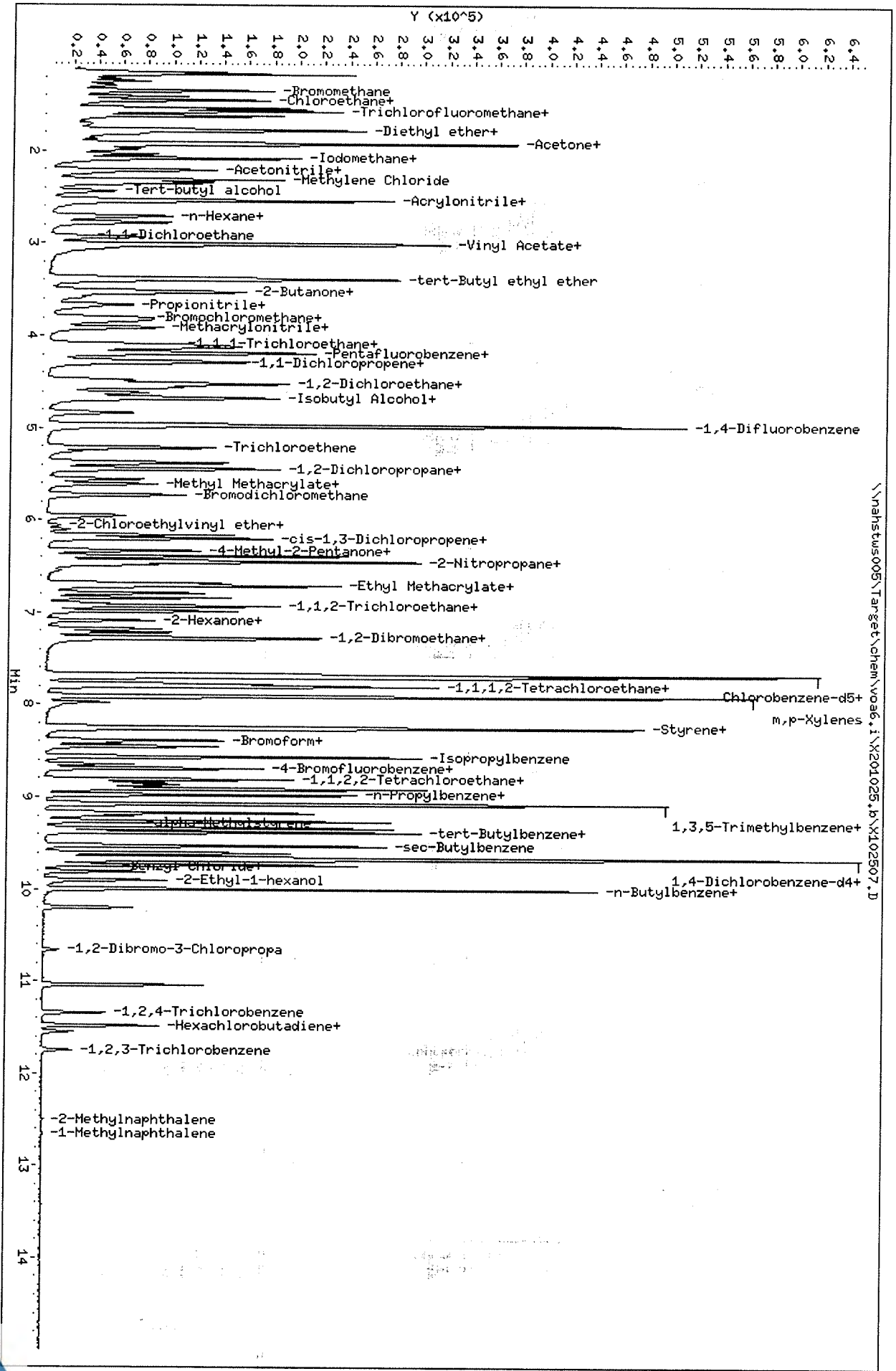
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102507.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 25-OCT-2020 18:48
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:27 Cal File: X102506.D
Als bottle: 10 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	136849	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	270104	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	237688	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	95866	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	46344	20.0000	19.36
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	42426	20.0000	19.90
$	30 Dibromofluoromethane	113	4.110	4.110	(0.981)	36260	20.0000	19.24
$	48 Toluene-d8	98	6.388	6.388	(0.833)	131486	20.0000	20.66
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	30161	20.0000	19.50
	11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	64169	20.0000	19.25
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	58734	20.0000	20.13
	27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	41515	20.0000	19.38
	17 Methylene Chloride	84	2.313	2.313	(0.552)	39812	20.0000	18.41
	38 Trichloroethene	130	5.214	5.214	(1.049)	37487	20.0000	21.10
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	83926	20.0000	19.94



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102507.D
Date : 25-OCT-2020 18:48
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D Page 1
Report Date: 30-Nov-2020 13:14

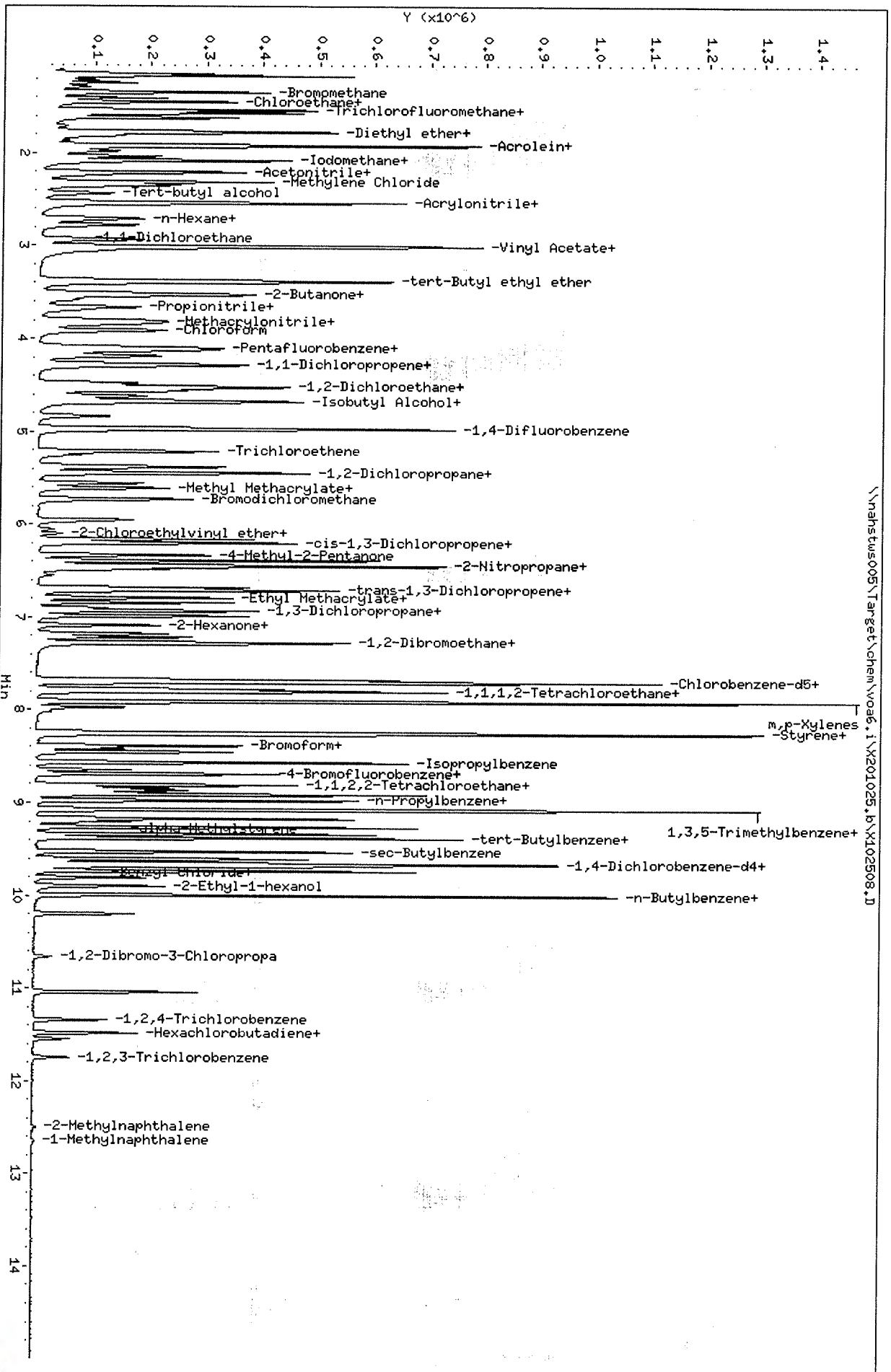
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 25-OCT-2020 19:09
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:48 Cal File: X102507.D
Als bottle: 11 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	144254	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274905	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	251583	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	110676	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	123233	50.0000	48.79
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	108164	50.0000	45.14
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	96973	50.0000	48.83
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	324408	50.0000	45.86
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	75198	50.0000	45.95
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	147185	50.0000	41.89
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	146952	50.0000	49.49
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	103361	50.0000	45.78
17 Methylene Chloride	84	2.313	2.313	(0.552)	96633	50.0000	42.39
38 Trichloroethene	130	5.214	5.214	(1.049)	86967	50.0000	48.09
5 Vinyl Chloride	62	1.145	1.145	(0.273)	189229	50.0000	42.66



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D
Date : 25-OCT-2020 19:09
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

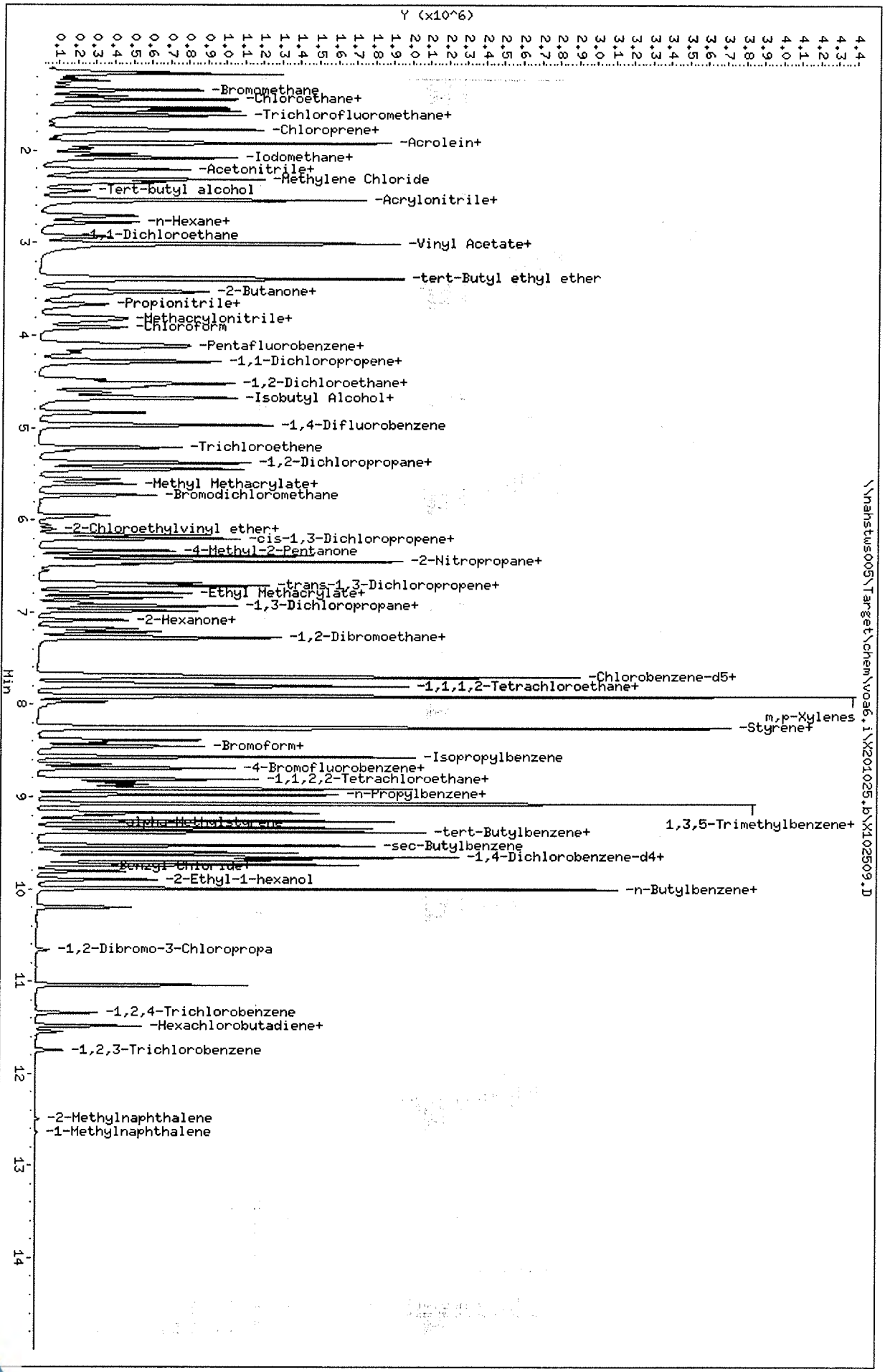
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102509.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 25-OCT-2020 19:29
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 12 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	139368	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287668	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	269087	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	124024	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	245566	100.000	100.61
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	251093	100.000	95.64
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	210627	100.000	109.78
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	742483	100.000	96.18
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	165395	100.000	94.49
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	326526	100.000	96.19
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	311960	100.000	100.40
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	227115	100.000	104.13
17 Methylene Chloride	84	2.313	2.313	(0.552)	212196	100.000	96.35
38 Trichloroethene	130	5.214	5.214	(1.049)	196700	100.000	103.96
5 Vinyl Chloride	62	1.145	1.145	(0.273)	428800	100.000	100.08



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102509.D
Date : 25-OCT-2020 19:29
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D Page 1
Report Date: 30-Nov-2020 13:14

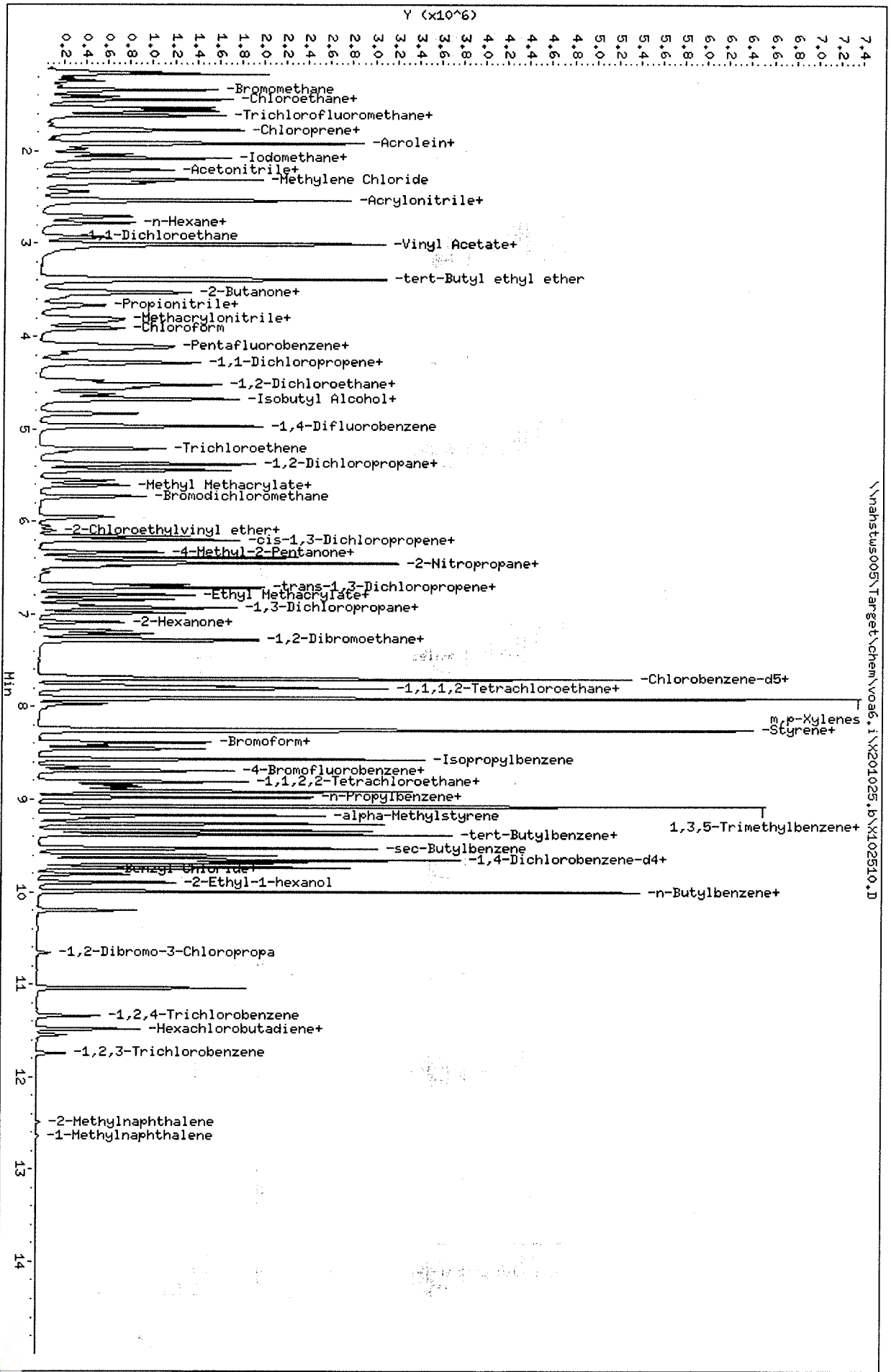
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 25-OCT-2020 19:50
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:29 Cal File: X102509.D
Als bottle: 13 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	145183	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	325175	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	284217	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	137394	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	392180	150.000	154.23
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	410237	150.000	146.85
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	314986	150.000	157.60
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1192701	150.000	145.39
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	264336	150.000	142.97
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	498515	150.000	140.98
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	472013	150.000	134.39
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	342494	150.000	150.75
17 Methylene Chloride	84	2.313	2.313	(0.552)	335712	150.000	146.33
38 Trichloroethene	130	5.214	5.214	(1.049)	309579	150.000	144.74
5 Vinyl Chloride	62	1.145	1.145	(0.273)	655246	150.000	146.80



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D
Date : 25-OCT-2020 19:50
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102511.D Page 1
Report Date: 30-Nov-2020 13:14

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102511.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 25-OCT-2020 20:11
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:50 Cal File: X102510.D
Als bottle: 14 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

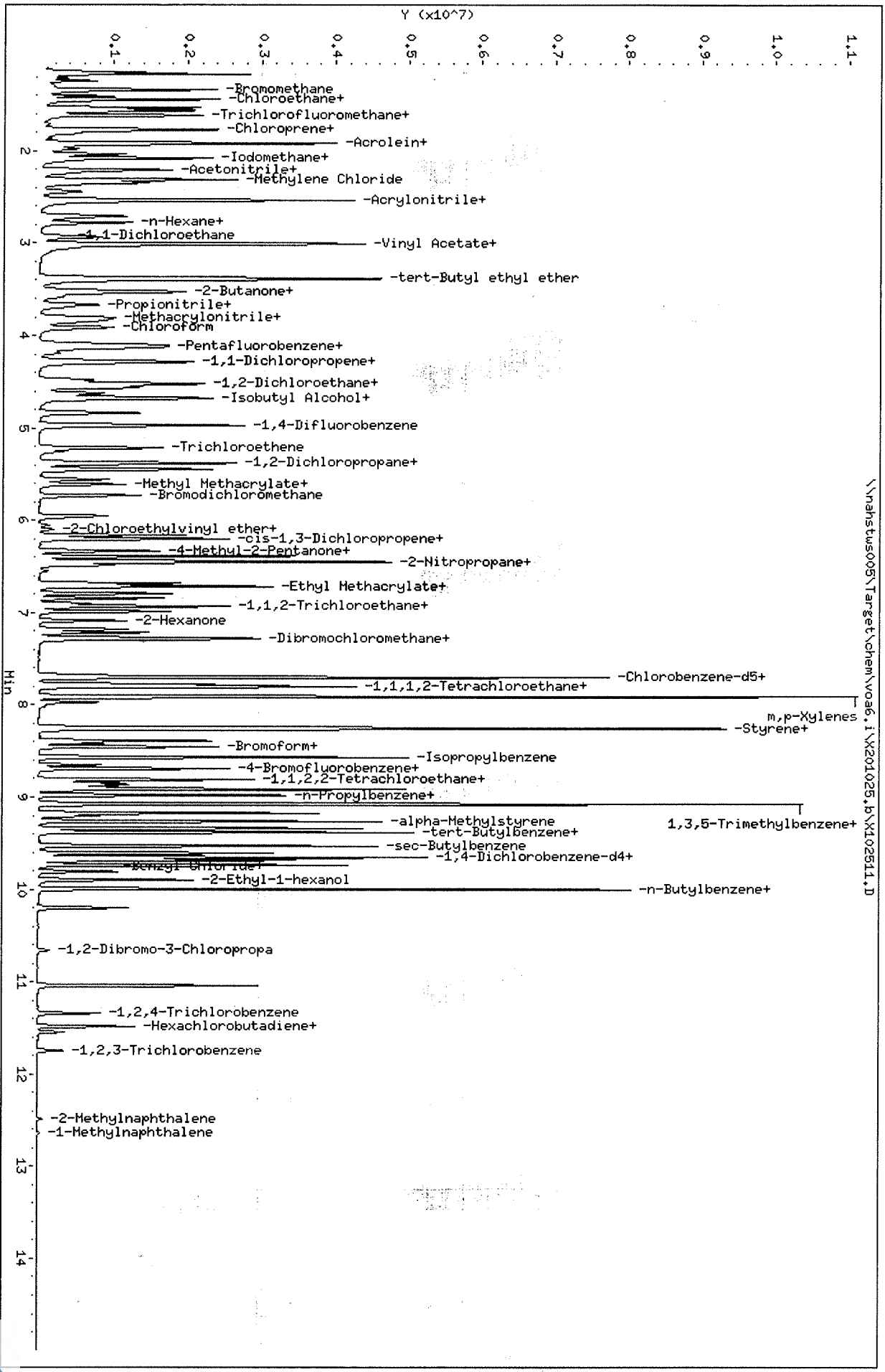
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150836	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	333359	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.678	(1.000)	292571	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	146057	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	519723	200.000	196.72
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	592427	200.000	205.22(A)
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	455615	200.000	219.42(A)
$ 48 Toluene-d8	98	6.388	6.388	(0.832)	1743873	200.000	205.78(A)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	365695	200.000	192.15
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	683631	200.000	186.08
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	677170	200.000	188.08
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	499766	200.000	211.73(A)
17 Methylene Chloride	84	2.313	2.313	(0.552)	462731	200.000	194.13
38 Trichloroethene	130	5.214	5.214	(1.049)	427628	200.000	195.03
5 Vinyl Chloride	62	1.145	1.145	(0.273)	862323	200.000	185.96

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102511.D
Date : 25-OCT-2020 20:11
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102514.D Page 1
Report Date: 30-Nov-2020 13:14

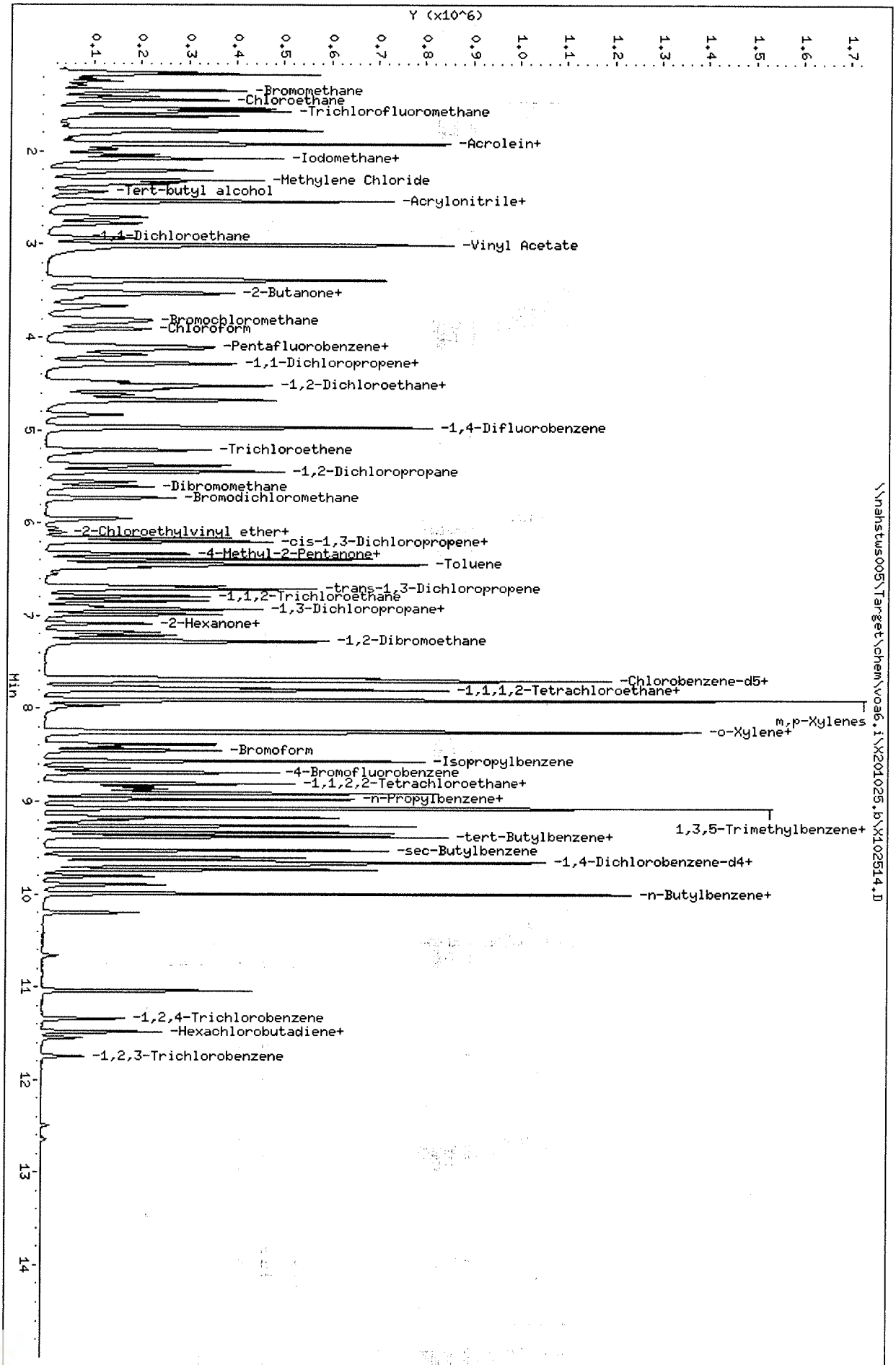
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102514.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 25-OCT-2020 21:14
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;2;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 20:11 Cal File: X102511.D
Als bottle: 17 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	140573	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287781	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.678	(1.000)	266338	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	112403	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	124058	50.4098	50.40
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	118719	46.7309	46.73
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	98567	50.9348	50.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	349750	46.6804	46.68
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	76481	44.1456	44.14
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	158166	46.1969	46.19
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	143965	46.3187	46.31
27 cis-1,2-Dichloroethene	96	3.537	3.530	(0.844)	102698	46.6863	46.68
17 Methylene Chloride	84	2.312	2.313	(0.552)	97503	43.8933	43.89
38 Trichloroethene	130	5.214	5.214	(1.049)	90499	47.8118	47.81
5 Vinyl Chloride	62	1.145	1.145	(0.273)	199528	46.1698	46.16



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102514.D
Date : 25-OCT-2020 21:14
Client ID: ICV
Sample Info: VSTD050;VSTD050;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 42427 **Analyst:** Presenta Cabascango

Date: 10-28-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	10-28-2020 11:44 am	1.00	50 mL	50 mL	X102801.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	10-28-2020 12:05 pm	1.00	50 mL	50 mL	X102802a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	CCV	CCV	10-28-2020 12:26 pm	1.00	50 mL	50 mL	X102803.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	CCB	SAMP	10-28-2020 12:47 pm	1.00	50 mL	50 mL	X102804.D	Liquid	Y	NA
5	VLCSW-201028	LCS	10-28-2020 01:08 pm	1.00	50 mL	50 mL	X102805.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLK	SAMP	10-28-2020 01:29 pm	1.00	50 mL	50 mL	X102806.D	Liquid	Y	NA
7	VBLKW-201028	MBLK	10-28-2020 01:50 pm	1.00	50 mL	50 mL	X102807.D	Liquid	Y	NA
8	HS20101079-08	SAMP	10-28-2020 02:11 pm	1.00	50 mL	50 mL	X102808.D	Liquid	Y	NA
9	HS20101079-05	SAMP	10-28-2020 02:32 pm	1.00	50 mL	50 mL	X102809.D	Liquid	Y	NA
10	HS20101079-02	SAMP	10-28-2020 02:53 pm	1.00	50 mL	50 mL	X102810.D	Liquid	Y	NA
11	HS20101079-03	SAMP	10-28-2020 03:14 pm	250.0(	200 µL	50 mL	X102811.D	Liquid	Y	NA
12	HS20101079-03	SAMP	10-28-2020 03:35 pm	25.00	2 mL	50 mL	X102812.D	Liquid	Y	NA
13	HS20101079-03MS	MS	10-28-2020 03:56 pm	250.0(	200 µL	50 mL	X102813.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
14	HS20101079-03MSD	MSD	10-28-2020 04:18 pm	250.0(	200 µL	50 mL	X102814.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
15	HS20100920-03	SAMP	10-28-2020 04:39 pm	20.00	2.5 mL	50 mL	X102815.D	Liquid	Y	NA
16	HS20101079-02	SAMP	10-28-2020 05:00 pm	5.00	10 mL	50 mL	X102816.D	Liquid	Y	NA
17	HS20101079-04	SAMP	10-28-2020 05:21 pm	5.00	10 mL	50 mL	X102817.D	Liquid	Y	NA
18	HS20101079-04	SAMP	10-28-2020 05:42 pm	50.00	1 mL	50 mL	X102818.D	Liquid	Y	NA
19	HS20101079-06	SAMP	10-28-2020 06:03 pm	10.00	5 mL	50 mL	X102819.D	Liquid	Y	NA
20	HS20101079-06	SAMP	10-28-2020 06:24 pm	100.0(	500 µL	50 mL	X102820.D	Liquid	Y	NA
21	HS20101079-07	SAMP	10-28-2020 06:45 pm	10.00	5 mL	50 mL	X102821.D	Liquid	Y	NA
22	HS20101079-07	SAMP	10-28-2020 07:06 pm	100.0(	500 µL	50 mL	X102822.D	Liquid	Y	NA
23	HS20101079-01	SAMP	10-28-2020 07:27 pm	25.00	2 mL	50 mL	X102823.D	Liquid	Y	NA
24	HS20101079-01	SAMP	10-28-2020 07:48 pm	250.0(	200 µL	50 mL	X102824.D	Liquid	Y	NA
25	CCV-END	CCV	10-28-2020 08:09 pm	1.00	50 mL	50 mL	X102825.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
26	HS20101255-03	SAMP	10-28-2020 08:30 pm	1.00	50 mL	50 mL	X102826.D	Liquid	Y	NA
27	HS20101255-04	SAMP	10-28-2020 08:51 pm	1.00	50 mL	50 mL	X102827.D	Liquid	Y	NA
28	HS20101255-01	SAMP	10-28-2020 09:12 pm	1.00	50 mL	50 mL	X102828.D	Liquid	Y	NA
29	HS20101255-02	SAMP	10-28-2020 09:33 pm	1.00	50 mL	50 mL	X102829.D	Liquid	Y	NA
30	HS20101277-01	SAMP	10-28-2020 09:54 pm	10.00	5 mL	50 mL	X102830.D	Liquid	Y	NA
31	BFB	TUNE	10-28-2020 10:15 pm	1.00	50 mL	50 mL	Y102801.D	Liquid	Y	NA
	Auto find/ purged									
32	CCV	CCV	10-28-2020 10:36 pm	1.00	50 mL	50 mL	Y102802a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
33	CCV	CCV	10-28-2020 10:57 pm	1.00	50 mL	50 mL	Y102803.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
34	CCB	SAMP	10-28-2020 11:18 pm	1.00	50 mL	50 mL	Y102804.D	Liquid	Y	NA
35	VLCSW-201028	LCS	10-28-2020 11:39 pm	1.00	50 mL	50 mL	Y102805.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
36	BLK	SAMP	10-29-2020 12:00 am	1.00	50 mL	50 mL	Y102806.D	Liquid	Y	NA
37	VBLKW-201028	MBLK	10-29-2020 12:21 am	1.00	50 mL	50 mL	Y102807.D	Liquid	Y	NA
38	HS20101111-02	SAMP	10-29-2020 12:42 am	1.00	50 mL	50 mL	Y102808.D	Liquid	Y	NA
39	HS20101112-07	SAMP	10-29-2020 01:03 am	1.00	50 mL	50 mL	Y102809.D	Liquid	Y	NA
40	HS20101111-02MS	MS	10-29-2020 01:24 am	1.00	50 mL	50 mL	Y102810.D	Liquid	Y	NA
41	HS20101111-02MSD	MSD	10-29-2020 01:46 am	1.00	50 mL	50 mL	Y102811.D	Liquid	Y	NA
42	HS20101112-07MS	MS	10-29-2020 02:07 am	1.00	50 mL	50 mL	Y102812.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
43	HS20101112-07MSD	MSD	10-29-2020 02:28 am	1.00	50 mL	50 mL	Y102813.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
44	HS20101172-02	SAMP	10-29-2020 02:49 am	5.00	10 mL	50 mL	Y102814.D	Liquid	Y	NA
45	HS20101172-04	SAMP	10-29-2020 03:10 am	5.00	10 mL	50 mL	Y102815.D	Liquid	Y	NA
46	HS20101111-01	SAMP	10-29-2020 03:31 am	1.00	50 mL	50 mL	Y102816.D	Liquid	Y	NA
47	HS20101111-03	SAMP	10-29-2020 03:52 am	1.00	50 mL	50 mL	Y102817.D	Liquid	Y	NA
48	HS20101111-04	SAMP	10-29-2020 04:13 am	1.00	50 mL	50 mL	Y102818.D	Liquid	Y	NA
49	HS20101111-05	SAMP	10-29-2020 04:34 am	1.00	50 mL	50 mL	Y102819.D	Liquid	Y	NA
50	HS20101111-06	SAMP	10-29-2020 04:55 am	1.00	50 mL	50 mL	Y102820.D	Liquid	Y	NA
51	HS20101111-07	SAMP	10-29-2020 05:16 am	1.00	50 mL	50 mL	Y102821.D	Liquid	Y	NA
52	HS20101111-08	SAMP	10-29-2020 05:37 am	1.00	50 mL	50 mL	Y102822.D	Liquid	Y	NA
53	HS20101112-01	SAMP	10-29-2020 05:58 am	1.00	50 mL	50 mL	Y102823.D	Liquid	Y	NA
54	HS20101112-02	SAMP	10-29-2020 06:19 am	1.00	50 mL	50 mL	Y102824.D	Liquid	Y	NA
55	HS20101112-03	SAMP	10-29-2020 06:40 am	1.00	50 mL	50 mL	Y102825.D	Liquid	Y	NA
56	HS20101112-04	SAMP	10-29-2020 07:02 am	1.00	50 mL	50 mL	Y102826.D	Liquid	Y	NA
57	HS20101112-05	SAMP	10-29-2020 07:23 am	10.00	5 mL	50 mL	Y102827.D	Liquid	Y	NA
58	HS20101112-06	SAMP	10-29-2020 07:44 am	10.00	5 mL	50 mL	Y102828.D	Liquid	Y	NA
59	HS20101101-01	SAMP	10-29-2020 08:05 am	1.00	50 mL	50 mL	Y102829.D	Liquid	Y	NA
60	HS20101101-02	SAMP	10-29-2020 08:26 am	1.00	50 mL	50 mL	Y102830.D	Liquid	Y	NA
61	HS20101101-03	SAMP	10-29-2020 08:47 am	1.00	50 mL	50 mL	Y102831.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-06
CAL STD ID	31106-53-01/02
BFB ID	31106-51-06
pH Paper	634-64-10

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 (TOL) #	OTHER (DCE) #	TOT OUT
01	VLCSW-201028	105	102	102	109	0
02	VBLKW-201028	88	85	98	82	0
03	HS20101079-08	87	82	97	82	0
04	HS20101079-05	86	85	96	81	0
05	HS20101079-02	90	85	98	81	0
06	HS20101079-03	88	84	97	83	0
07	HS20101079-03	89	87	96	81	0
08	HS20101079-03	91	87	94	83	0
09	HS20101079-03	91	88	94	89	0
10	HS20101079-02	87	86	97	84	0
11	HS20101079-04	89	84	97	82	0
12	HS20101079-04	90	85	98	82	0
13	HS20101079-06	87	86	97	80	0
14	HS20101079-06	88	86	96	82	0
15	HS20101079-07	85	84	99	82	0
16	HS20101079-07	89	86	96	85	0
17	HS20101079-01	86	86	98	82	0
18	HS20101079-01	88	84	96	81	0
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= 4-Bromofluorobenzene	(70-130)
SMC2	= Dibromofluoromethane	(70-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER(DCE)	= 1,2-Dichloroethane-d4	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-201028

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Lab File ID: X102807 Lab Sample ID: VBLKW-201028

Date Analyzed: 10/28/20 Time Analyzed: 1350

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-201028	VLCSW-201028	X102805	1308
02	HS20101079-0	HS20101079-08	X102808	1411
03	HS20101079-0	HS20101079-05	X102809	1432
04	HS20101079-0	HS20101079-02	X102810	1453
05	HS20101079-0	HS20101079-03	X102811	1514
06	HS20101079-0	HS20101079-03	X102812	1535
07	HS20101079-0	HS20101079-03M	X102813	1556
08	HS20101079-0	HS20101079-03M	X102814	1618
09	HS20101079-0	HS20101079-02	X102816	1700
10	HS20101079-0	HS20101079-04	X102817	1721
11	HS20101079-0	HS20101079-04	X102818	1742
12	HS20101079-0	HS20101079-06	X102819	1803
13	HS20101079-0	HS20101079-06	X102820	1824
14	HS20101079-0	HS20101079-07	X102821	1845
15	HS20101079-0	HS20101079-07	X102822	1906
16	HS20101079-0	HS20101079-01	X102823	1927
17	HS20101079-0	HS20101079-01	X102824	1948
18				
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Lab File ID: X102801 BFB Injection Date: 10/28/20

Instrument ID: VOA6 BFB Injection Time: 1144

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.3
75	30.0 - 60.0% of mass 95	57.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	1.3 (2.0)1
174	Greater than 50.0% of mass 95	68.3
175	5.0 - 9.0% of mass 174	4.9 (7.2)1
176	95.0 - 101.0% of mass 174	66.0 (96.6)1
177	5.0 - 9.0% of mass 176	4.4 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X102803	10/28/20	1226
02	VLCSW-201028	VLCSW-201028	X102805	10/28/20	1308
03	VBLKW-201028	VBLKW-201028	X102807	10/28/20	1350
04	HS20101079-0	HS20101079-08	X102808	10/28/20	1411
05	HS20101079-0	HS20101079-05	X102809	10/28/20	1432
06	HS20101079-0	HS20101079-02	X102810	10/28/20	1453
07	HS20101079-0	HS20101079-03	X102811	10/28/20	1514
08	HS20101079-0	HS20101079-03	X102812	10/28/20	1535
09	HS20101079-0	HS20101079-03M	X102813	10/28/20	1556
10	HS20101079-0	HS20101079-03M	X102814	10/28/20	1618
11	HS20101079-0	HS20101079-02	X102816	10/28/20	1700
12	HS20101079-0	HS20101079-04	X102817	10/28/20	1721
13	HS20101079-0	HS20101079-04	X102818	10/28/20	1742
14	HS20101079-0	HS20101079-06	X102819	10/28/20	1803
15	HS20101079-0	HS20101079-06	X102820	10/28/20	1824
16	HS20101079-0	HS20101079-07	X102821	10/28/20	1845
17	HS20101079-0	HS20101079-07	X102822	10/28/20	1906
18	HS20101079-0	HS20101079-01	X102823	10/28/20	1927
19	HS20101079-0	HS20101079-01	X102824	10/28/20	1948
20	CCV-END	CCV-END	X102825	10/28/20	2009
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: VOA6 Calibration Date: 10/28/20 Time: 1226

Lab File ID: X102803 Init. Calib. Date(s): 10/25/20 10/25/20

Init. Calib. Times: 1642 2011

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5400000	0.6088097	0.6088097	0.1	-12.74	20.00	AVRG
Trichloroethene	0.3290000	0.3809795	0.3809795	0.2	-15.80	20.00	AVRG
Methylene Chloride	0.7900000	0.7581350	0.7581350	0.1	4.03	20.00	AVRG
cis-1,2-Dichloroethene	0.7820000	0.8378702	0.8378702	0.1	-7.14	20.00	AVRG
Vinyl Chloride	1.5370000	1.2776026	1.2776026	0.1	16.88	20.00	AVRG
1,1,2-Trichloroethane	0.3250000	0.3259884	0.3259884	0.1	-0.30	20.00	AVRG
1,1-Dichloroethene	1.2180000	1.0214862	1.0214862	0.1	16.13	20.00	AVRG
4-Bromofluorobenzene	52.064005	50.000000	0.4988823	0.1	-4.13	20.00	LINR
Dibromofluoromethane	0.6880000	0.7205711	0.7205711	0.1	-4.73	20.00	AVRG
Toluene-d8	51.405522	50.000000	1.4511968	0.1	-2.81	20.00	LINR
1,2-Dichloroethane-d4	54.020594	50.000000	0.9457688	0.1	-8.04	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: VOA6 Calibration Date: 10/28/20 Time: 2009

Lab File ID: X102825 Init. Calib. Date(s): 10/25/20 10/25/20

Init. Calib. Times: 1642 2011

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5400000	0.6097365	0.6097365	0.1	-12.91	50.00	AVRG
Trichloroethene	0.3290000	0.3870938	0.3870938	0.2	-17.66	50.00	AVRG
Methylene Chloride	0.7900000	0.7365247	0.7365247	0.1	6.77	50.00	AVRG
cis-1,2-Dichloroethene	0.7820000	0.7924612	0.7924612	0.1	-1.34	50.00	AVRG
Vinyl Chloride	1.5370000	1.1404582	1.1404582	0.1	25.80	50.00	AVRG
1,1,2-Trichloroethane	0.3250000	0.3245026	0.3245026	0.1	0.15	50.00	AVRG
1,1-Dichloroethene	1.2180000	0.9101225	0.9101225	0.1	25.28	50.00	AVRG
4-Bromofluorobenzene	50.417729	50.000000	0.4824794	0.1	-0.84	50.00	LINR
Dibromofluoromethane	0.6880000	0.6985955	0.6985955	0.1	-1.54	50.00	AVRG
Toluene-d8	49.109701	50.000000	1.3841390	0.1	1.78	50.00	LINR
1,2-Dichloroethane-d4	51.322317	50.000000	0.8985014	0.1	-2.64	50.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Lab File ID (Standard): X102803 Date Analyzed: 10/28/20

Instrument ID: VOA6 Time Analyzed: 1226

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(DFB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	300465	4.97	281826	7.67	119891	9.67
	UPPER LIMIT	600930	5.47	563652	8.17	239782	10.17
	LOWER LIMIT	150233	4.47	140913	7.17	59946	9.17
	CLIENT SAMPLE NO.						
01	VLCSW-201028	284447	4.97	259545	7.67	103744	9.67
02	VBLKW-201028	282298	4.97	244423	7.67	91702	9.67
03	HS20101079-08	279128	4.97	242981	7.67	91824	9.66
04	HS20101079-05	287089	4.97	256506	7.67	96470	9.67
05	HS20101079-02	282649	4.97	240093	7.67	89313	9.67
06	HS20101079-03	289922	4.97	247725	7.67	92701	9.67
07	HS20101079-03	277202	4.97	242624	7.67	93735	9.67
08	HS20101079-03	293221	4.97	260582	7.67	100445	9.66
09	HS20101079-03	287510	4.97	252676	7.67	98161	9.66
10	HS20101079-02	281314	4.97	245673	7.67	94358	9.67
11	HS20101079-04	282533	4.97	242622	7.67	91080	9.67
12	HS20101079-04	282284	4.97	239528	7.67	93059	9.67
13	HS20101079-06	278446	4.97	239933	7.67	92233	9.67
14	HS20101079-06	275034	4.97	240323	7.67	91420	9.67
15	HS20101079-07	287482	4.97	242310	7.67	87066	9.67
16	HS20101079-07	275526	4.97	243215	7.67	92179	9.67
17	HS20101079-01	278669	4.97	238201	7.67	89498	9.67
18	HS20101079-01	273166	4.97	241800	7.67	88474	9.67
19							
20							

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Lab File ID (Standard): X102803 Date Analyzed: 10/28/20

Instrument ID: VOA6 Time Analyzed: 1226

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

	CLIENT SAMPLE NO.	IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	156054	4.19				
	UPPER LIMIT	312108	4.69				
	LOWER LIMIT	78027	3.69				
01	VLCSW-201028	156669	4.19				
02	VBLKW-201028	160185	4.19				
03	HS20101079-08	159647	4.19				
04	HS20101079-05	162364	4.19				
05	HS20101079-02	161490	4.19				
06	HS20101079-03	159290	4.19				
07	HS20101079-03	161154	4.19				
08	HS20101079-03	167906	4.19				
09	HS20101079-03	161827	4.19				
10	HS20101079-02	159319	4.19				
11	HS20101079-04	160021	4.19				
12	HS20101079-04	157381	4.19				
13	HS20101079-06	162996	4.19				
14	HS20101079-06	156244	4.19				
15	HS20101079-07	161426	4.19				
16	HS20101079-07	153311	4.19				
17	HS20101079-01	159695	4.19				
18	HS20101079-01	155510	4.19				
19							
20							

IS4 = Pentafluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102801.D

Date : 28-OCT-2020 11:44

Client ID: BFB

Instrument: voa6.i

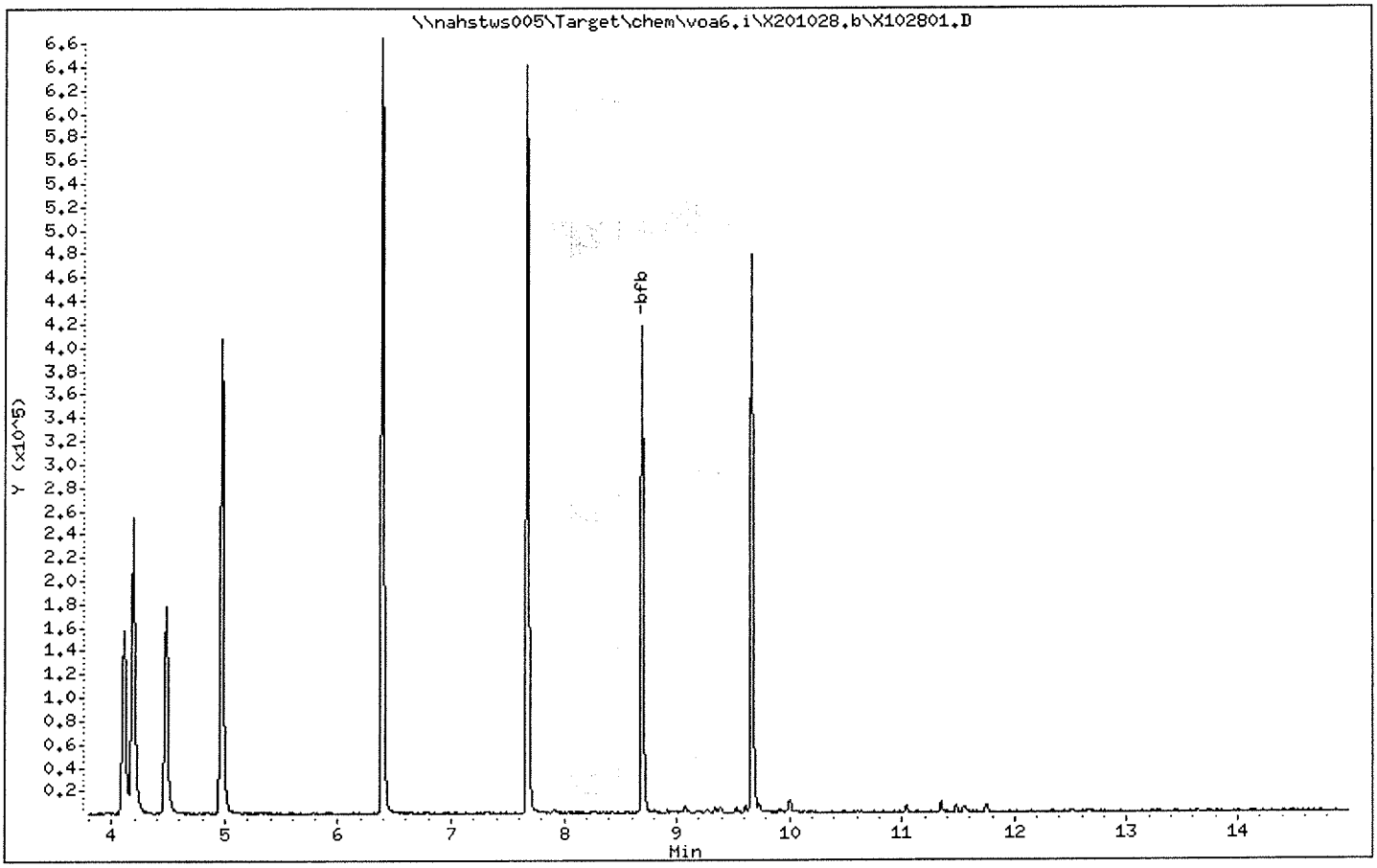
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102801.D

Date : 28-OCT-2020 11:44

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

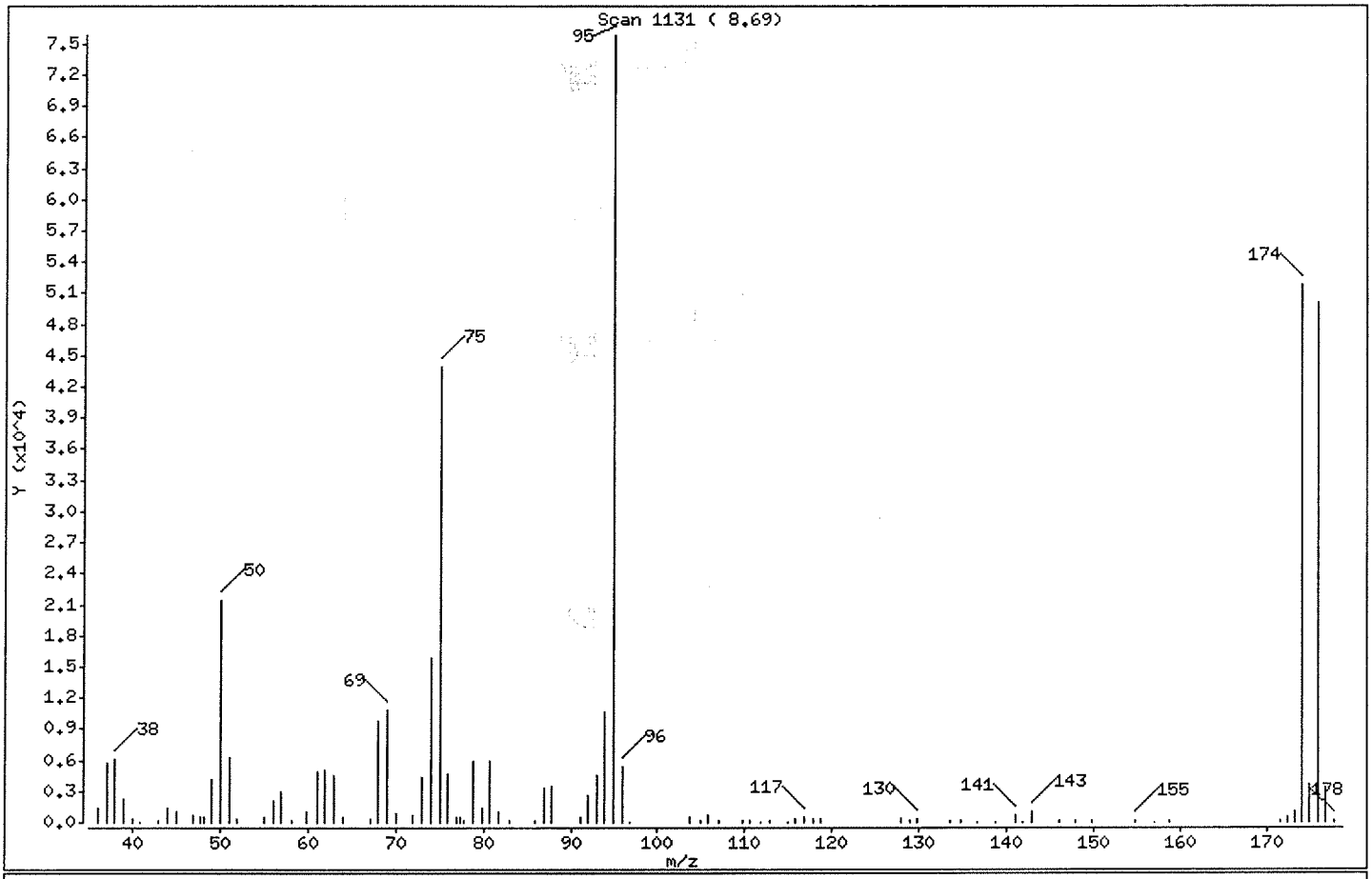
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	28.33
75	30.00 - 60.00% of mass 95	57.88
96	5.00 - 9.00% of mass 95	7.02
173	Less than 2.00% of mass 174	1.33 (1.95)
174	Greater than 50.00% of mass 95	68.33
175	5.00 - 9.00% of mass 174	4.89 (7.16)
176	95.00 - 101.00% of mass 174	65.98 (96.56)
177	5.00 - 9.00% of mass 176	4.41 (6.68)

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102801.D

Date : 28-OCT-2020 11:44

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X102801.D
Spectrum: Scan 1131 (8.69)
Location of Maximum: 95.00
Number of points: 89

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1321	63.00	4542	91.90	2577	134.80	159
37.00	5712	64.00	504	93.00	4613	136.70	86
38.00	6092	67.10	366	93.90	10649	138.70	53
39.00	2291	68.00	9801	95.00	75816	141.00	756
40.00	385	69.00	10804	96.00	5326	141.90	84
40.80	77	70.10	810	96.80	52	142.90	1018
42.90	141	72.00	716	103.70	515	146.10	109
44.00	1349	73.00	4429	104.90	185	147.90	179
45.10	1022	74.00	15864	105.70	737	149.70	104
47.00	738	75.00	43880	106.90	164	154.90	203
47.80	493	76.00	4661	109.80	132	157.00	64
48.10	478	76.90	451	110.50	93	158.70	172
49.00	4234	77.30	528	111.90	64	171.40	178
50.00	21480	77.80	260	112.90	166	172.30	552
51.00	6252	78.90	5968	114.90	63	173.10	1011
52.00	304	79.90	1448	115.80	350	173.90	51808
55.00	442	80.80	5997	116.90	539	174.90	3708
56.00	2088	81.80	989	117.80	290	175.90	50024
57.00	3041	82.90	146	118.70	362	176.80	3344
58.10	119	85.90	99	127.90	267	177.80	146
59.90	1011	86.90	3320	128.90	161		
61.00	4863	87.90	3497	129.80	405		
62.00	5029	91.10	529	133.60	114		

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102803.D Page 1
Report Date: 30-Nov-2020 14:10

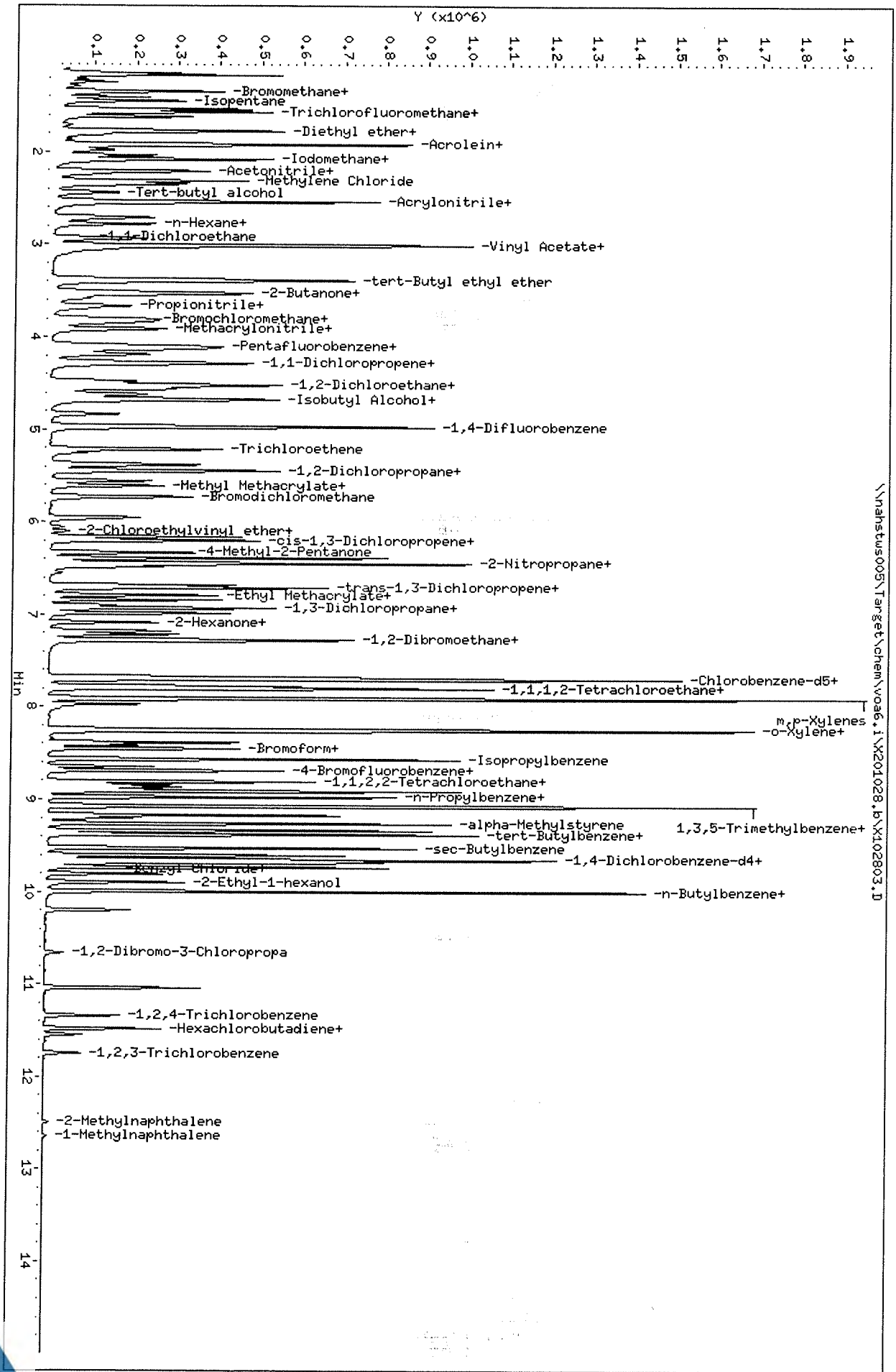
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102803.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 28-OCT-2020 12:26
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	156054	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	300465	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	281826	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	119891	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	147591	50.0000	54.02
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	140598	50.0000	52.06
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	112448	50.0000	52.34
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	408985	50.0000	51.40
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	91872	50.0000	50.11
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	159407	50.0000	41.94
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	182926	50.0000	56.36
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	130753	50.0000	53.54
17 Methylene Chloride	84	2.313	2.313	(0.552)	118310	50.0000	47.97
38 Trichloroethene	130	5.214	5.214	(1.049)	114471	50.0000	57.92
5 Vinyl Chloride	62	1.145	1.145	(0.273)	199375	50.0000	41.55



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102803.D
Date : 28-OCT-2020 12:26
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

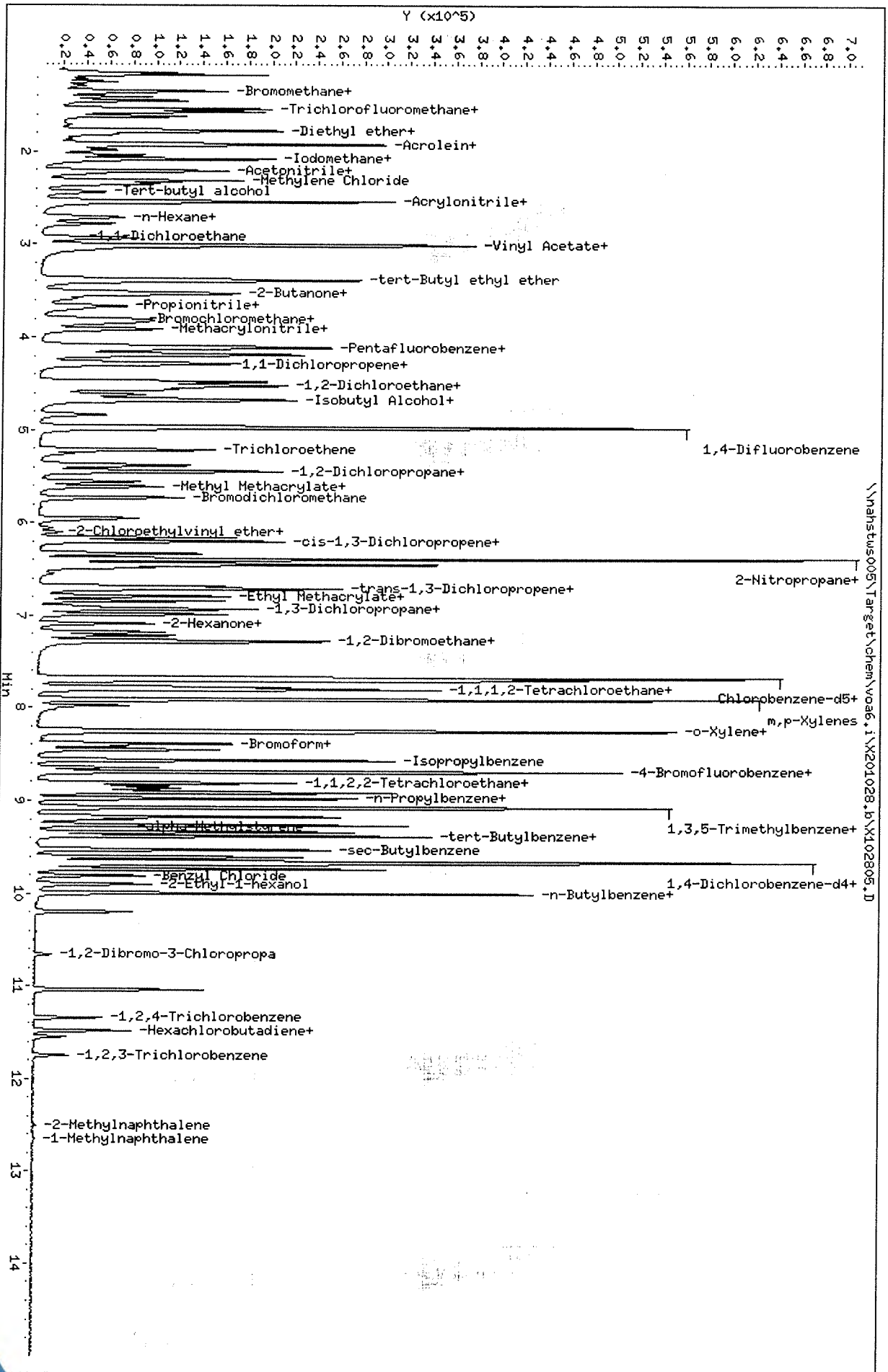
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102805.D
Lab Smp Id: VLCSW-201028 Client Smp ID: VLCSW-201028
Inj Date : 28-OCT-2020 13:08
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-201028;VLCSW-201028;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	156669	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	284447	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	259545	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	103744	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	149438	54.4817	54.48
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	130451	52.4386	52.43
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	109652	50.8415	50.84
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	374609	51.1362	51.13
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	35649	21.1155	21.11
11 1,1-Dichloroethene	96	1.926	1.919	(0.460)	57210	14.9931	14.99
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	68665	22.3509	22.35
27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	47721	19.4651	19.46
17 Methylene Chloride	84	2.313	2.313	(0.552)	43742	17.6684	17.66
38 Trichloroethene	130	5.214	5.214	(1.049)	43187	23.0837	23.08
5 Vinyl Chloride	62	1.145	1.145	(0.273)	72385	15.0287	15.02



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102805.D
Date : 28-OCT-2020 13:08
Client ID: VLCSW-201028
Sample Info: VLCSW-201028;VLCSW-201028;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102807.D
Lab Smp Id: VBLKW-201028 Client Smp ID: VBLKW-201028
Inj Date : 28-OCT-2020 13:50
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-201028;VBLKW-201028;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

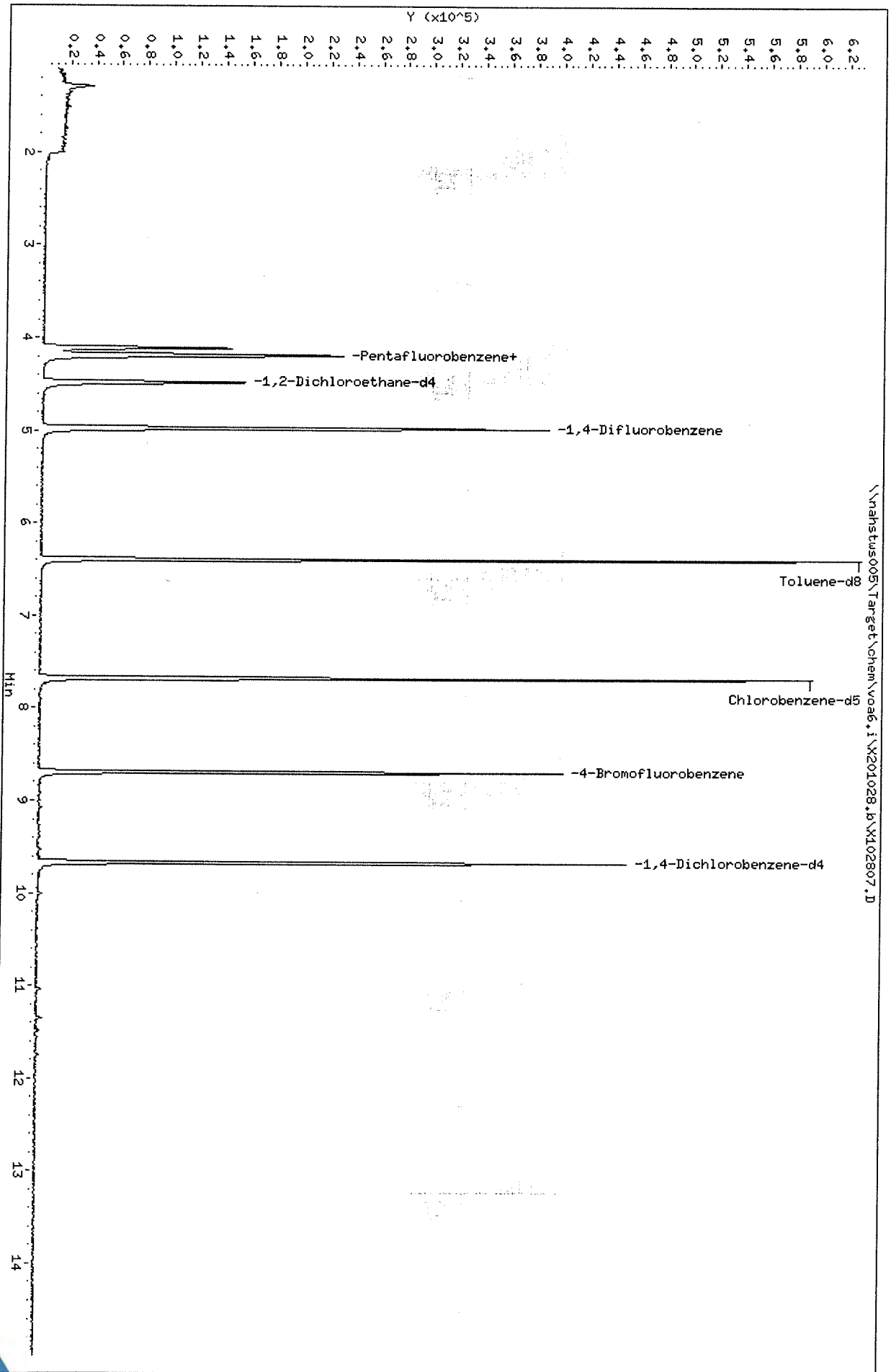
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	160185	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	282298	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	244423	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	91702	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	115679	41.2557	41.25
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	102492	44.0790	44.07
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	93937	42.5991	42.59
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	336685	48.8813	48.88

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102807.D
Date : 28-OCT-2020 13:50
Client ID: VBLKW-201028
Sample Info: VBLKW-201028;VBLKW-201028;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102808.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102808.D
Lab Smp Id: HS20101079-08 Client Smp ID: HS20101079-08
Inj Date : 28-OCT-2020 14:11
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-08;HS20101079-08;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	159647	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	279128	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	242981	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	91824	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	114472	40.9631	40.96 (M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	100187	43.3766	43.37
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	89803	40.8616	40.86
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	332131	48.5195	48.51

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102808.D

Date : 28-OCT-2020 14:11

Client ID: HS20101079-08

Instrument: voa6.i

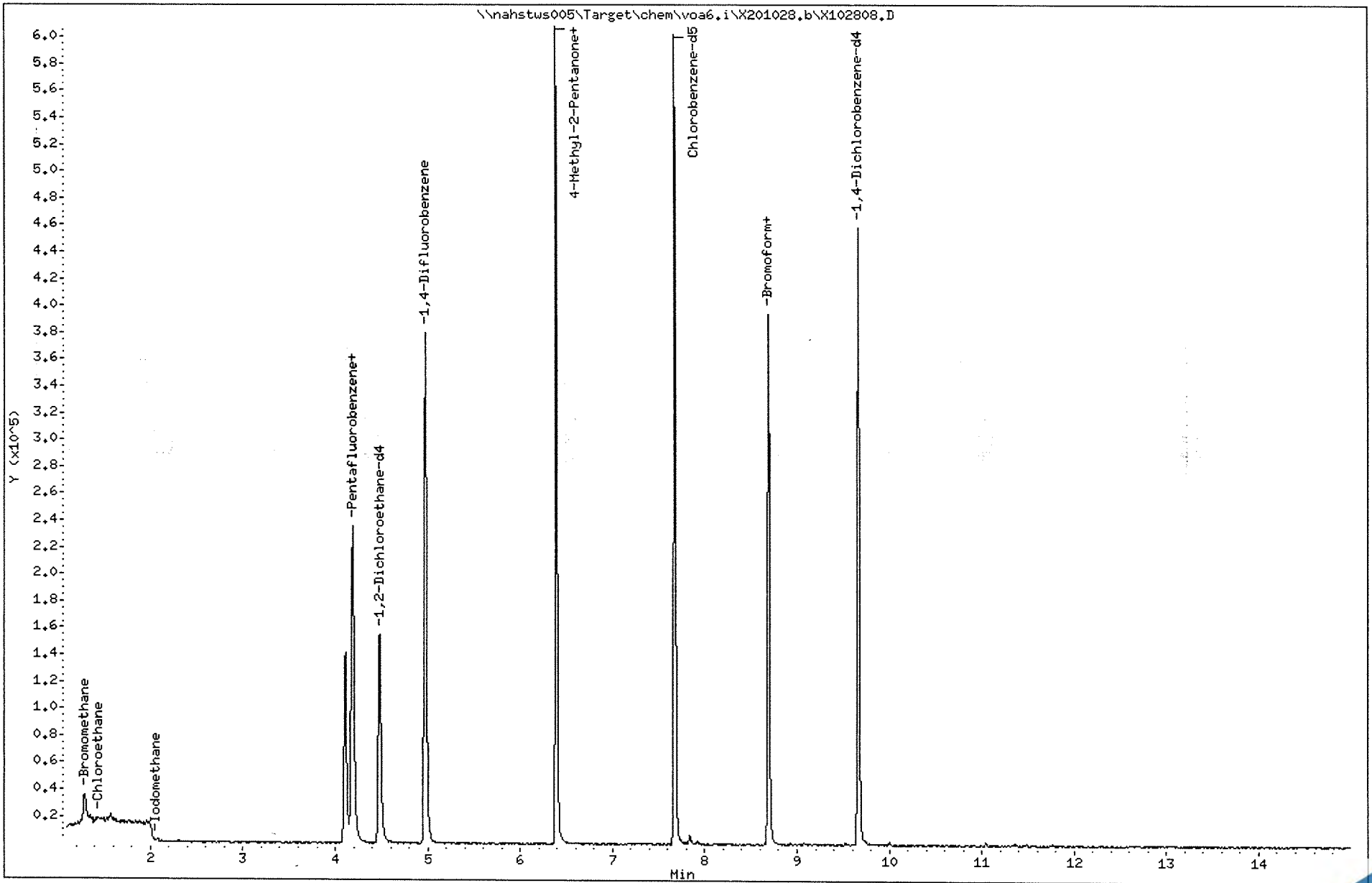
Sample Info: HS20101079-08;HS20101079-08;;;

Purge Volume: 5.0

Operator: PC

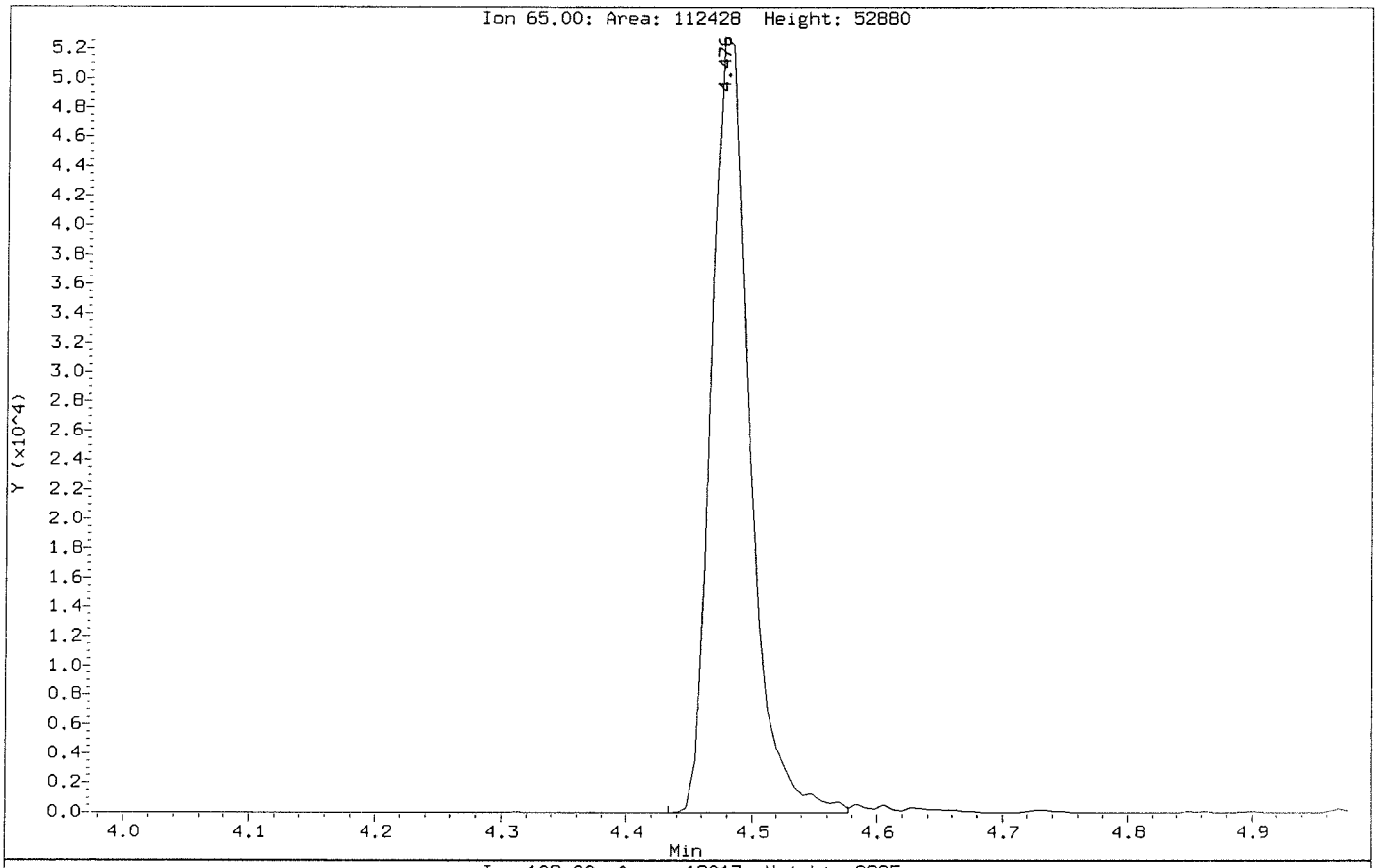
Column phase: DB624

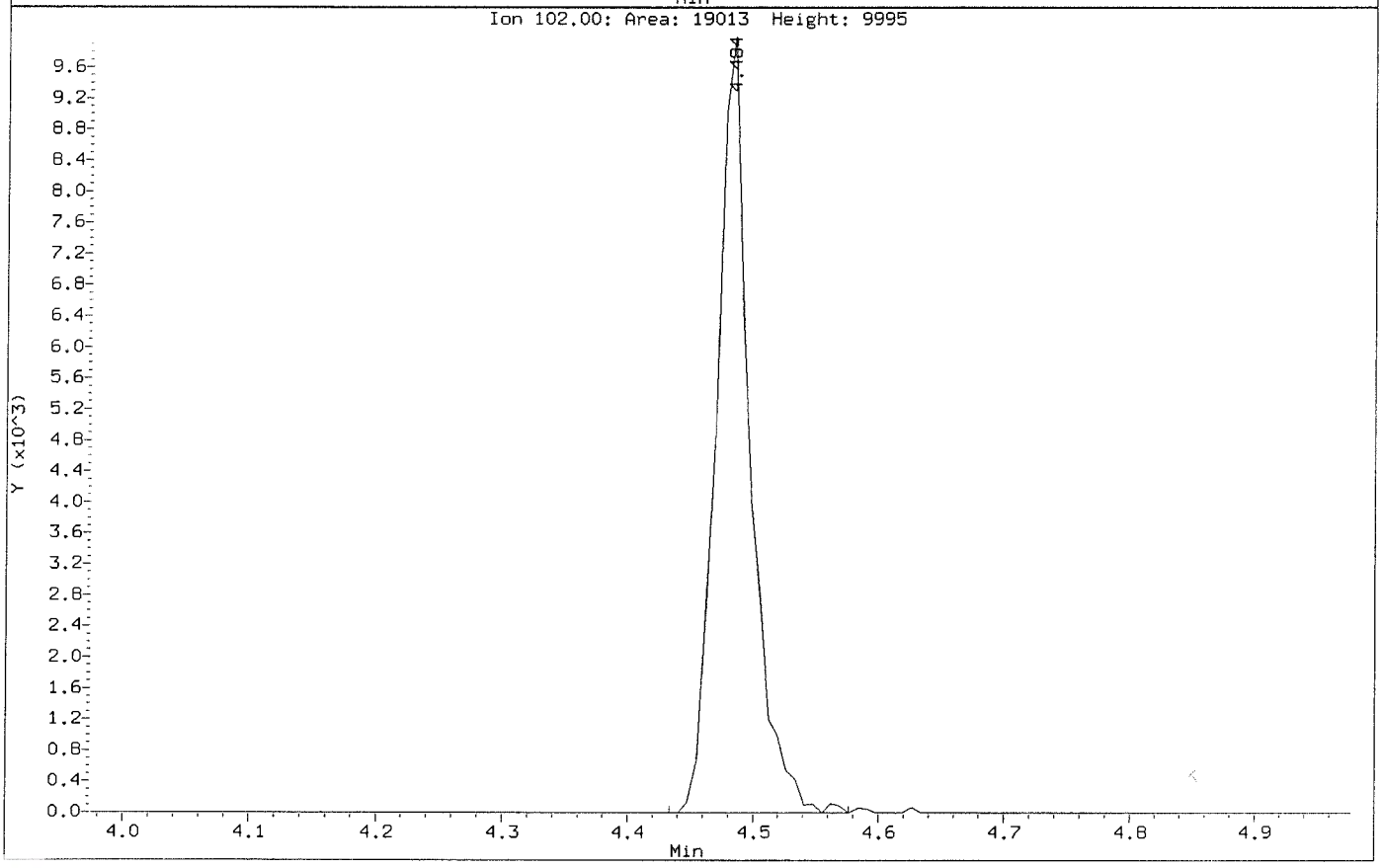
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102808.D
Injection Date: 28-OCT-2020 14:11
Instrument: voa6.i
Client Sample ID: HS20101079-08

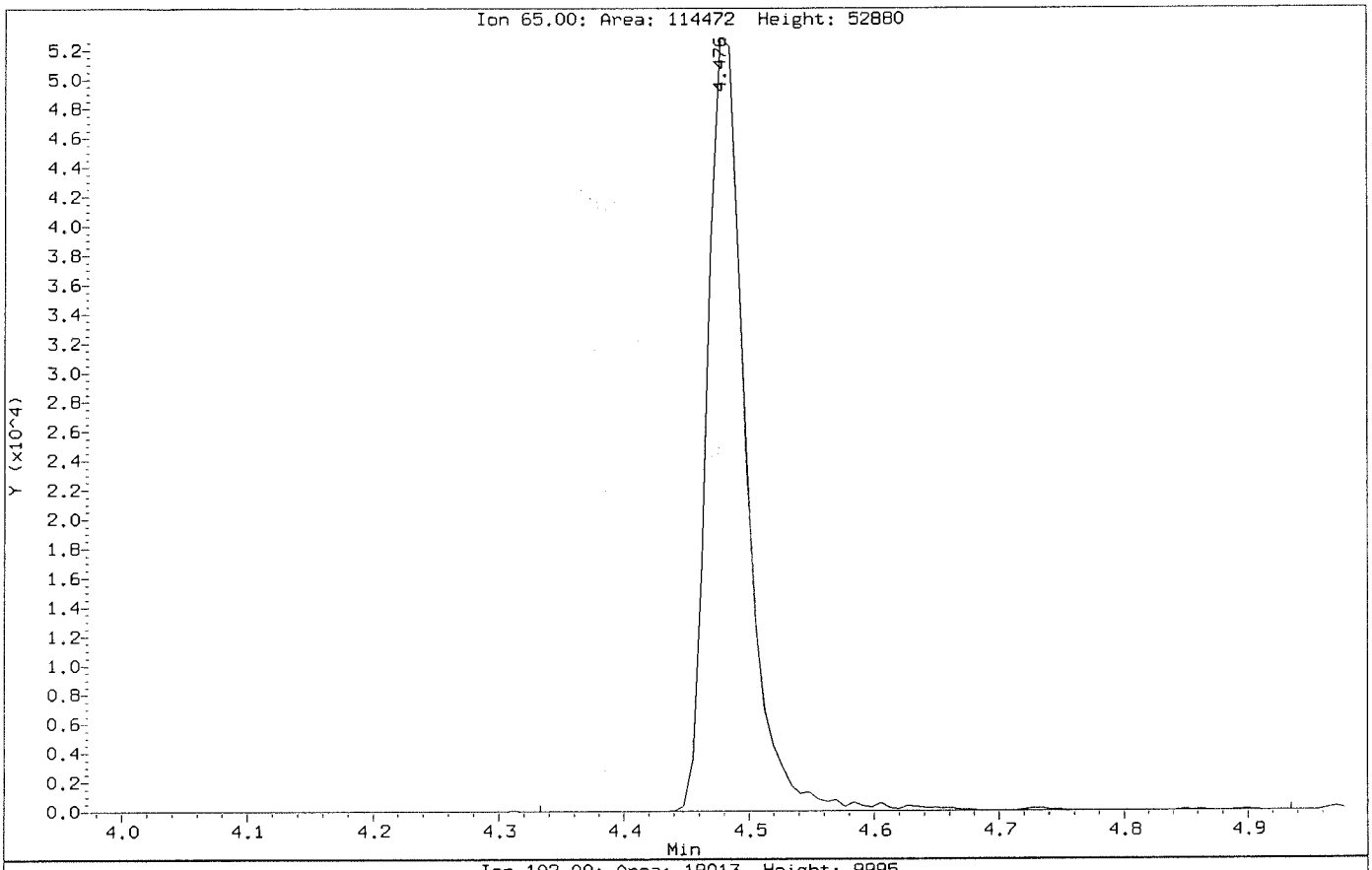
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

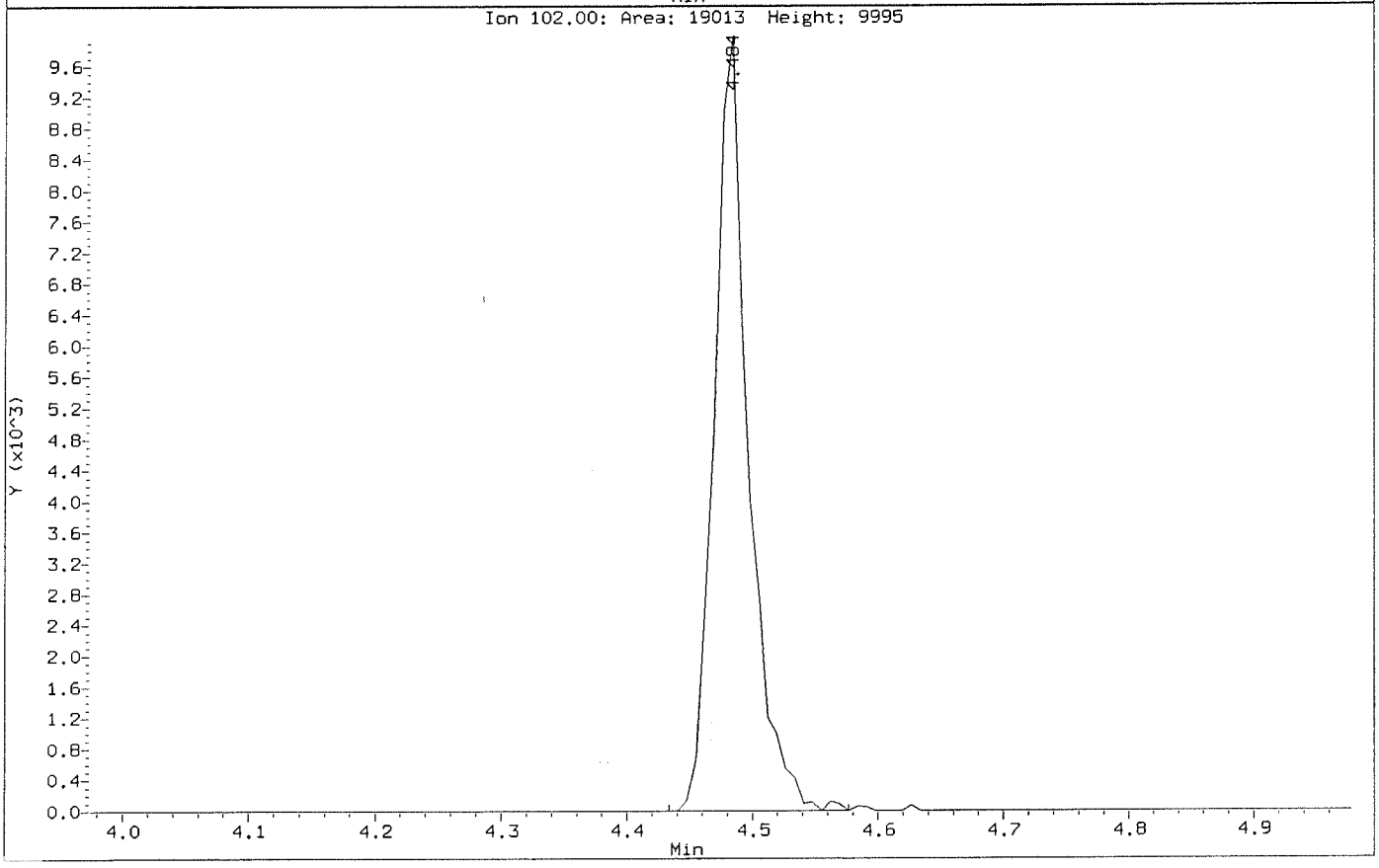




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102808.D
Injection Date: 28-OCT-2020 14:11
Instrument: voa6.i
Client Sample ID: HS20101079-08

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102809.D Page 1
Report Date: 30-Nov-2020 14:15

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Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102809.D
Lab Smp Id: HS20101079-05 Client Smp ID: HS20101079-05
Inj Date : 28-OCT-2020 14:32
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-05;HS20101079-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

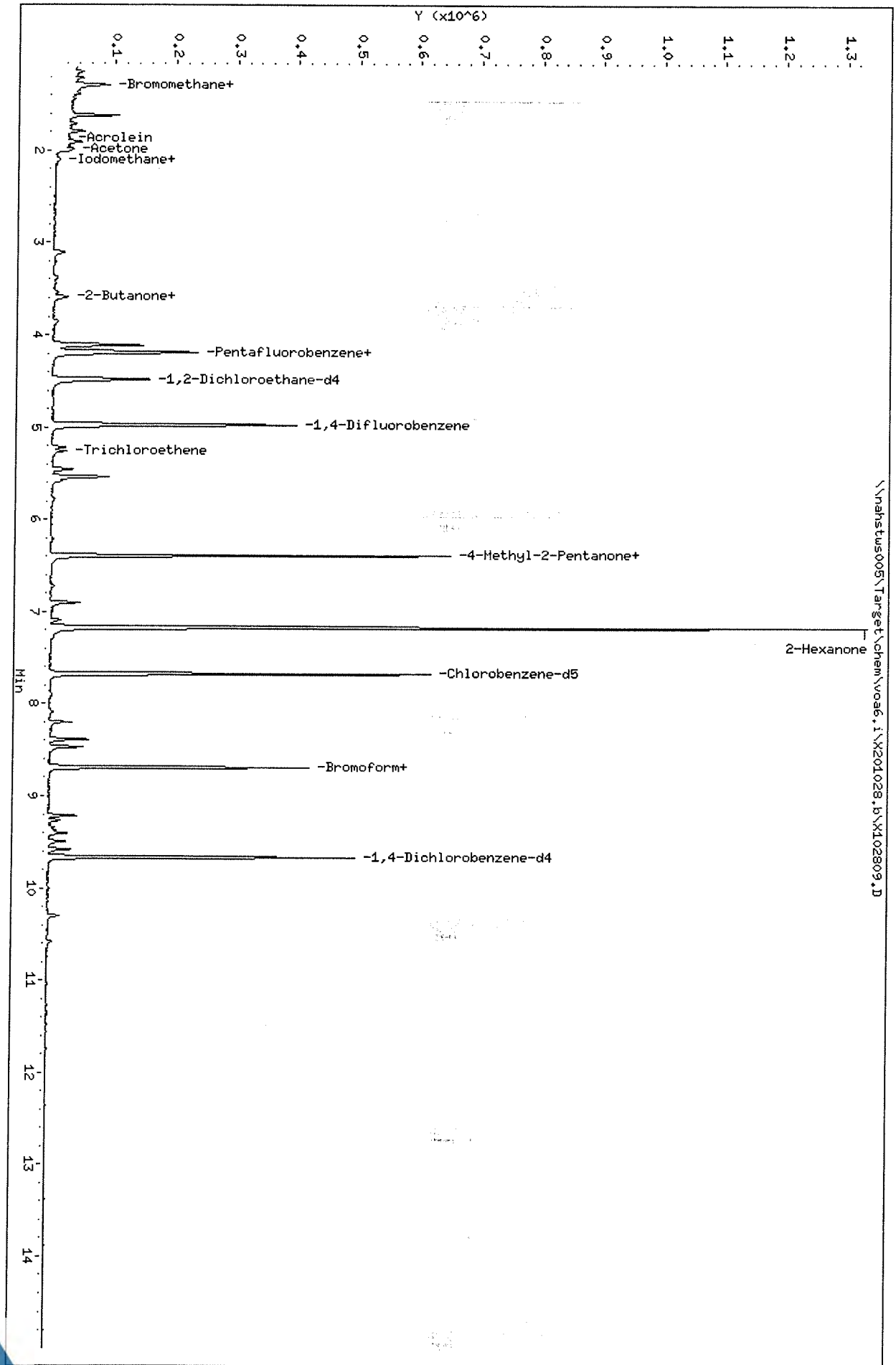
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	162364	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287089	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	256506	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	96470	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	115234	40.5460	40.54(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	105472	43.2625	43.26
$ 30 Dibromofluoromethane	113	4.110	4.111	(0.981)	94816	42.4206	42.42
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	346239	47.9350	47.93
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	4213	1.65818	1.65(a)
38 Trichloroethene	130	5.221	5.214	(1.050)	2954	1.56440	1.56(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\nahstus005\Target\chem\voa6.i\X201028.b\X102809.D
Date : 28-OCT-2020 14:32
Client ID: HS20101079-05
Sample Info: HS20101079-05;HS20101079-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102809.D

Date : 28-OCT-2020 14:32

Client ID: HS20101079-05

Instrument: voa6.i

Sample Info: HS20101079-05;HS20101079-05;;;

Purge Volume: 5.0

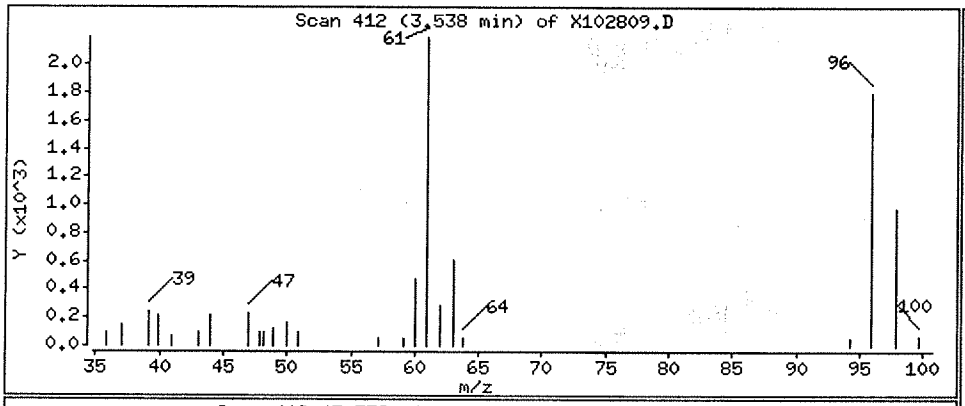
Operator: PC

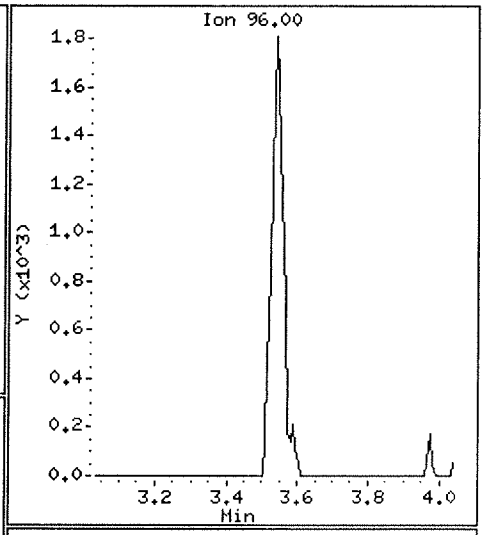
Column phase: DB624

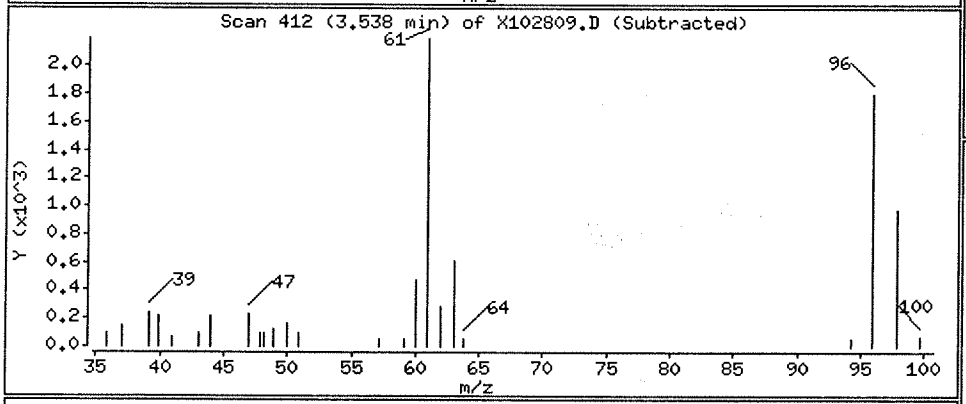
Column diameter: 0.18

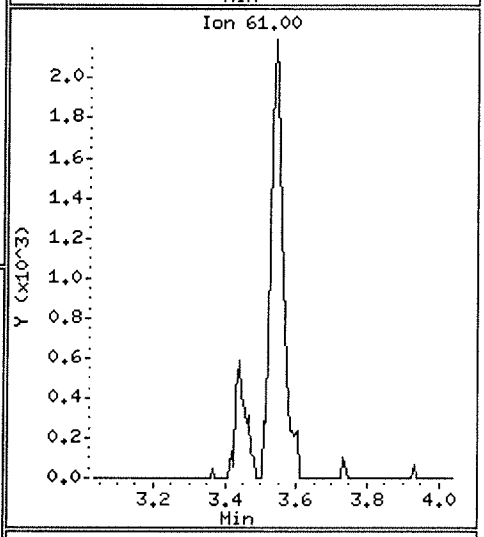
27 cis-1,2-Dichloroethene

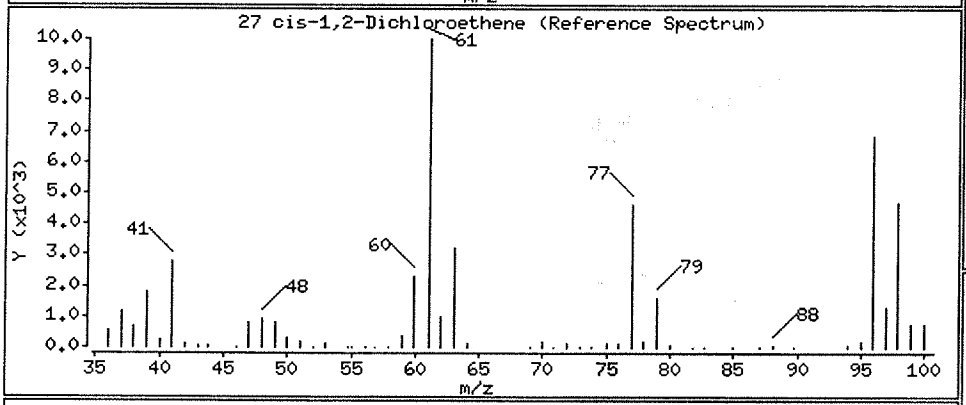
Concentration: 1.65 ug/l

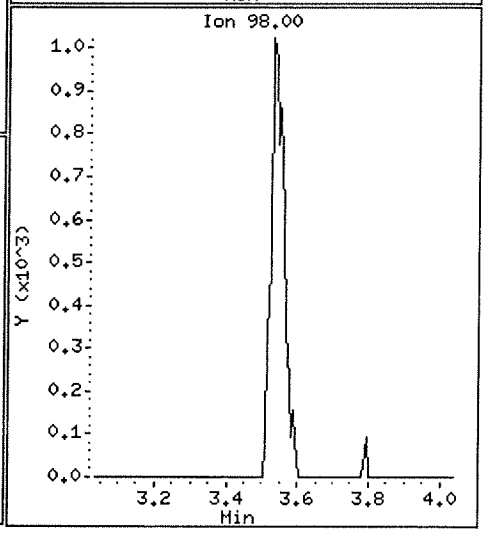


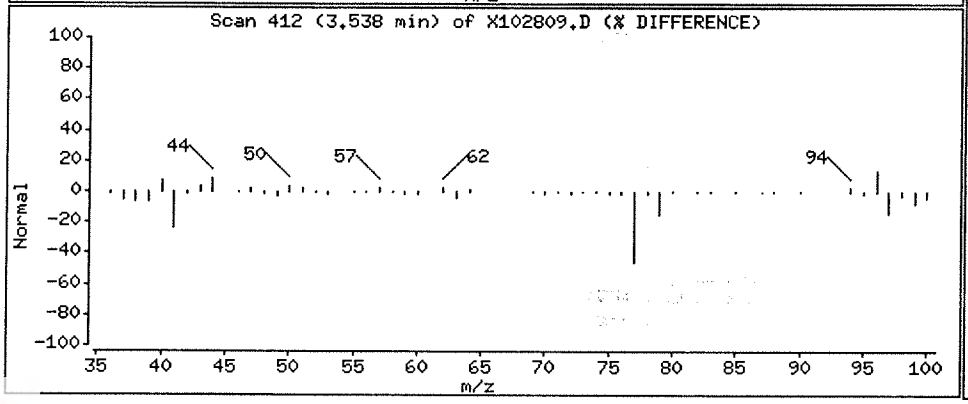












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102809.D

Date : 28-OCT-2020 14:32

Client ID: HS20101079-05

Instrument: voa6.i

Sample Info: HS20101079-05;HS20101079-05;;;

Purge Volume: 5.0

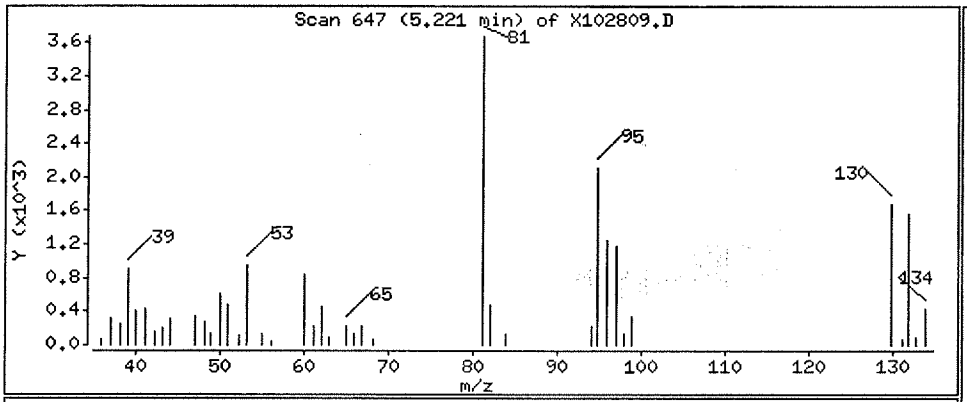
Operator: PC

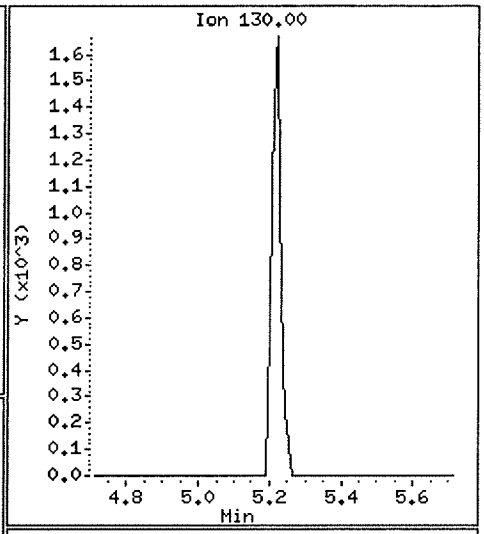
Column phase: DB624

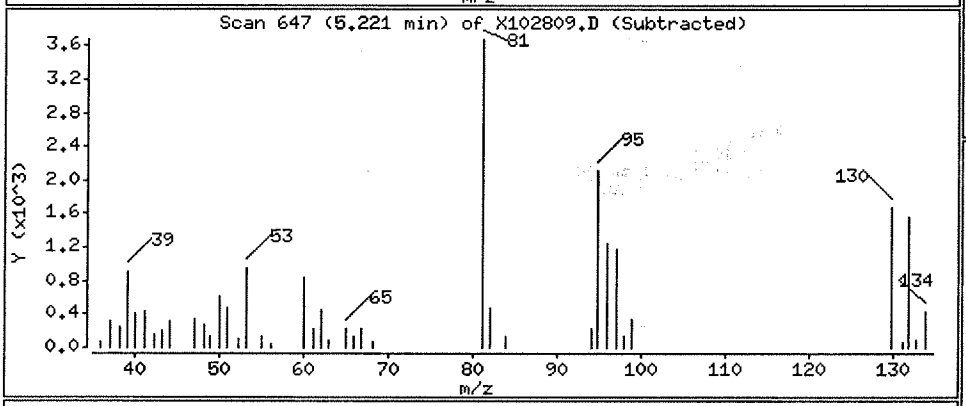
Column diameter: 0.18

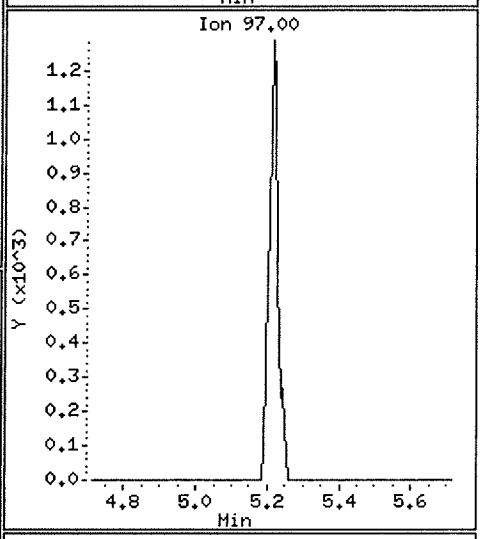
38 Trichloroethene

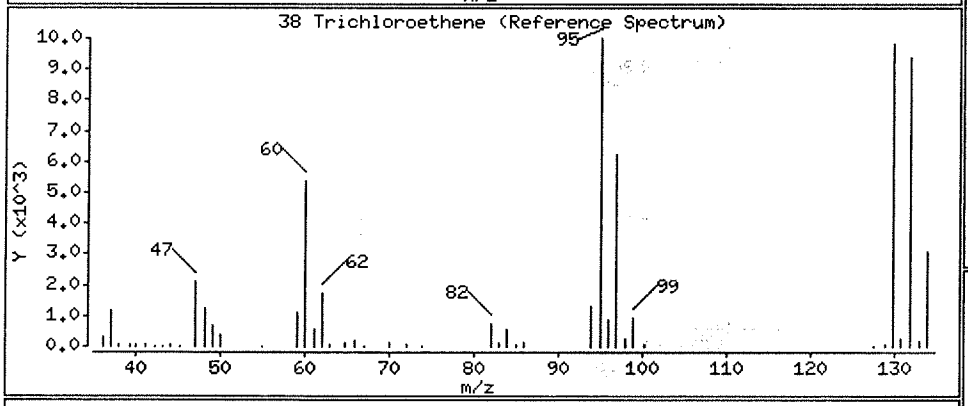
Concentration: 1.56 ug/l

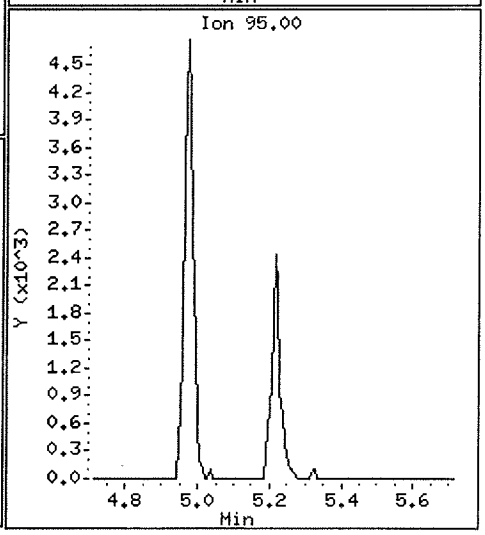


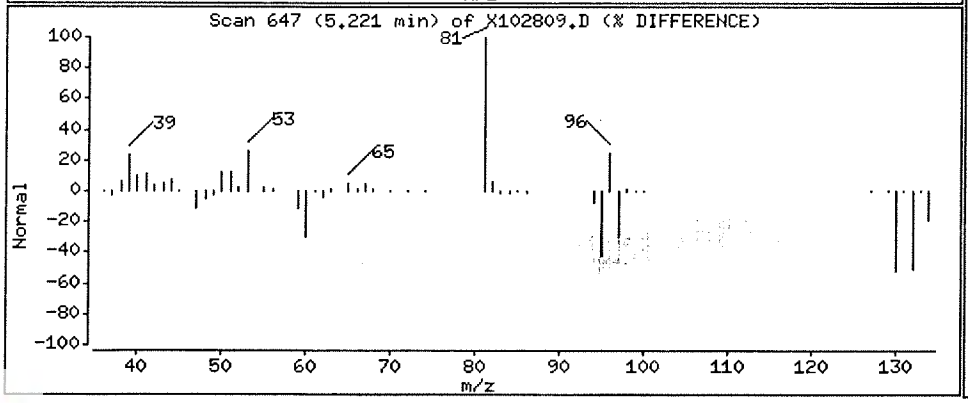






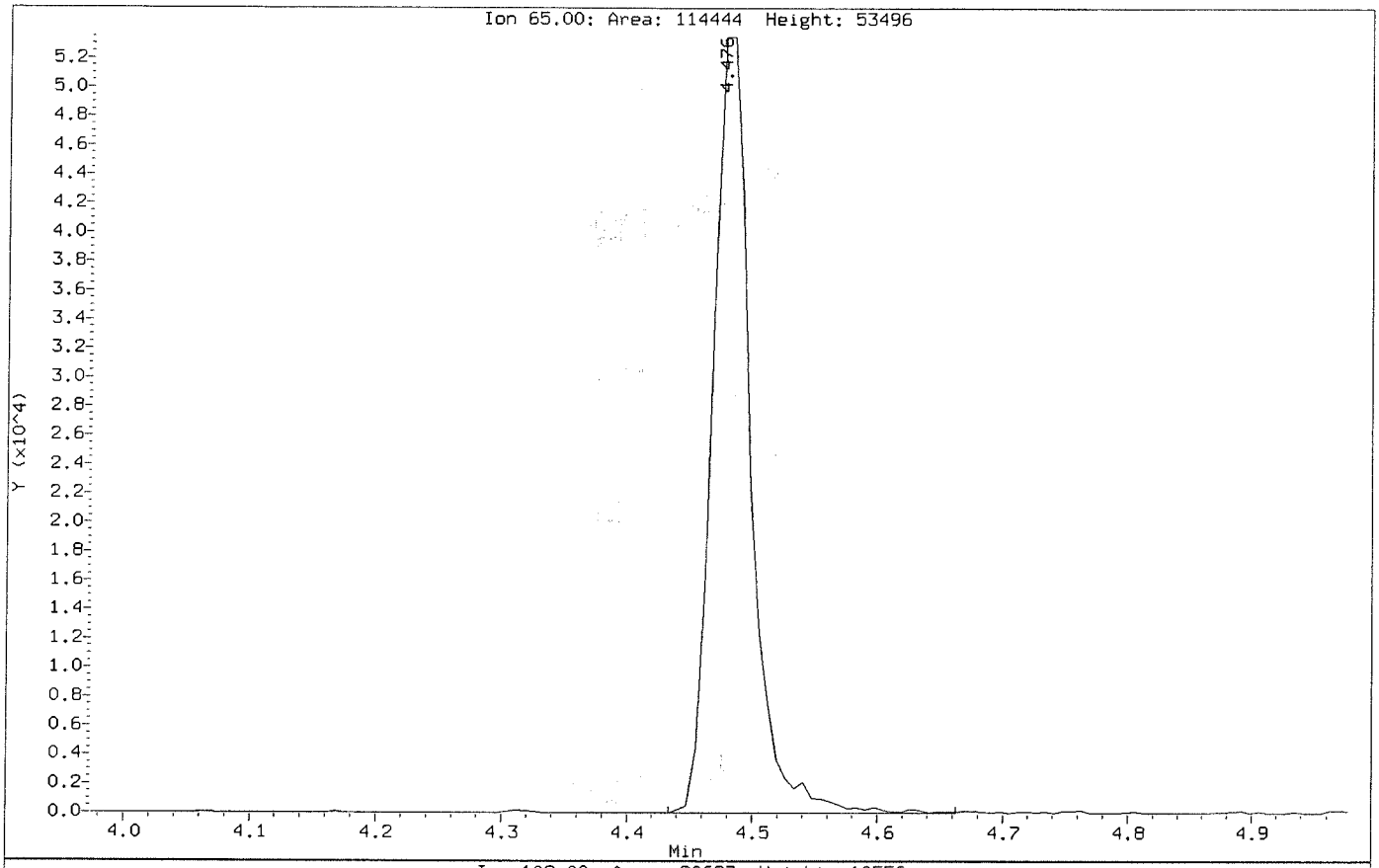


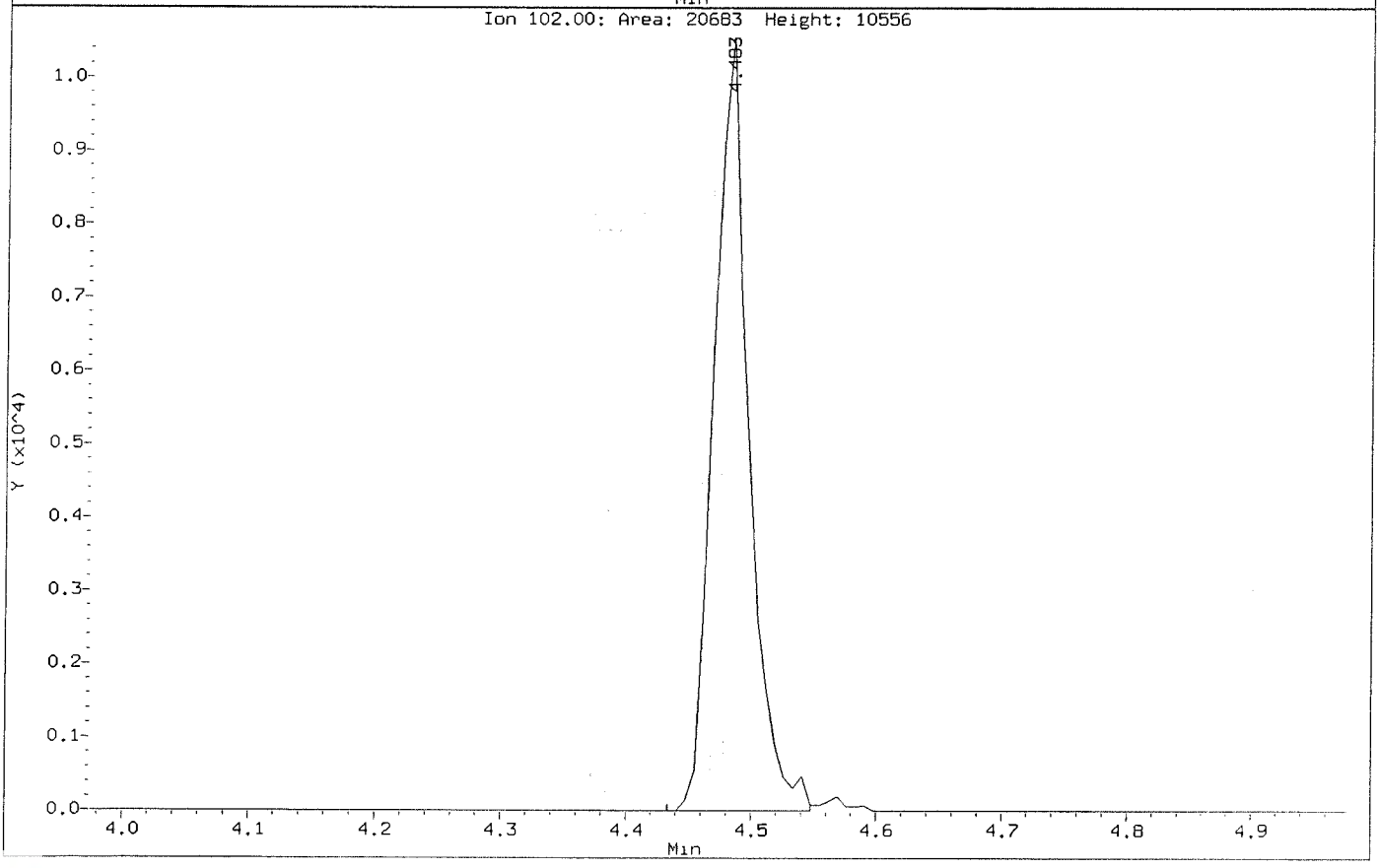




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102809.D
Injection Date: 28-OCT-2020 14:32
Instrument: voa6.i
Client Sample ID: HS20101079-05

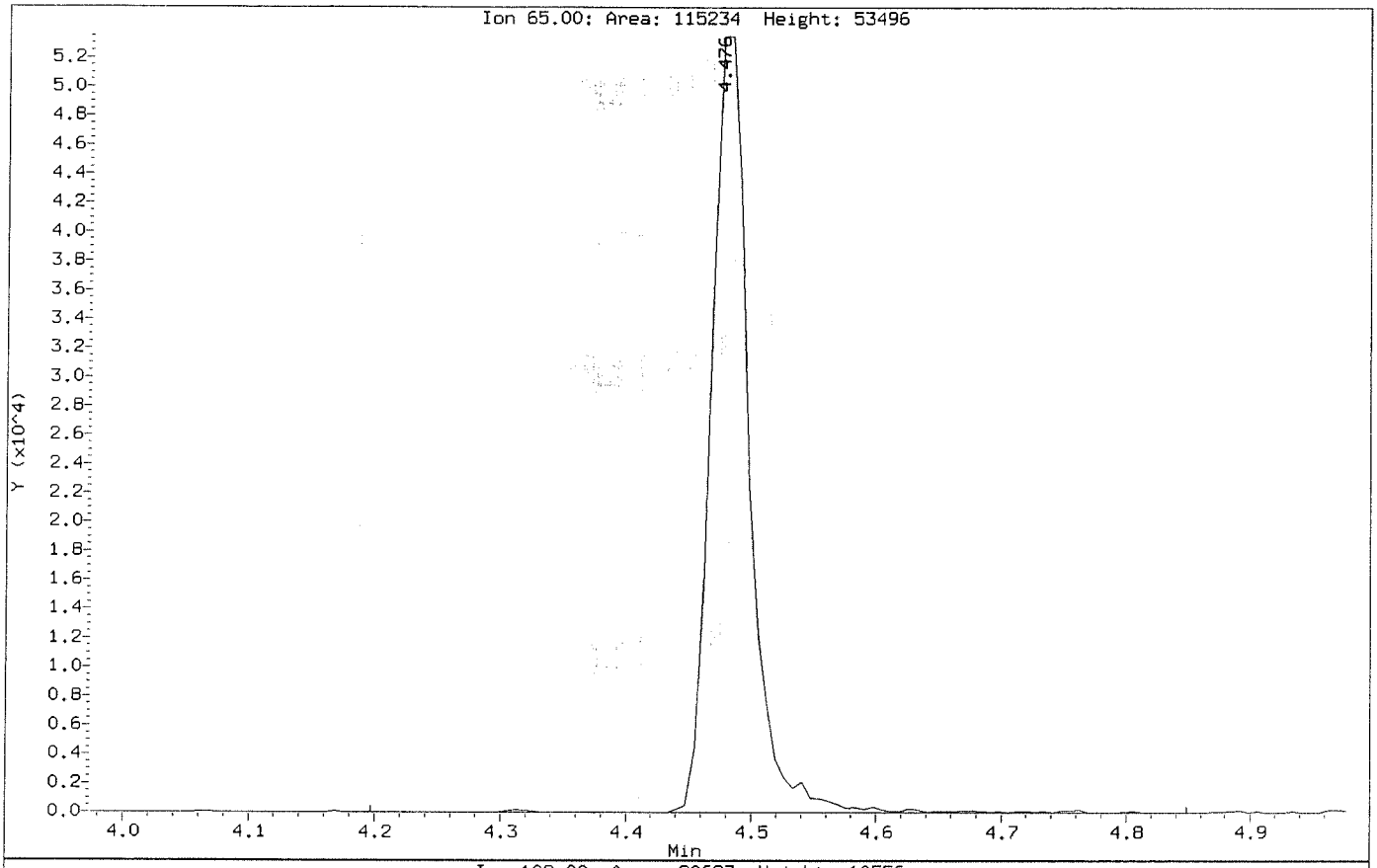
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

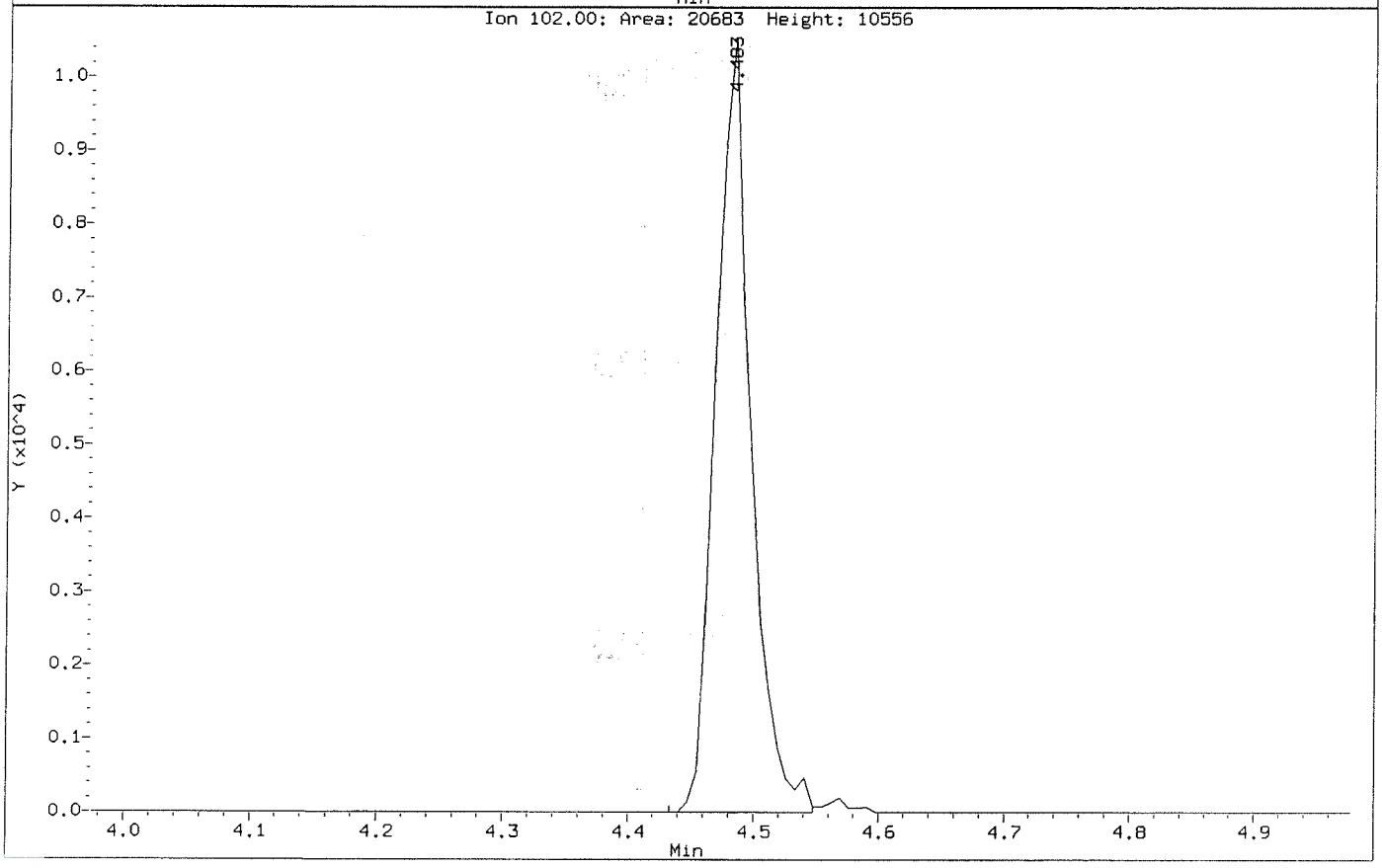




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102809.D
Injection Date: 28-OCT-2020 14:32
Instrument: voa6.i
Client Sample ID: HS20101079-05

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D Page 1
Report Date: 30-Nov-2020 14:15

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Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D
Lab Smp Id: HS20101079-02 Client Smp ID: HS20101079-02
Inj Date : 28-OCT-2020 14:53
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-02;HS20101079-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

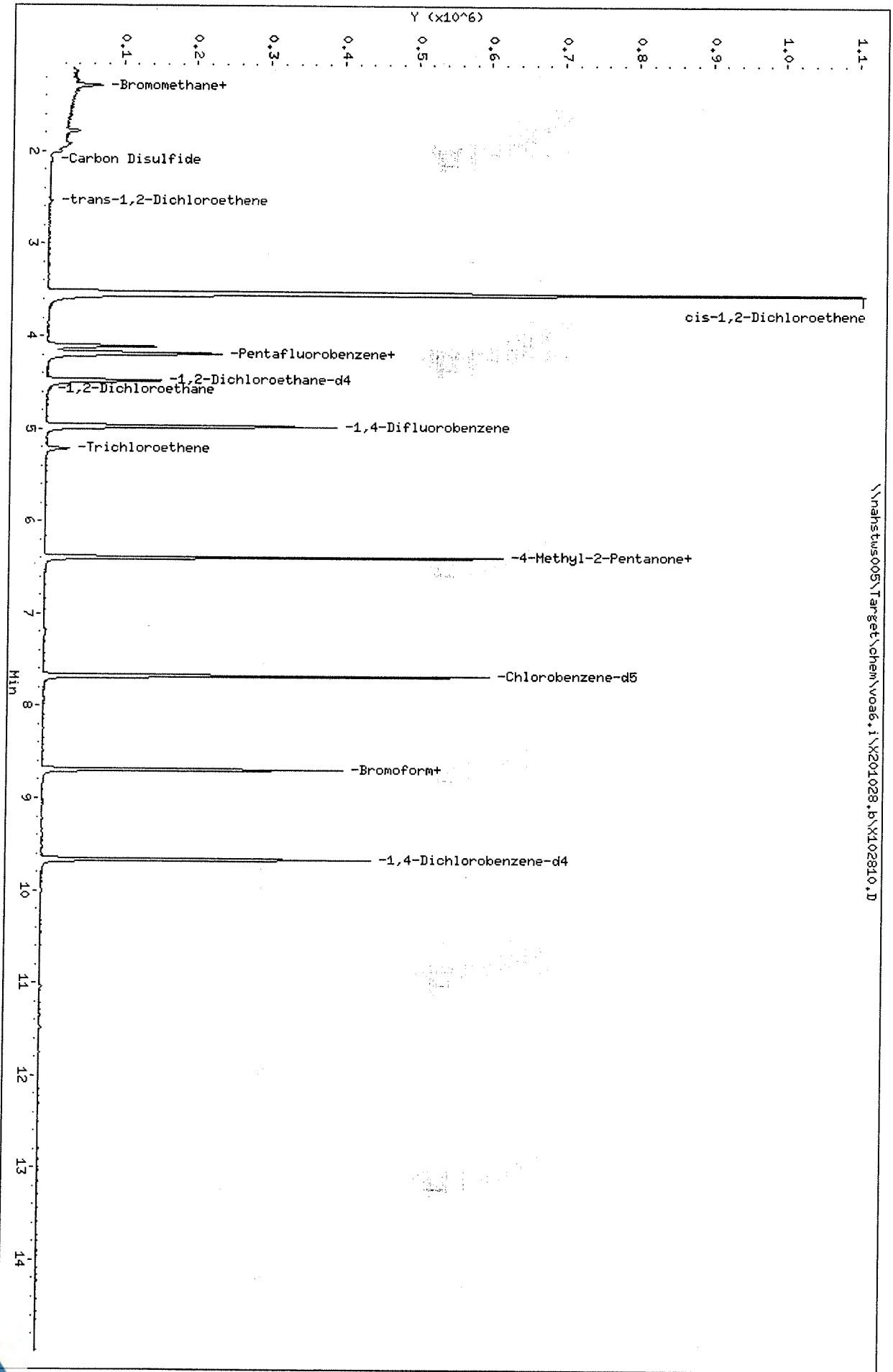
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161490	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	282649	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	240093	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	89313	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	114618	40.5475	40.54
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	102565	44.8685	44.86
$ 30 Dibromofluoromethane	113	4.110	4.111	(0.981)	94280	42.4091	42.40
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	331524	48.9959	48.99
33 1,2-Dichloroethane	62	4.576	4.562	(0.921)	2006	0.65712	0.65(a)
27 cis-1,2-Dichloroethene	96	3.530	3.538	(0.843)	516846	204.524	204.52(A)
38 Trichloroethene	130	5.214	5.214	(1.049)	8899	4.78682	4.78(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D
Date : 28-OCT-2020 14:53
Client ID: HS20101079-02
Sample Info: HS20101079-02;HS20101079-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D

Date : 28-OCT-2020 14:53

Client ID: HS20101079-02

Instrument: voa6.i

Sample Info: HS20101079-02;HS20101079-02;;;

Purge Volume: 5.0

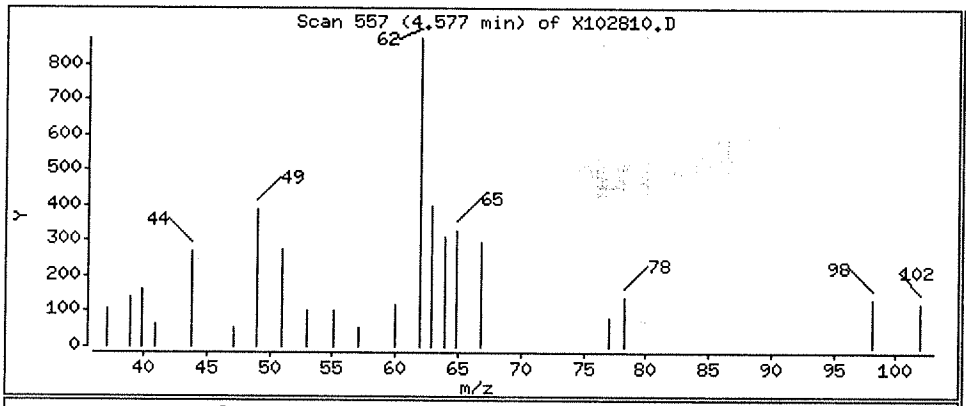
Operator: PC

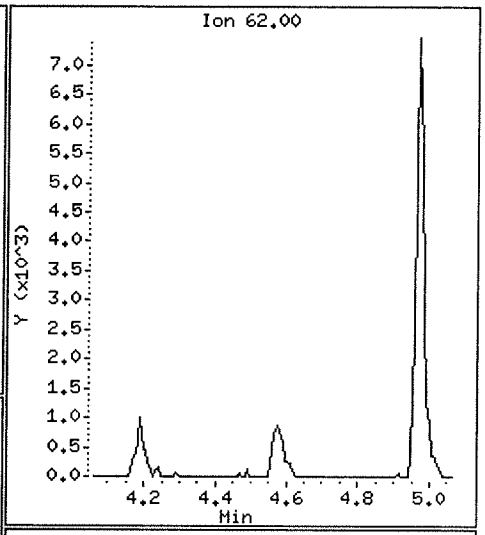
Column phase: DB624

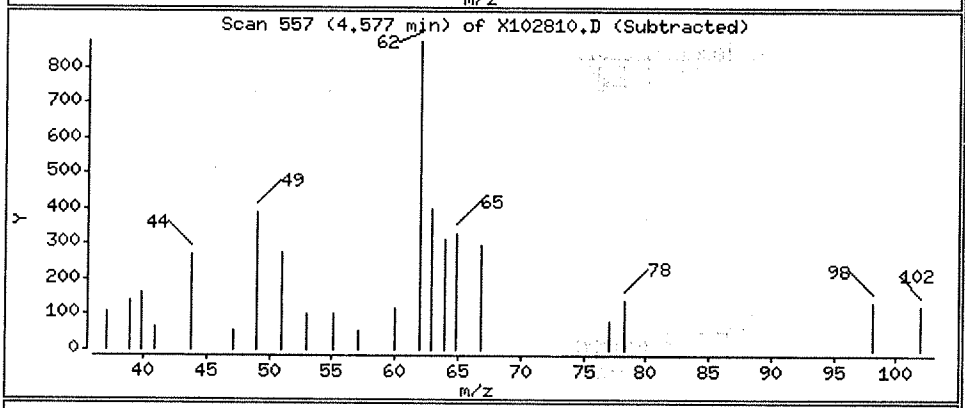
Column diameter: 0.18

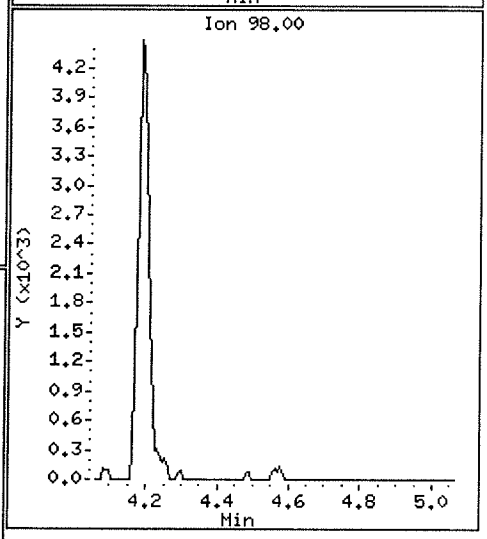
33 1,2-Dichloroethane

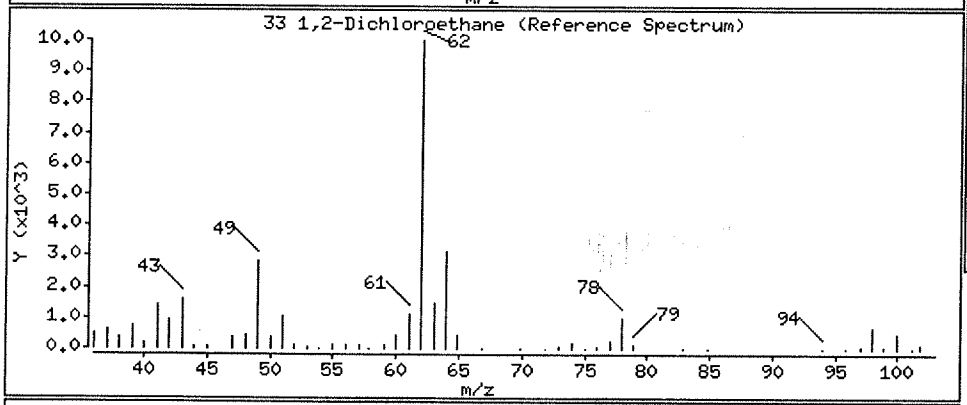
Concentration: 0.65 ug/l

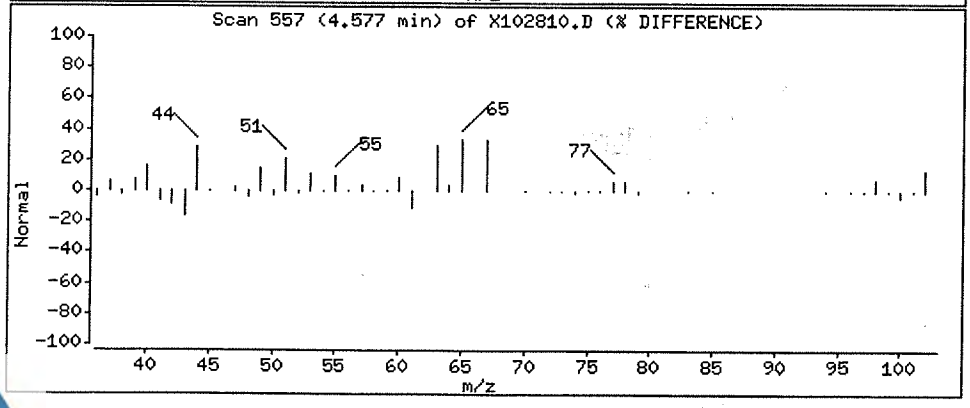












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D

Date : 28-OCT-2020 14:53

Client ID: HS20101079-02

Instrument: voa6.i

Sample Info: HS20101079-02;HS20101079-02;;;

Purge Volume: 5.0

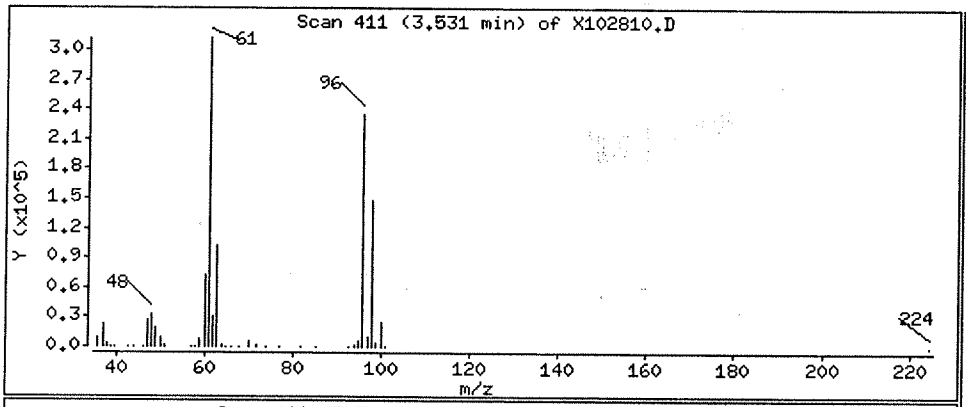
Operator: PC

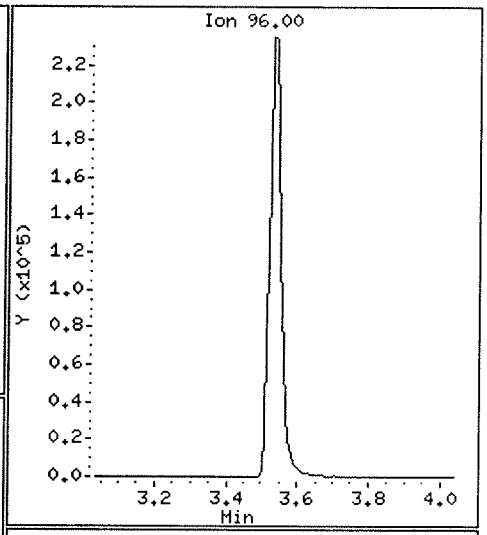
Column phase: DB624

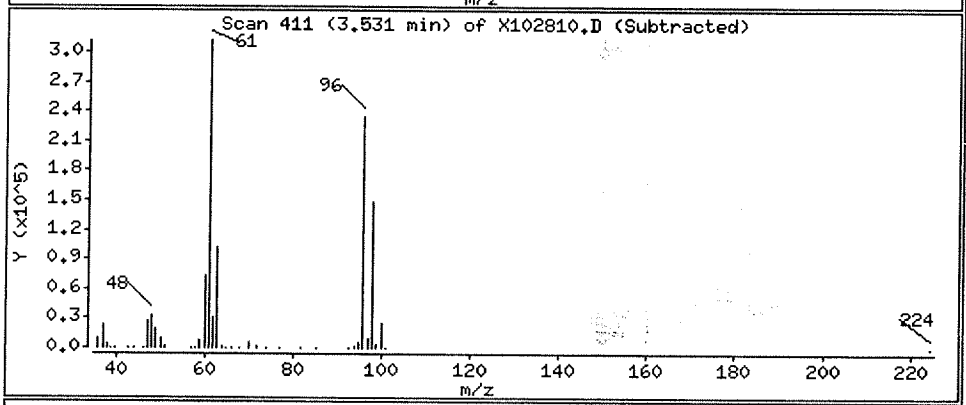
Column diameter: 0.18

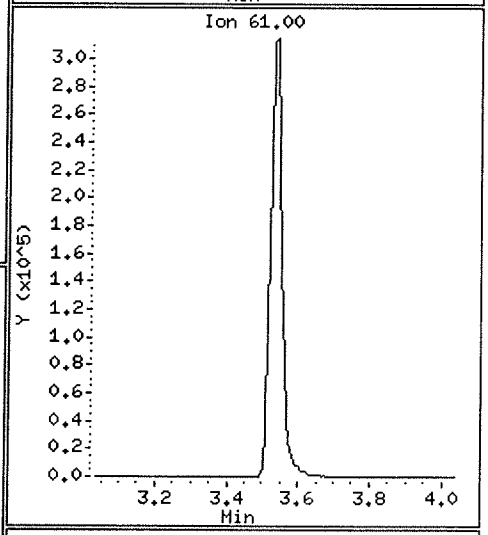
27 cis-1,2-Dichloroethene

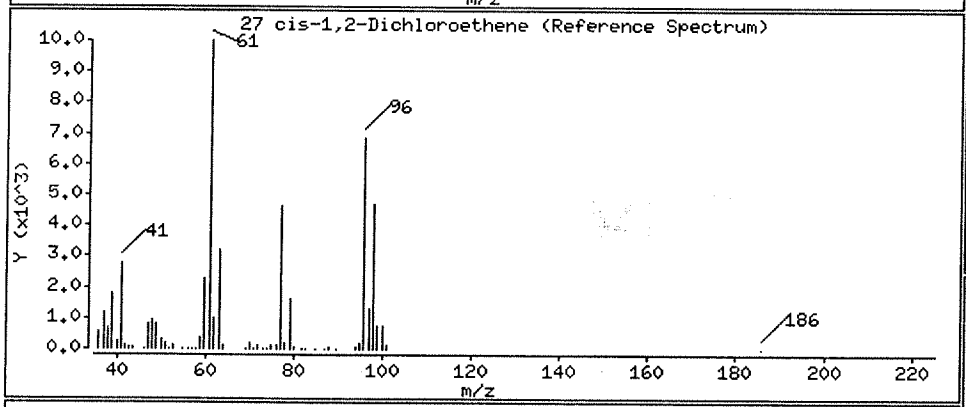
Concentration: 204.52 ug/l

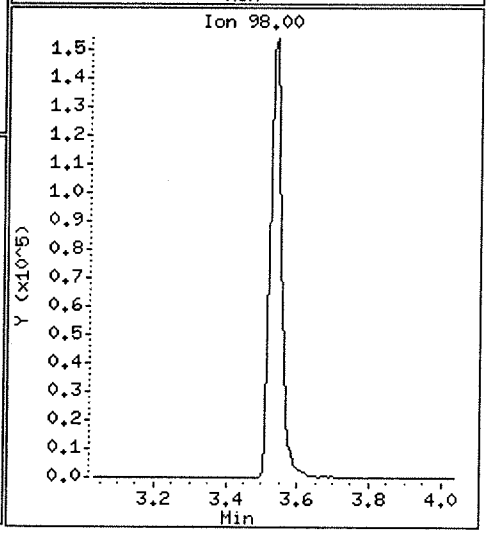


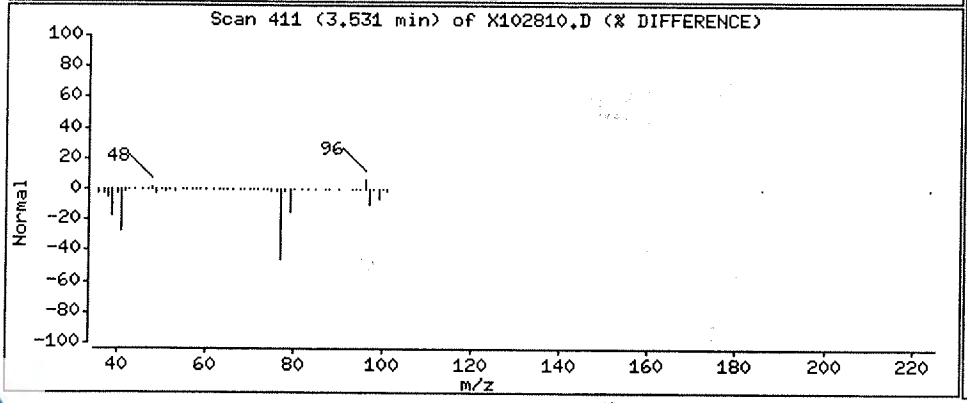












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102810.D

Date : 28-OCT-2020 14:53

Client ID: HS20101079-02

Instrument: voa6.i

Sample Info: HS20101079-02;HS20101079-02;;;

Purge Volume: 5.0

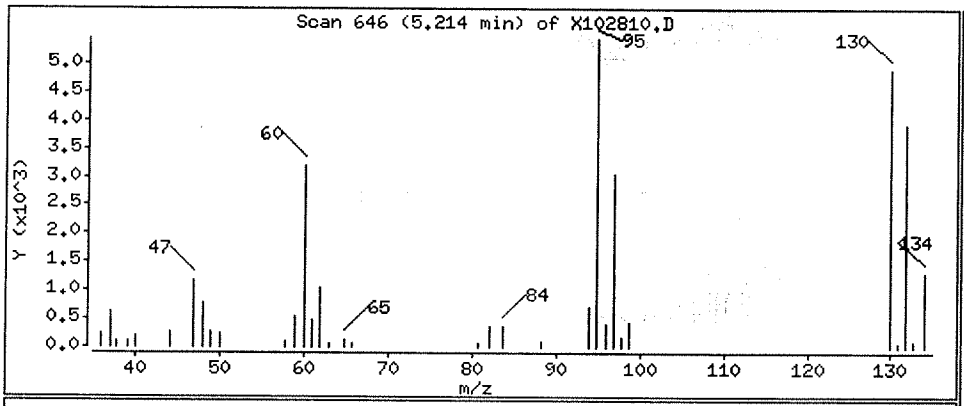
Operator: PC

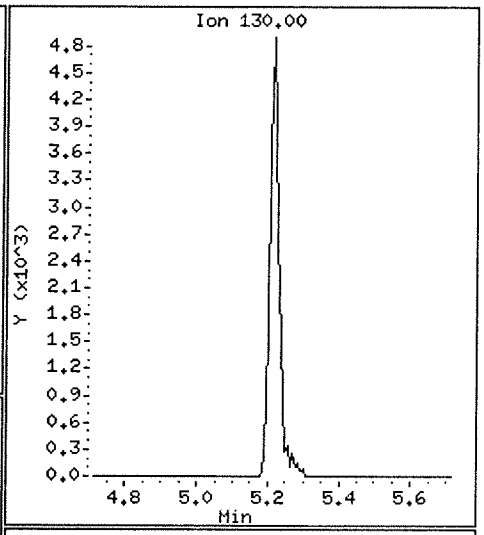
Column phase: DB624

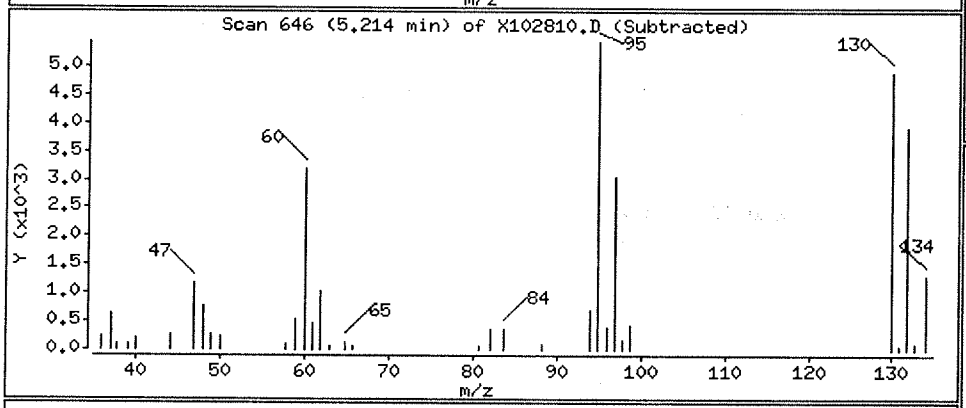
Column diameter: 0.18

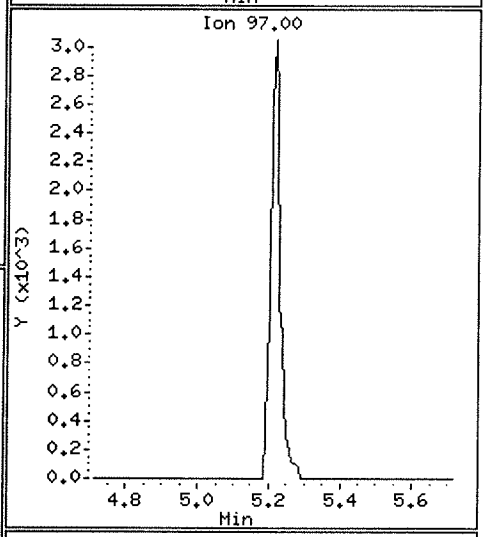
38 Trichloroethene

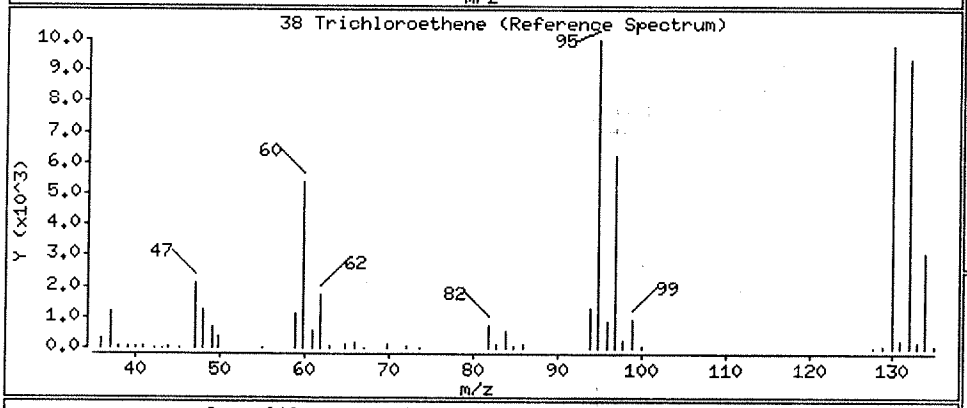
Concentration: 4.78 ug/l

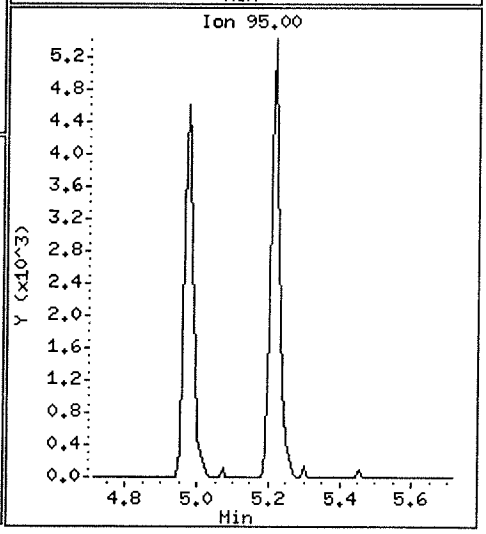


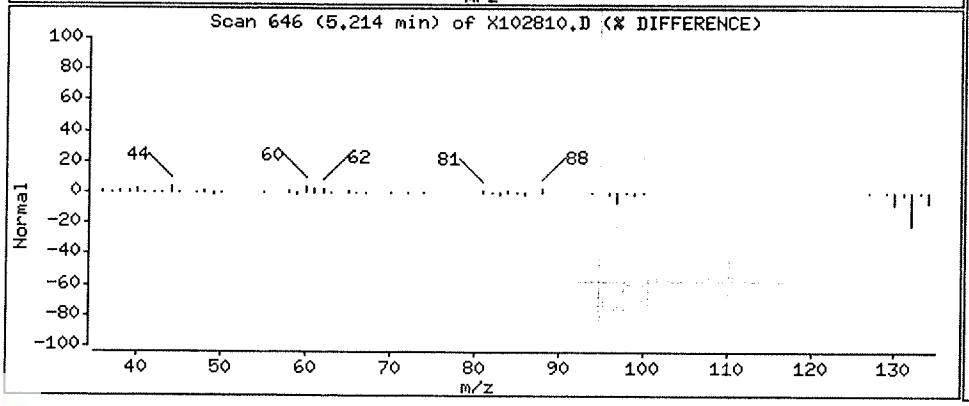












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102811.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102811.D
Lab Smp Id: HS20101079-03 Client Smp ID: HS20101079-03
Inj Date : 28-OCT-2020 15:14
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-03;HS20101079-03;;;
Misc Info : HS18090001;WATER;0;250;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 11
Dil Factor: 250.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

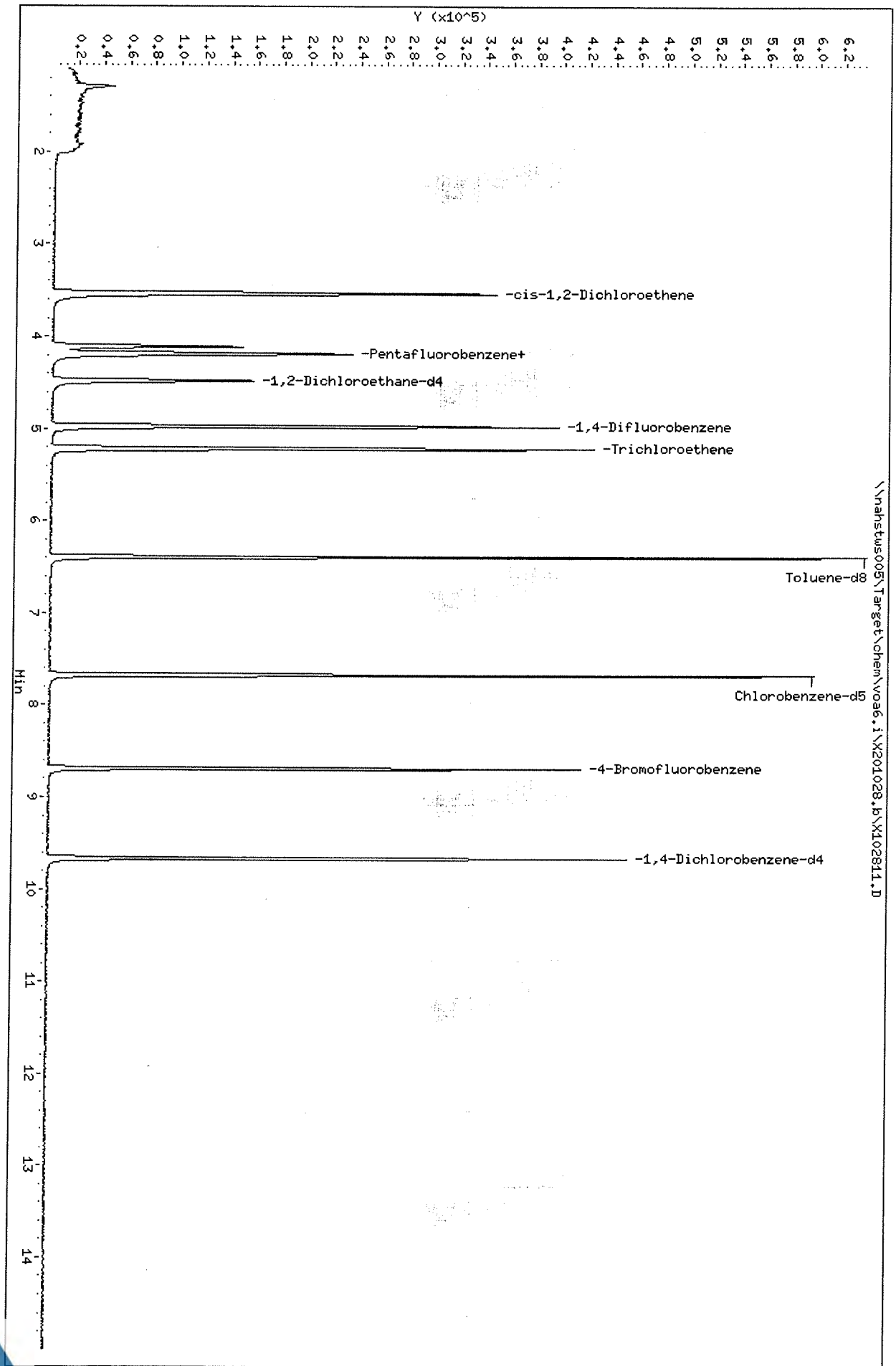
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	250.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	159290	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	289922	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	247725	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	92701	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	115739	41.5089	41.50
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	103724	44.0171	44.01
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	92733	42.2894	42.28
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	338620	48.5201	48.52
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.844)	155454	62.3653	15591.32
38 Trichloroethene	130	5.214	5.214	(1.049)	110244	57.8133	14453.31

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102811.D
Date : 28-OCT-2020 15:14
Client ID: HS20101079-03
Sample Info: HS20101079-03;HS20101079-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



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Date : 28-OCT-2020 15:14

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

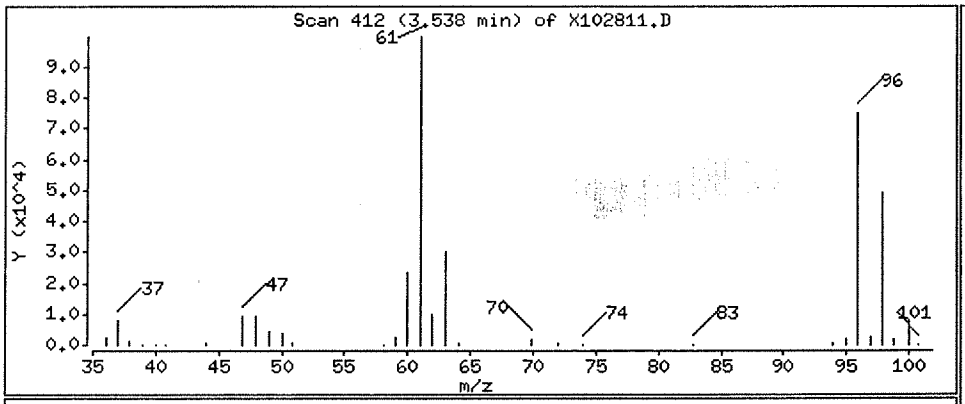
Operator: PC

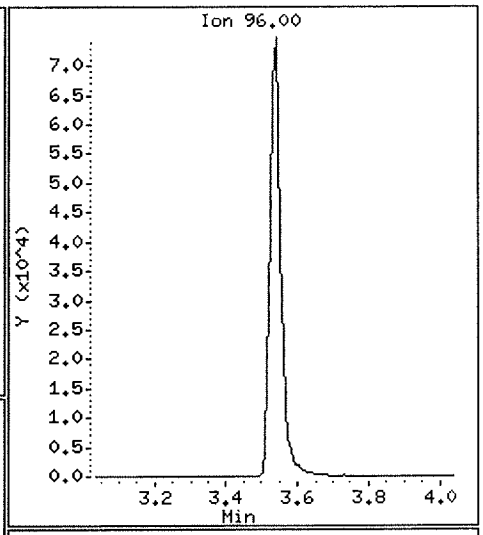
Column phase: DB624

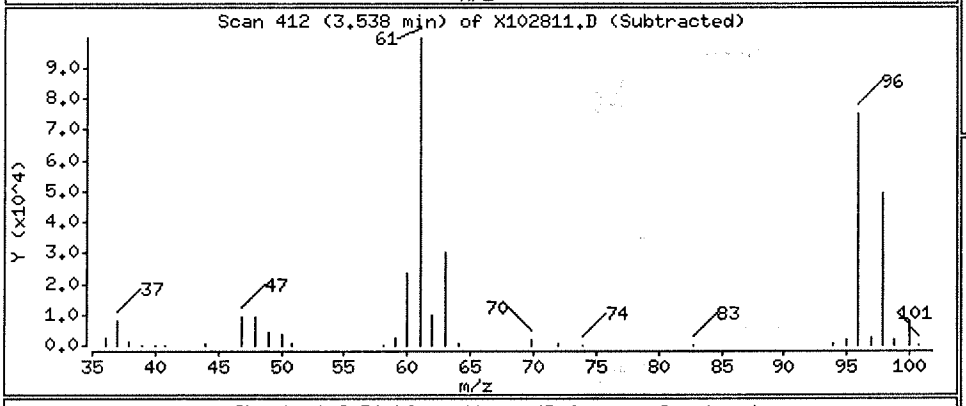
Column diameter: 0.18

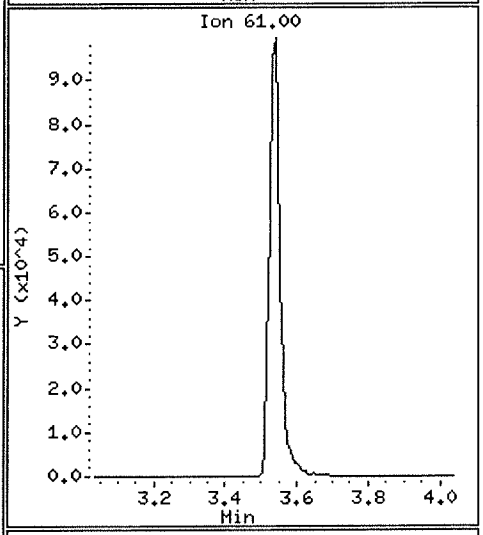
27 cis-1,2-Dichloroethene

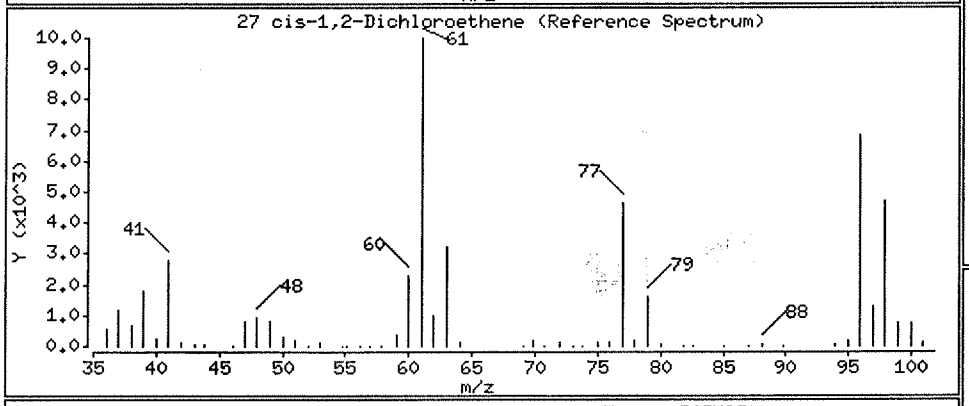
Concentration: 15591.32 ug/l

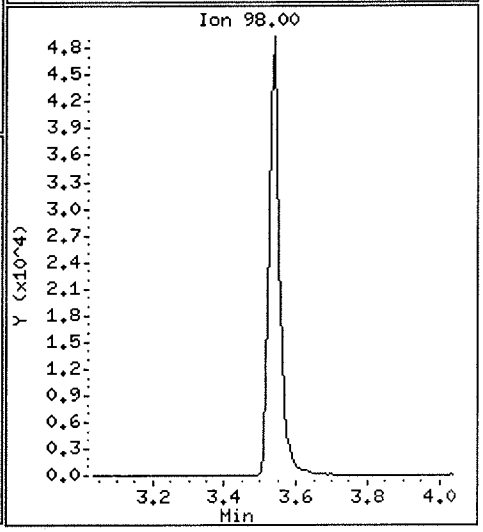


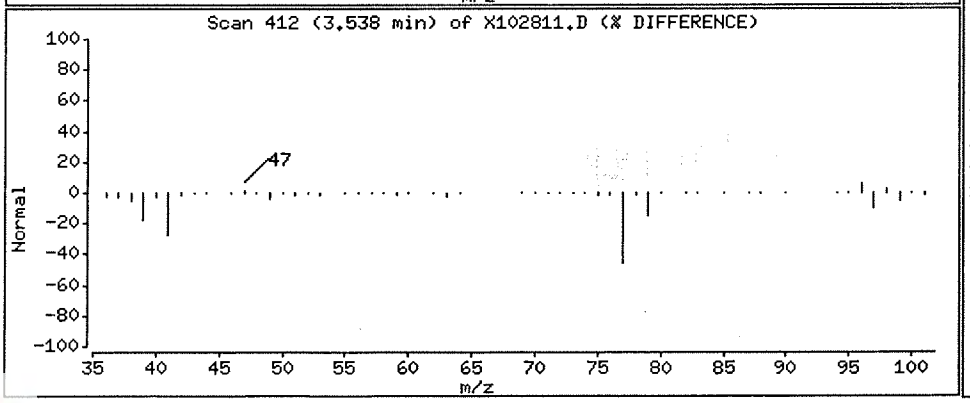












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102811.D

Date : 28-OCT-2020 15:14

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

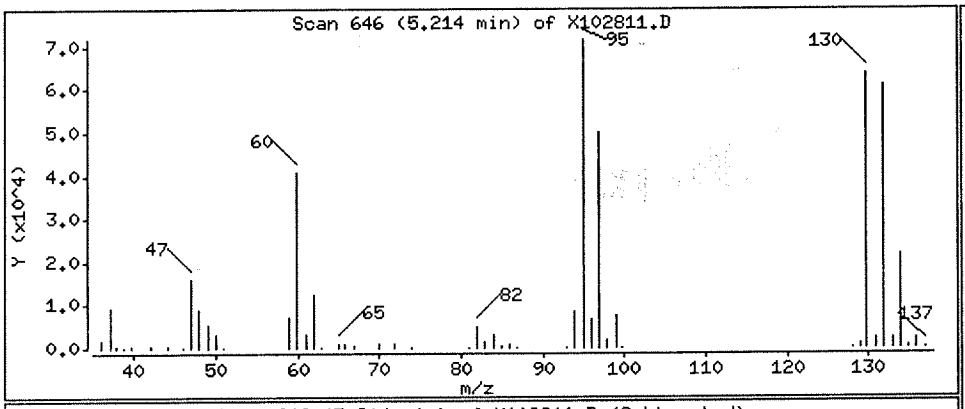
Operator: PC

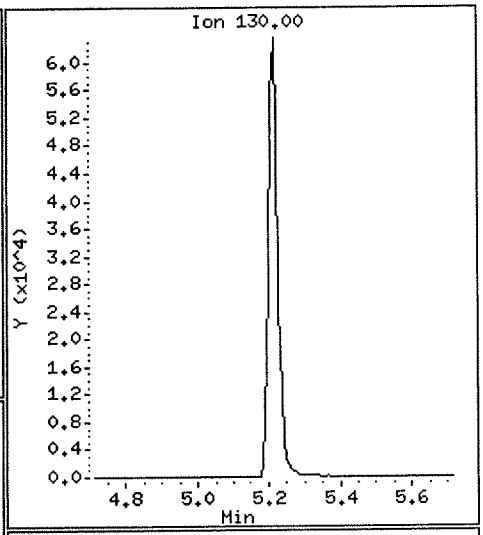
Column phase: DB624

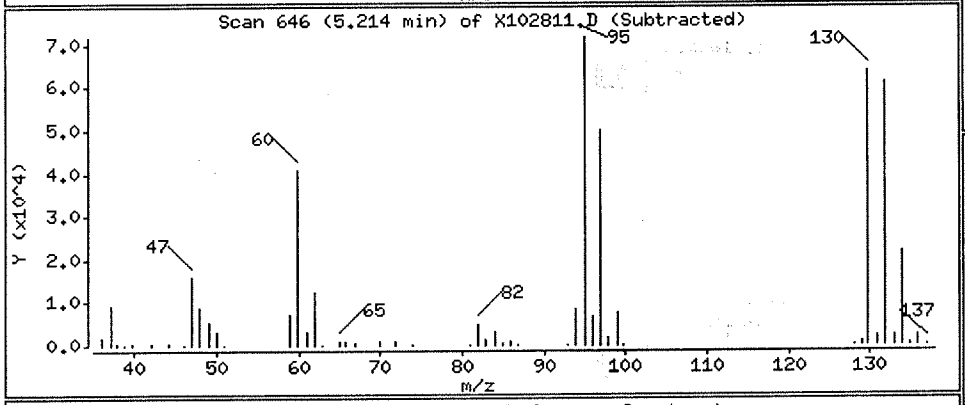
Column diameter: 0.18

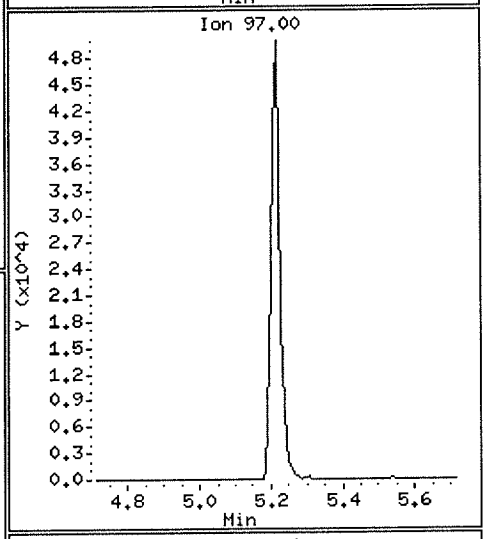
38 Trichloroethene

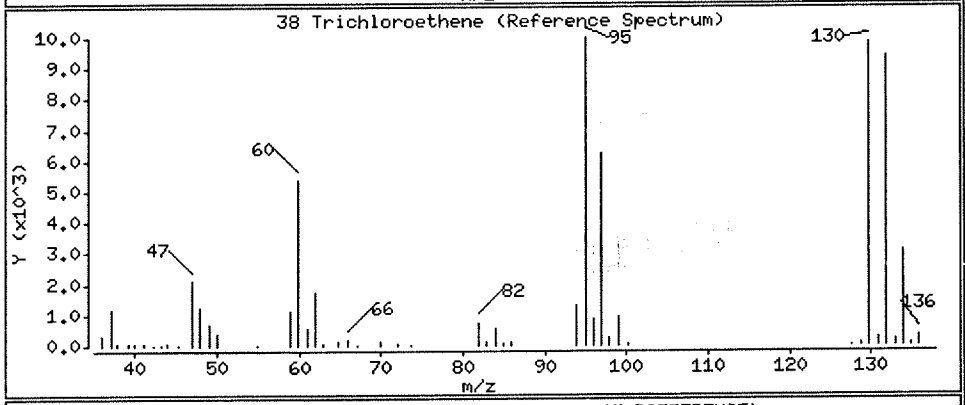
Concentration: 14453.31 ug/l

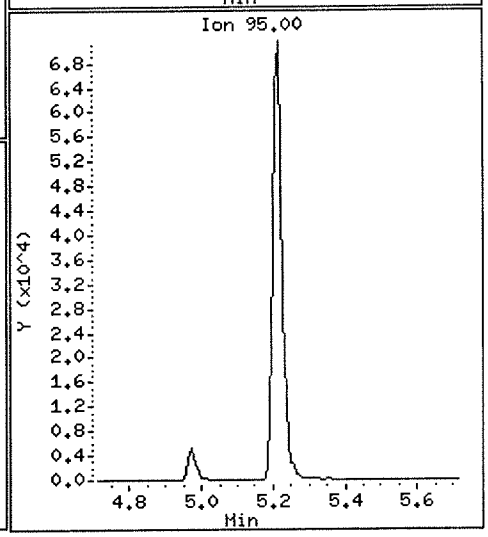


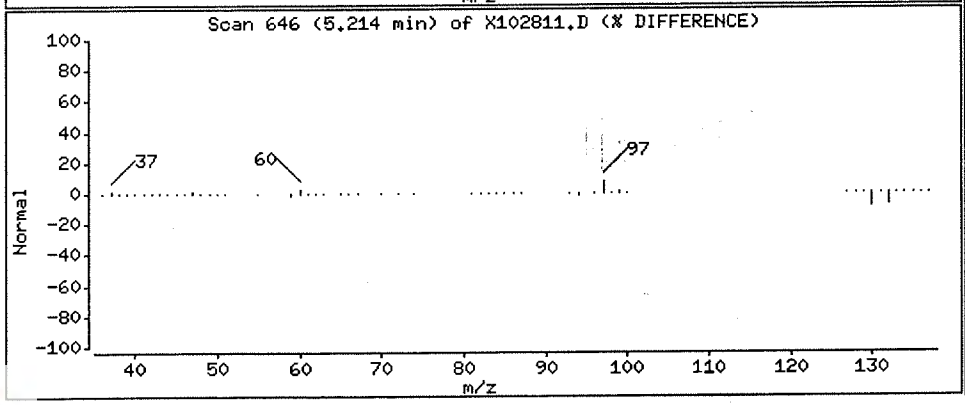












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D
Lab Smp Id: HS20101079-03 Client Smp ID: HS20101079-03
Inj Date : 28-OCT-2020 15:35
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-03;HS20101079-03;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 12
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

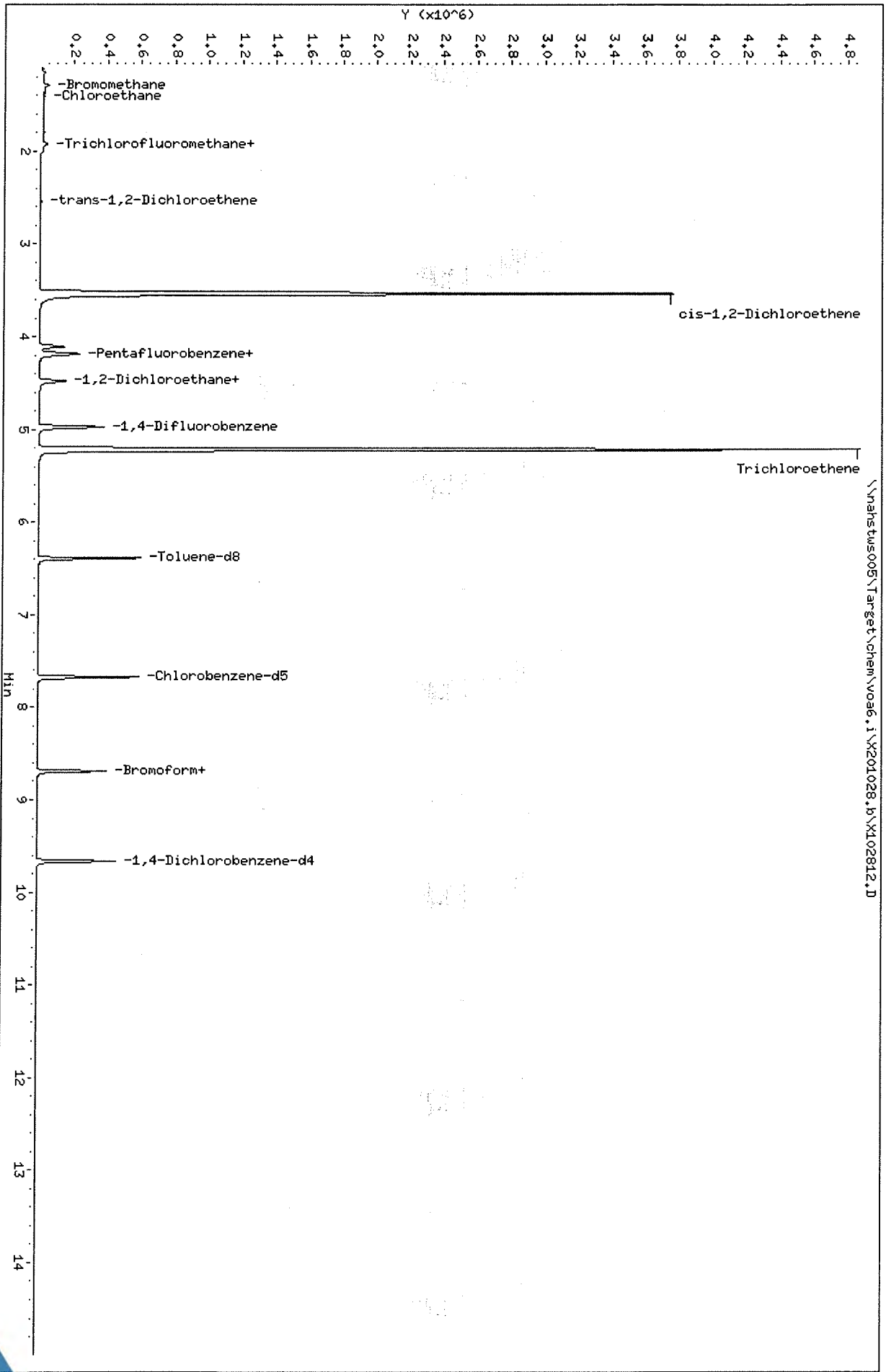
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161154	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	277202	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	242624	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	93735	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	114357	40.5396	40.53(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	102635	44.4502	44.45
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	97039	43.7412	43.74
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	328067	48.0149	48.01
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	5086	1.29580	32.39(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	5300	1.77028	44.25(a)
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	1641508	650.926	16273.14(A)
38 Trichloroethene	130	5.214	5.214	(1.049)	1241000	680.658	17016.45(A)
5 Vinyl Chloride	62	1.152	1.145	(0.275)	11226	2.26589	56.64(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D
Date : 28-OCT-2020 15:35
Client ID: HS20101079-03
Sample Info: HS20101079-03,HS20101079-03,,,
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D

Date : 28-OCT-2020 15:35

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

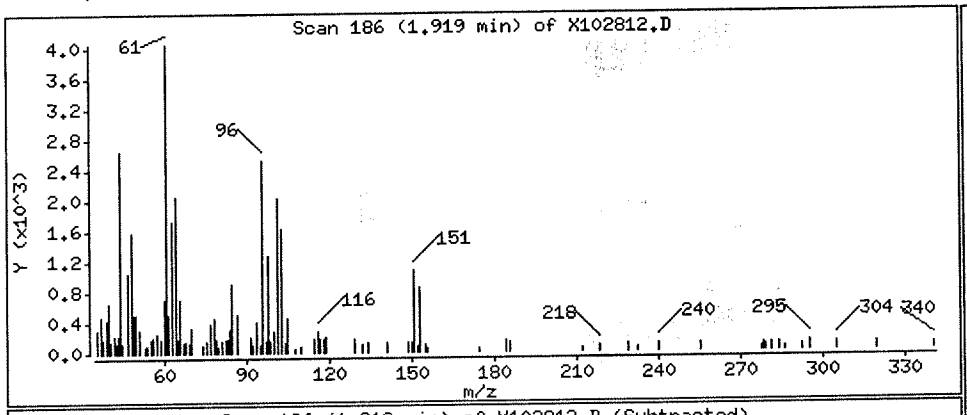
Operator: PC

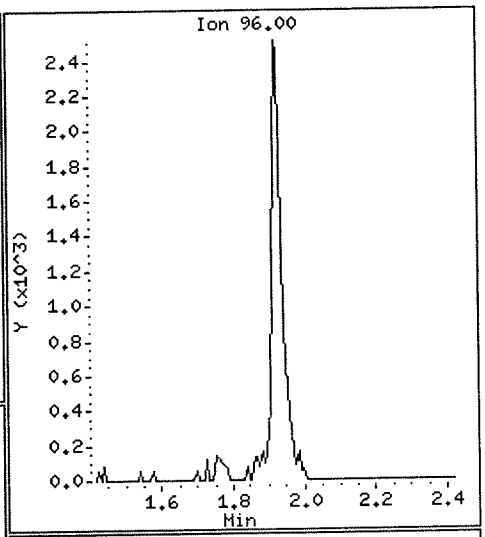
Column phase: DB624

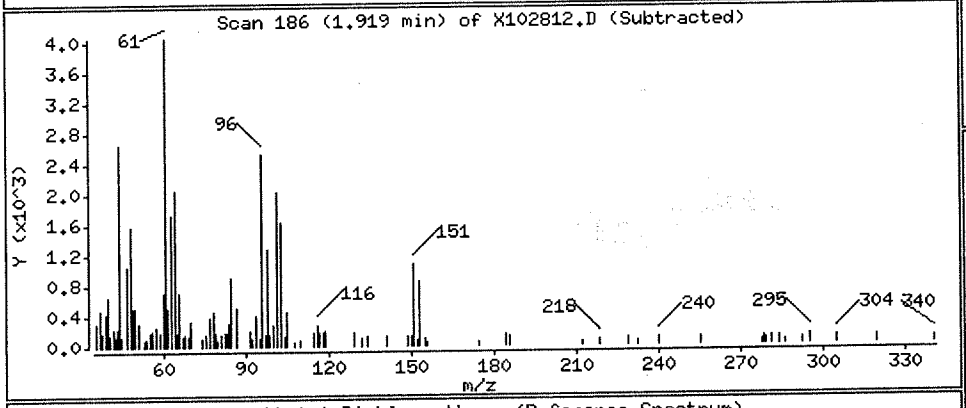
Column diameter: 0.18

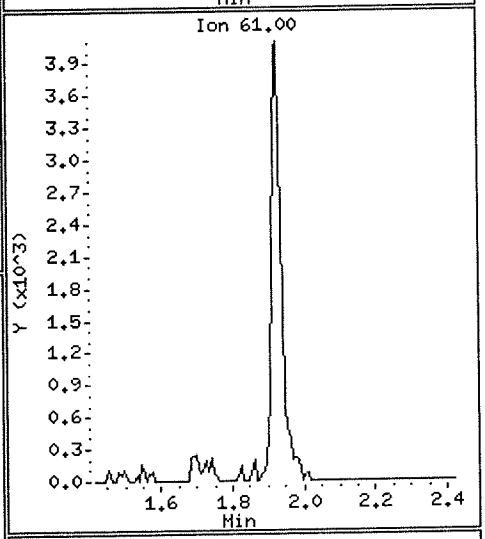
11 1,1-Dichloroethene

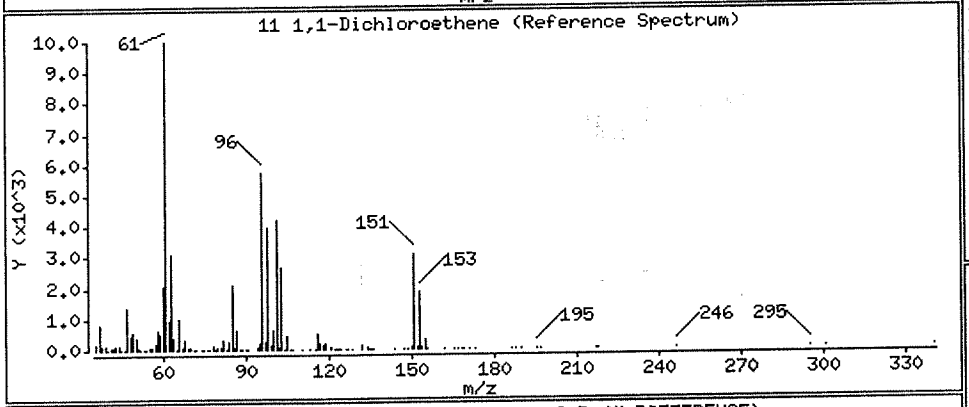
Concentration: 32.39 ug/l

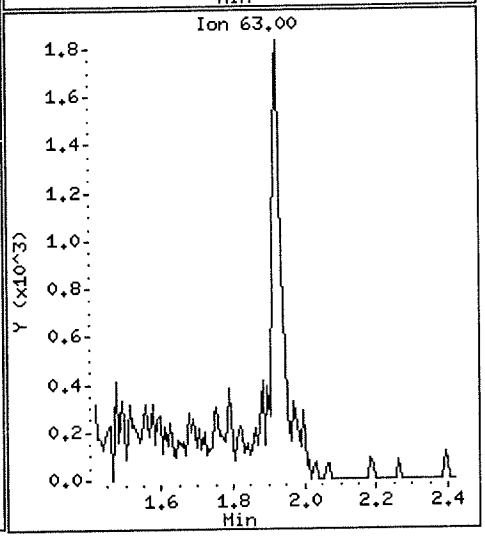


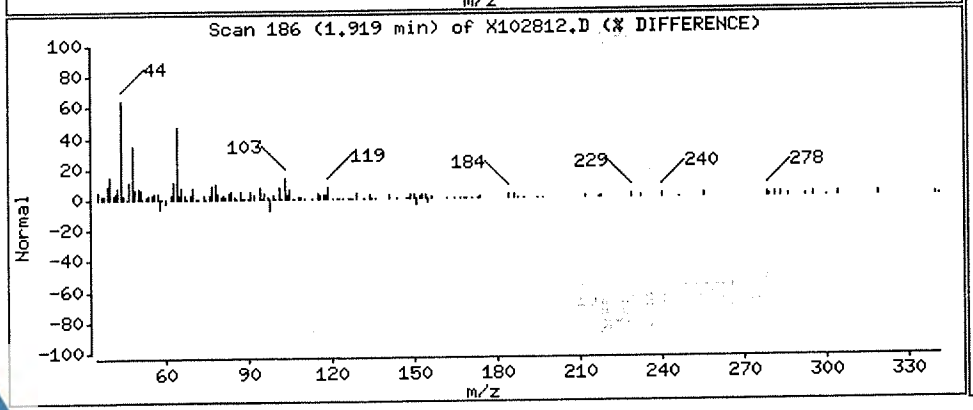












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D

Date : 28-OCT-2020 15:35

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

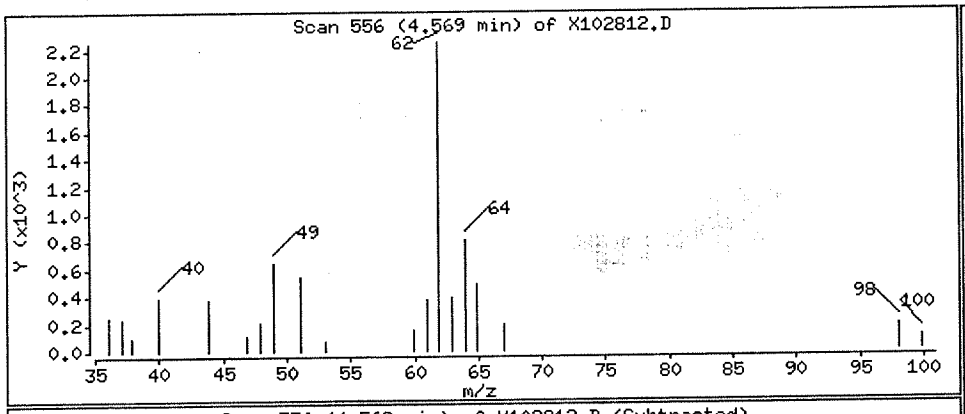
Operator: PC

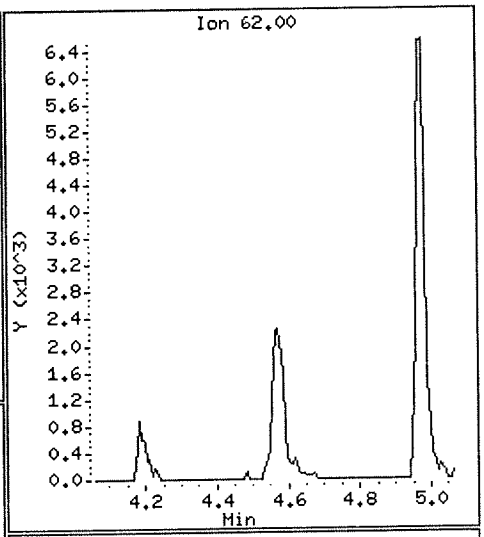
Column phase: DB624

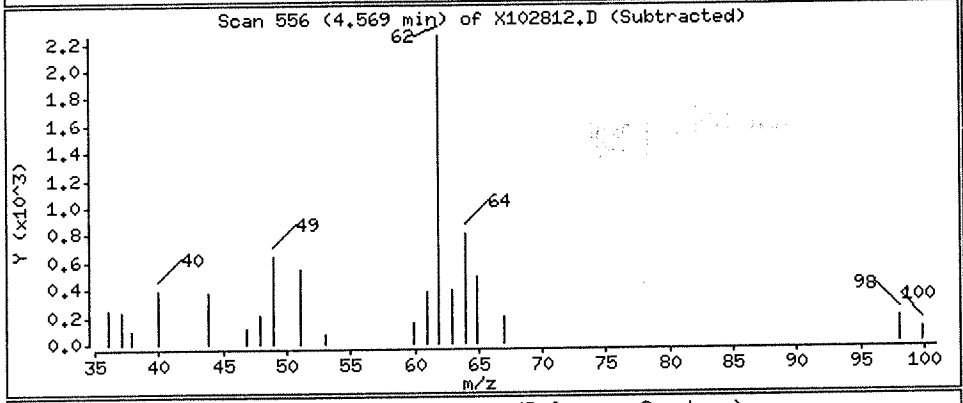
Column diameter: 0.18

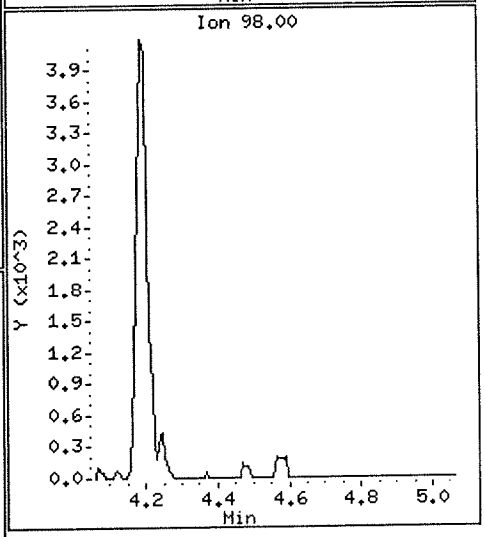
33 1,2-Dichloroethane

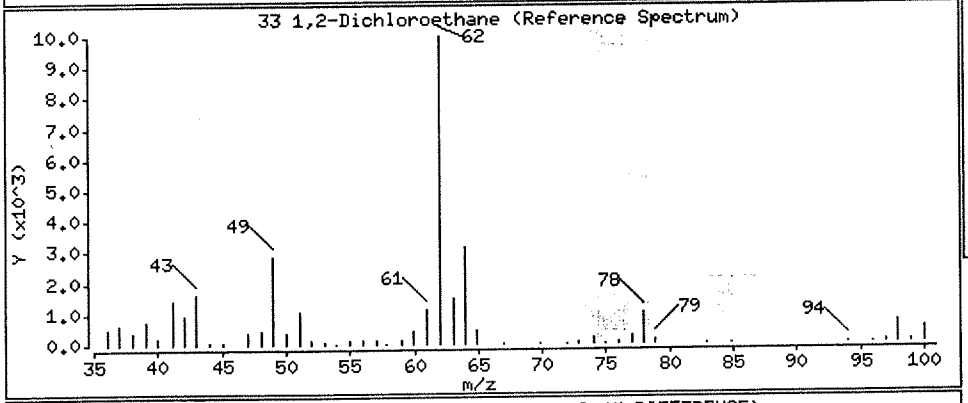
Concentration: 44.25 ug/l

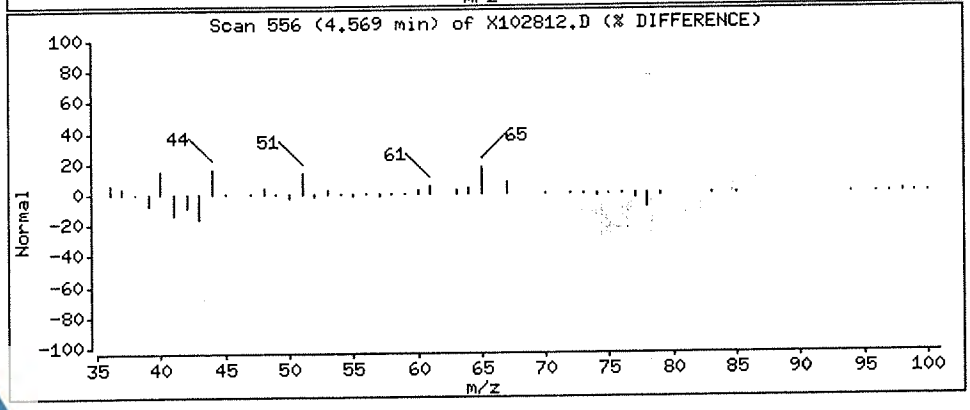












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D

Date : 28-OCT-2020 15:35

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

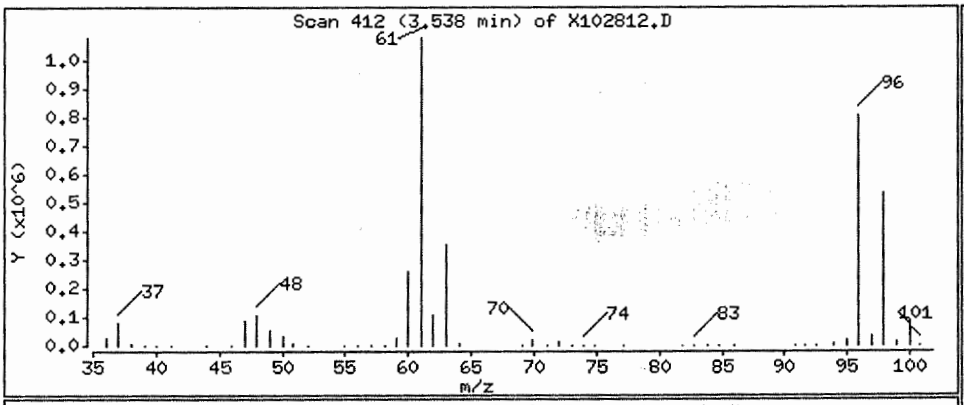
Operator: PC

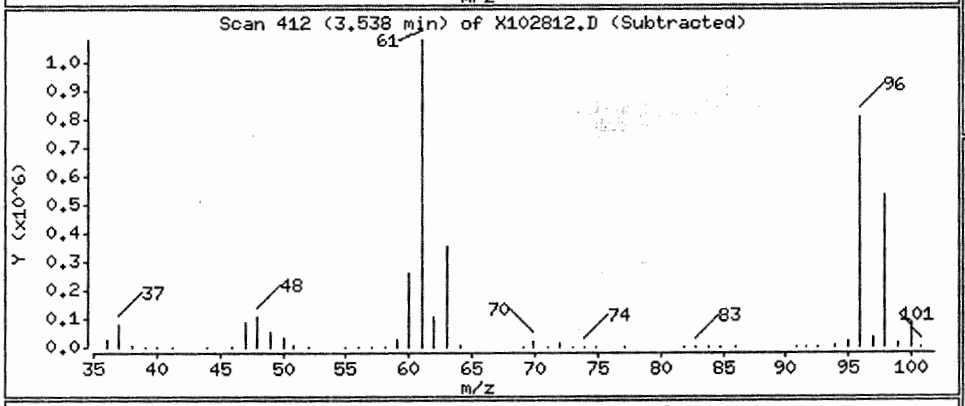
Column phase: DB624

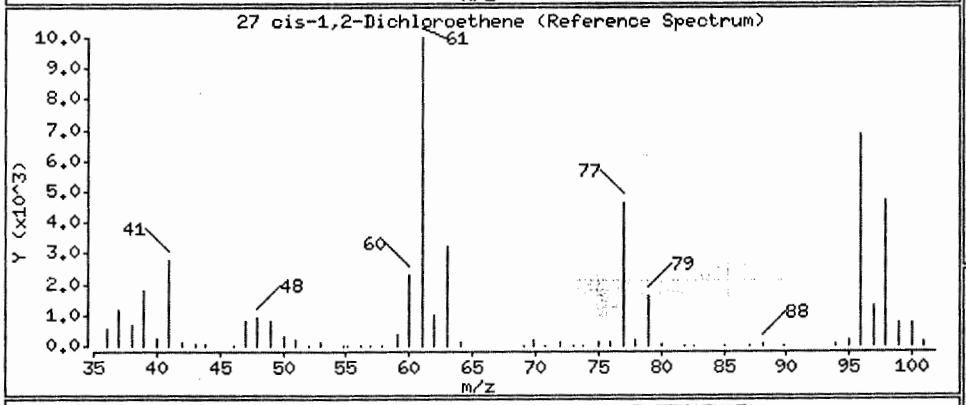
Column diameter: 0.18

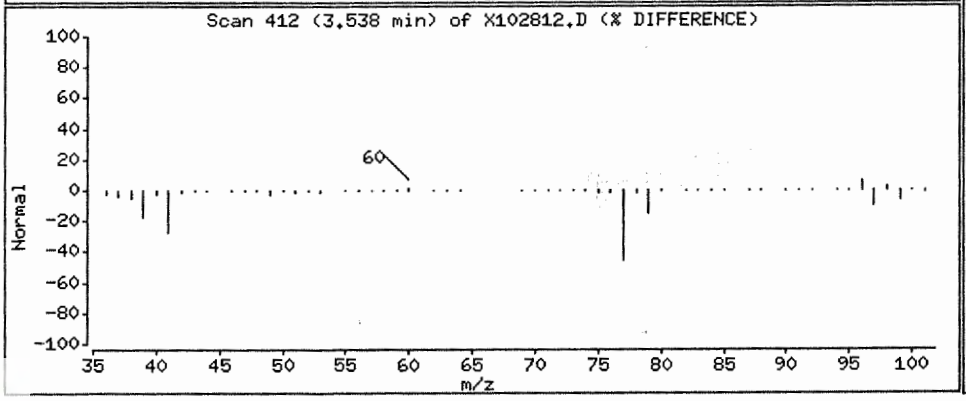
27 cis-1,2-Dichloroethene

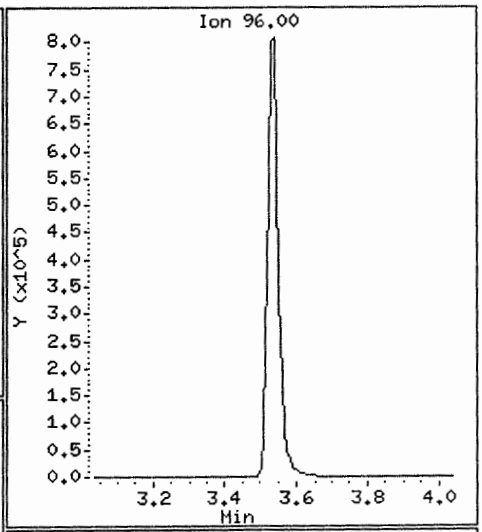
Concentration: 16273.14 ug/l

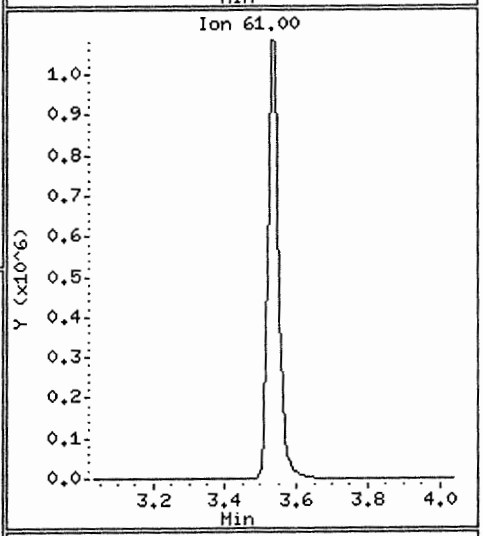


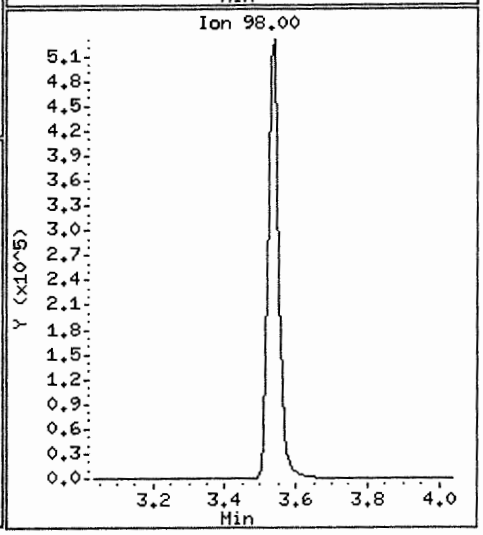












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D

Date : 28-OCT-2020 15:35

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

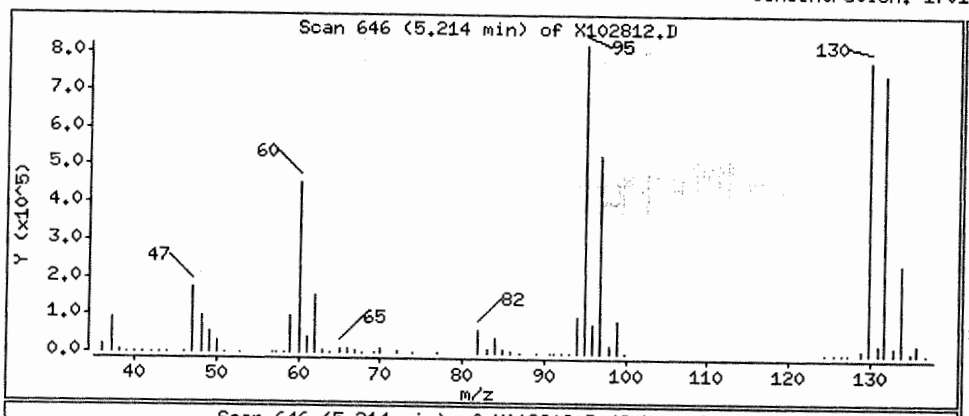
Operator: PC

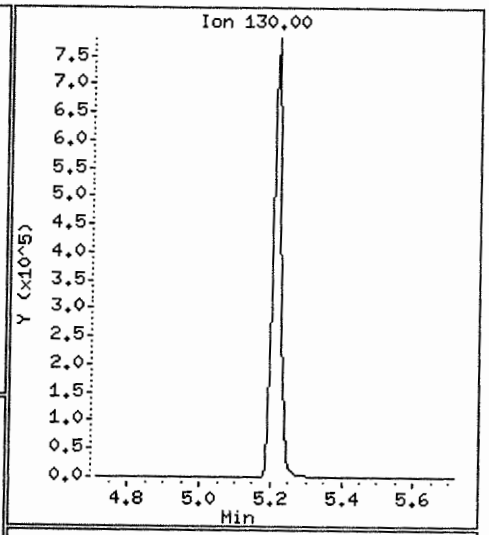
Column phase: DB624

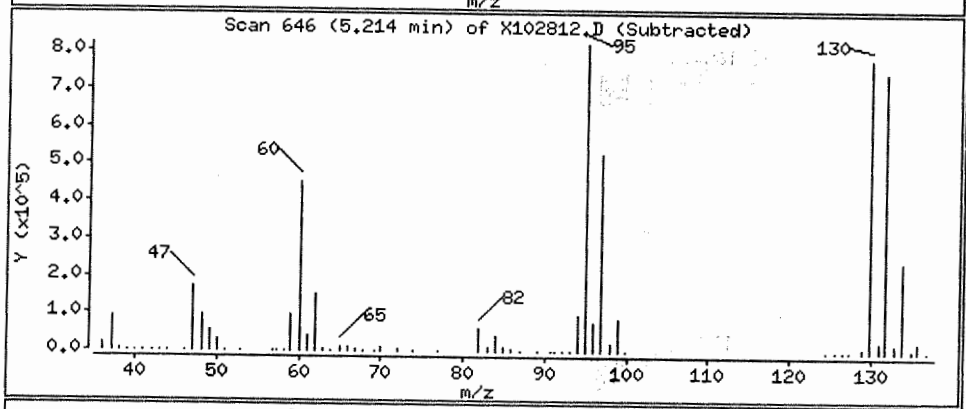
Column diameter: 0.18

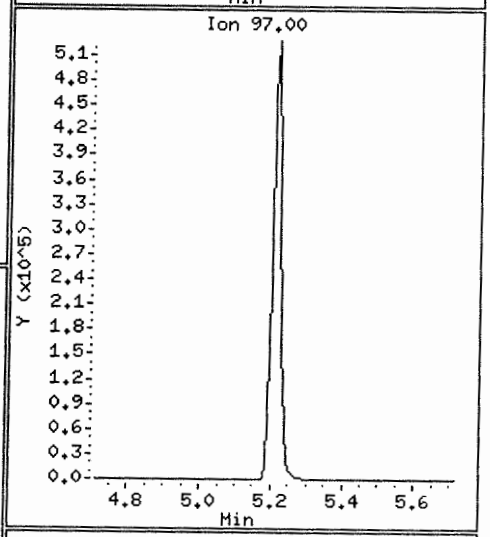
38 Trichloroethene

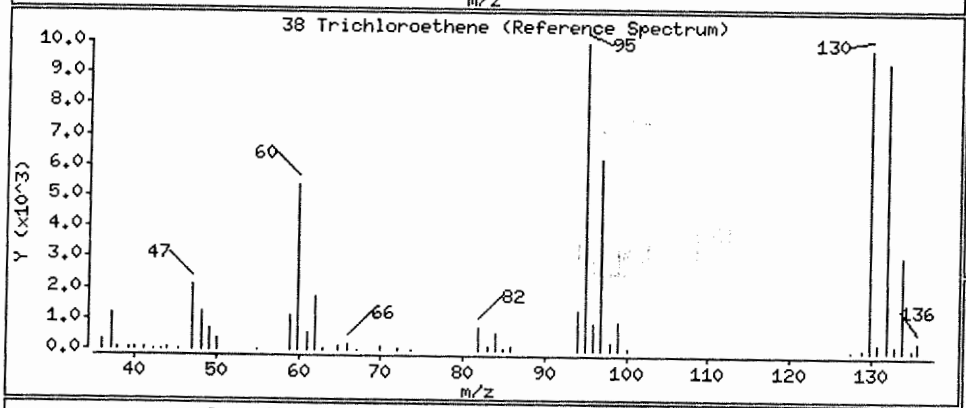
Concentration: 17016.45 ug/l

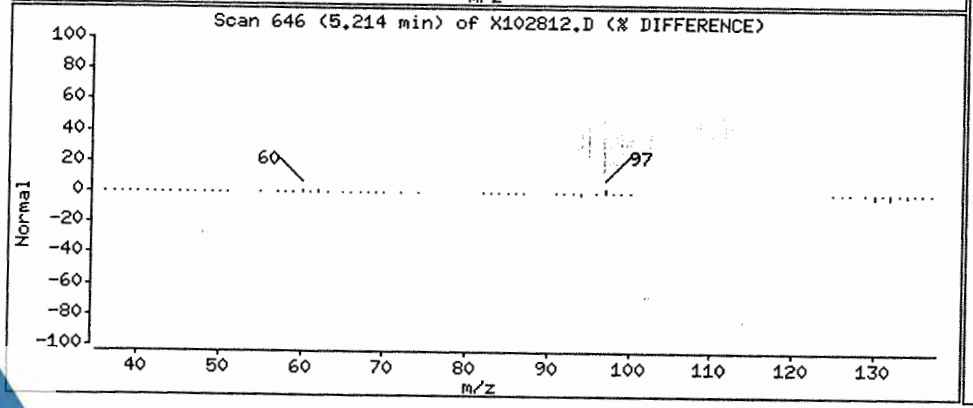


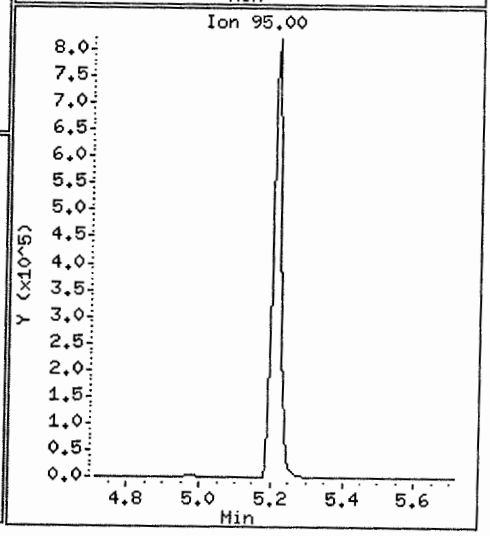












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D

Date : 28-OCT-2020 15:35

Client ID: HS20101079-03

Instrument: voa6.i

Sample Info: HS20101079-03;HS20101079-03;;;

Purge Volume: 5.0

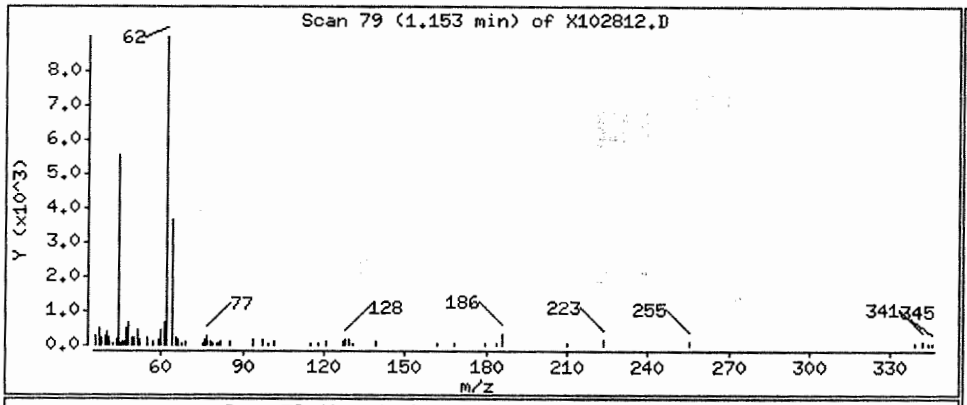
Operator: PC

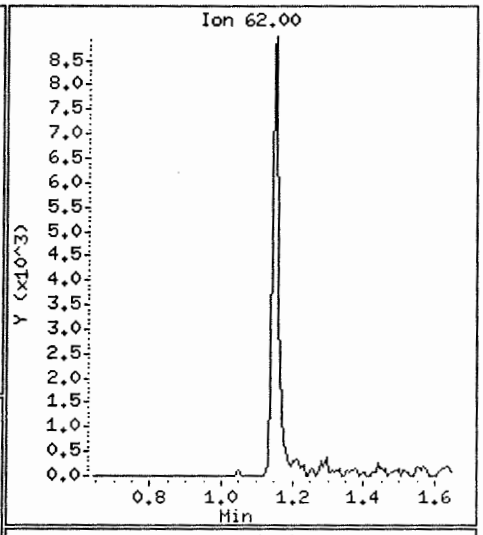
Column phase: DB624

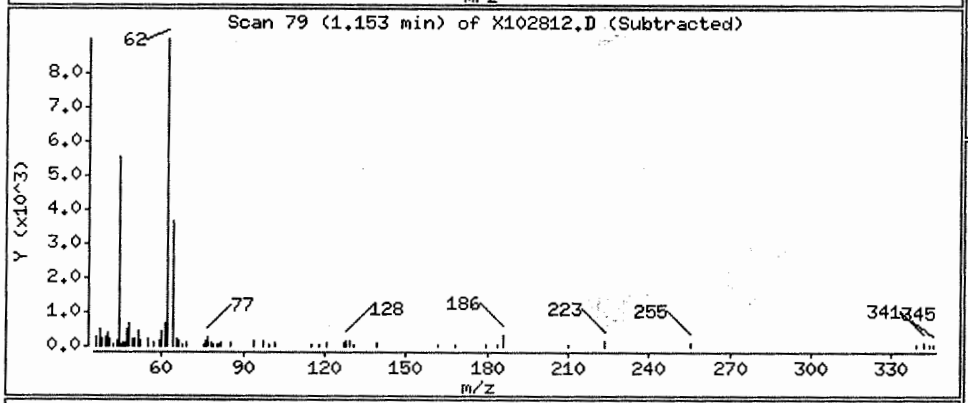
Column diameter: 0.18

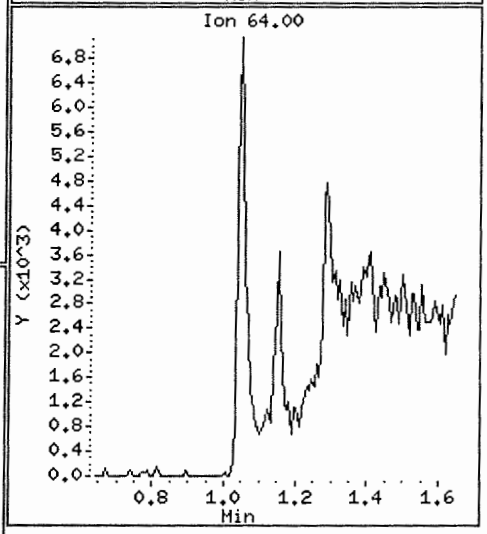
5 Vinyl Chloride

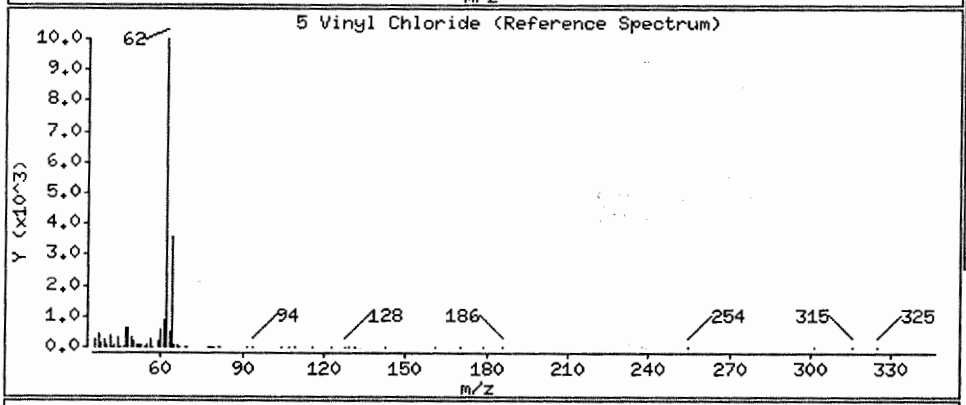
Concentration: 56.64 ug/l

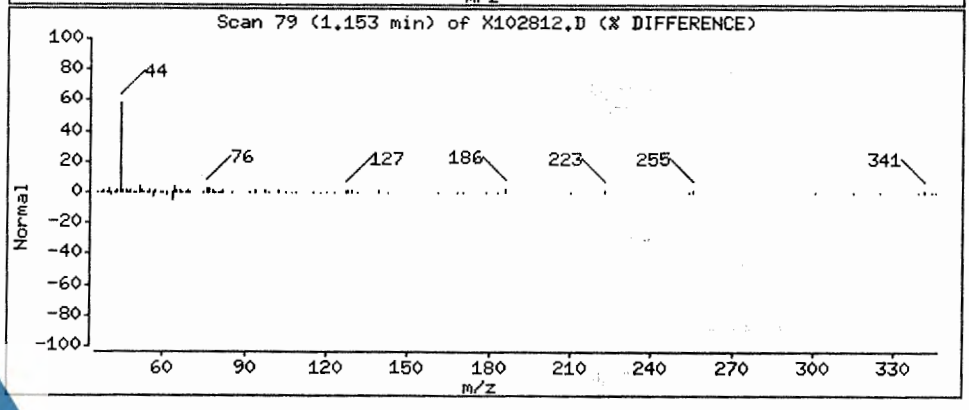






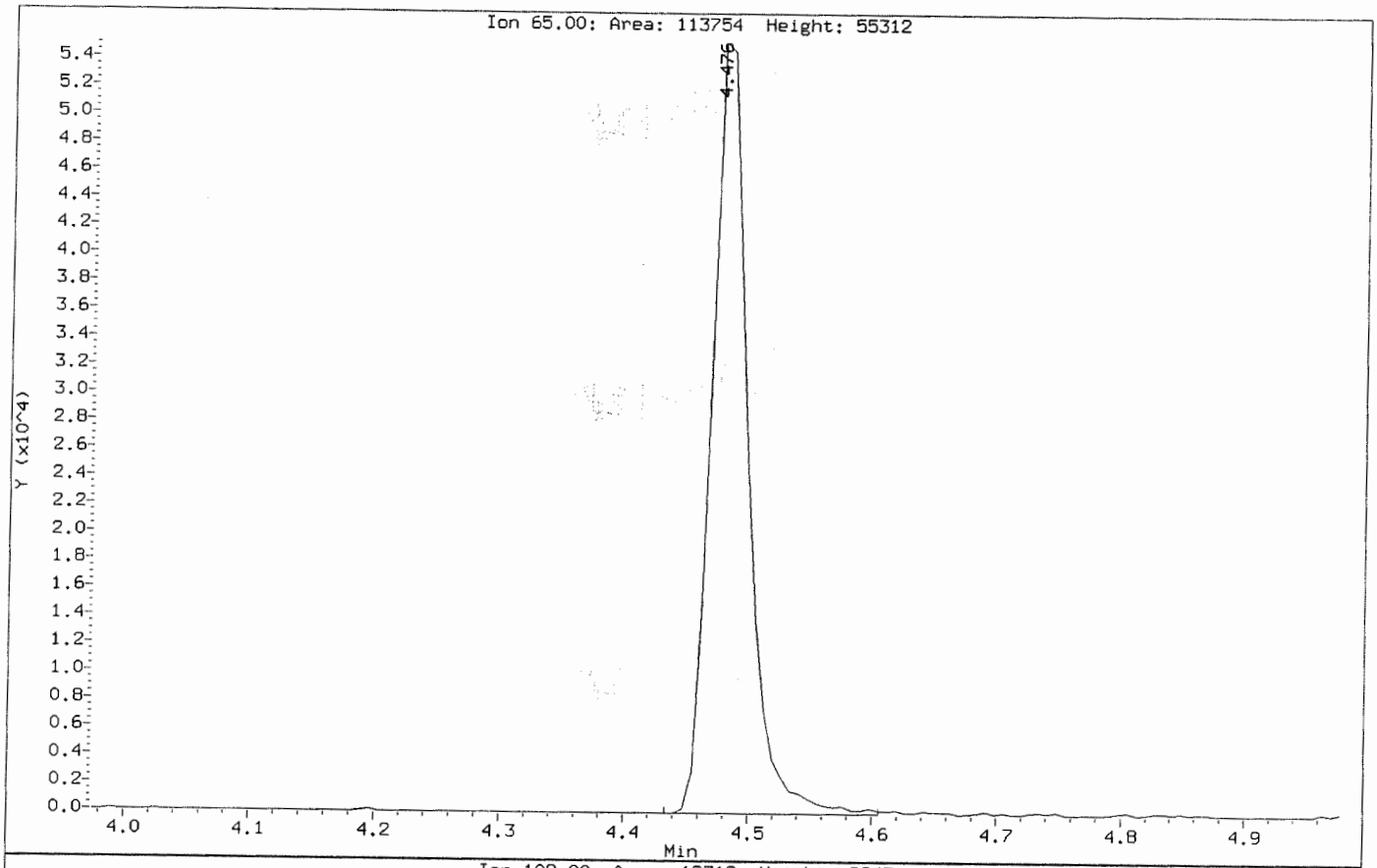


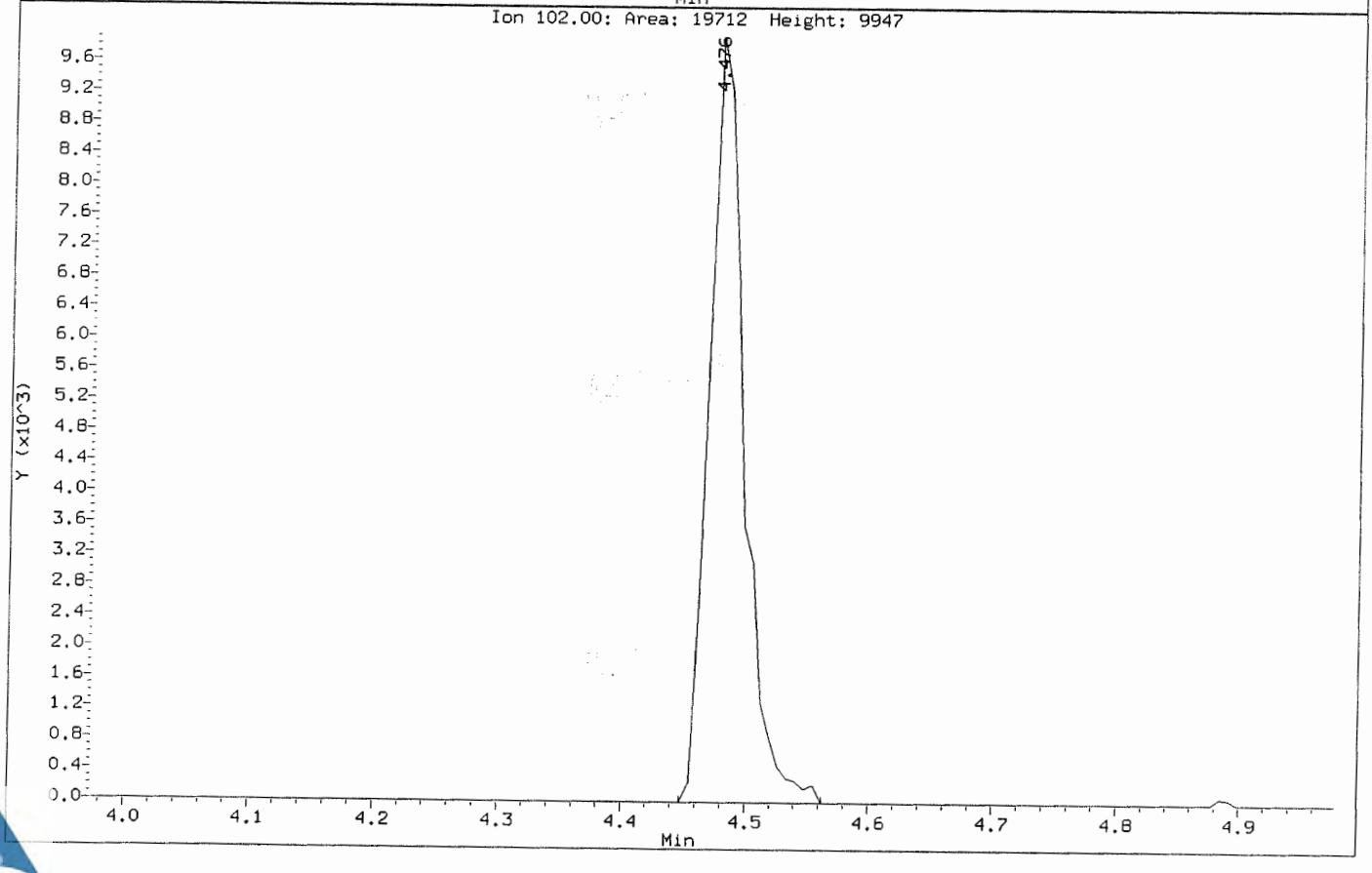




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102812.D
Injection Date: 28-OCT-2020 15:35
Instrument: voa6.i
Client Sample ID: HS20101079-03

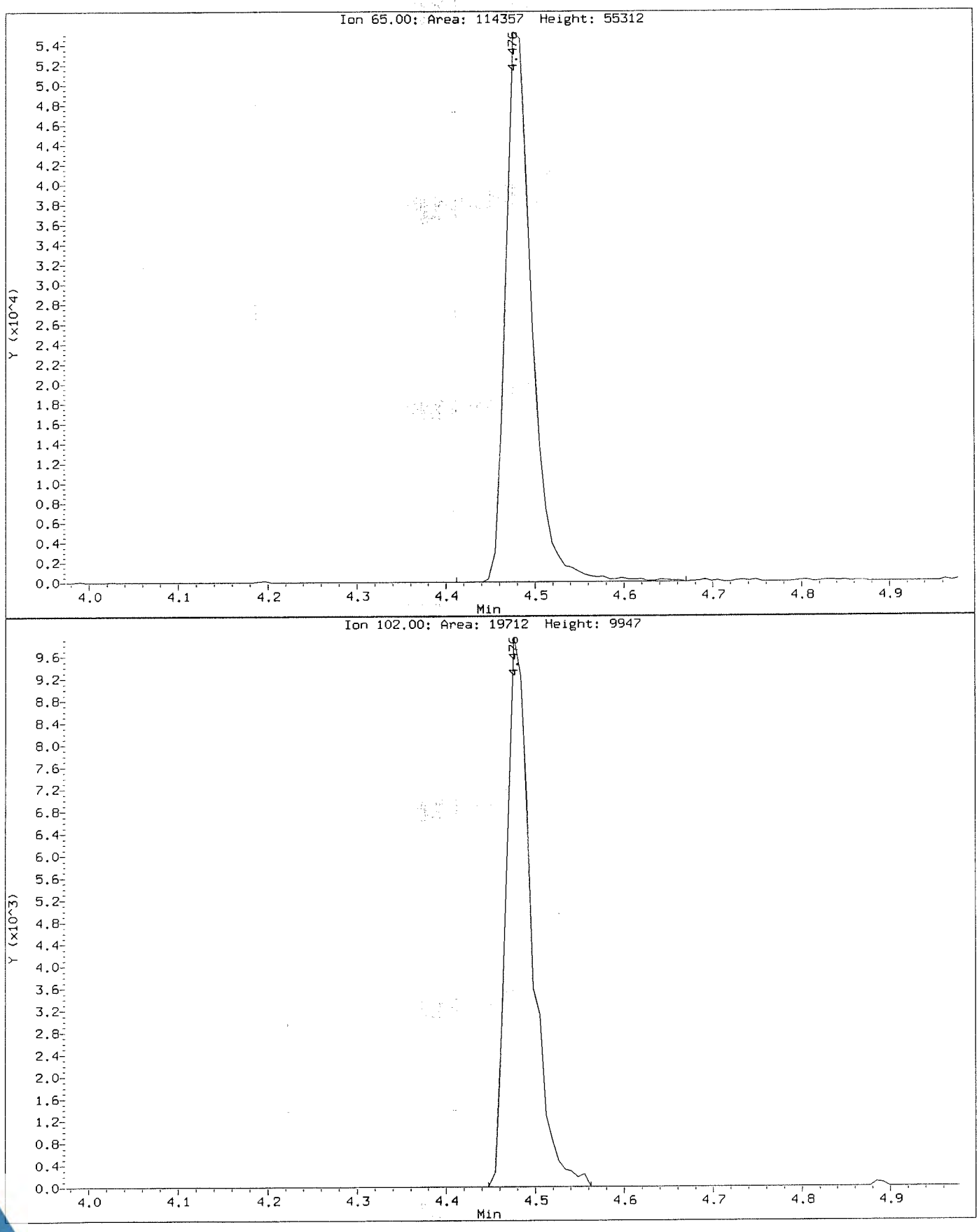
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102812.D
Injection Date: 28-OCT-2020 15:35
Instrument: voa6.i
Client Sample ID: HS20101079-03

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102813.D Page 1
Report Date: 30-Nov-2020 14:10

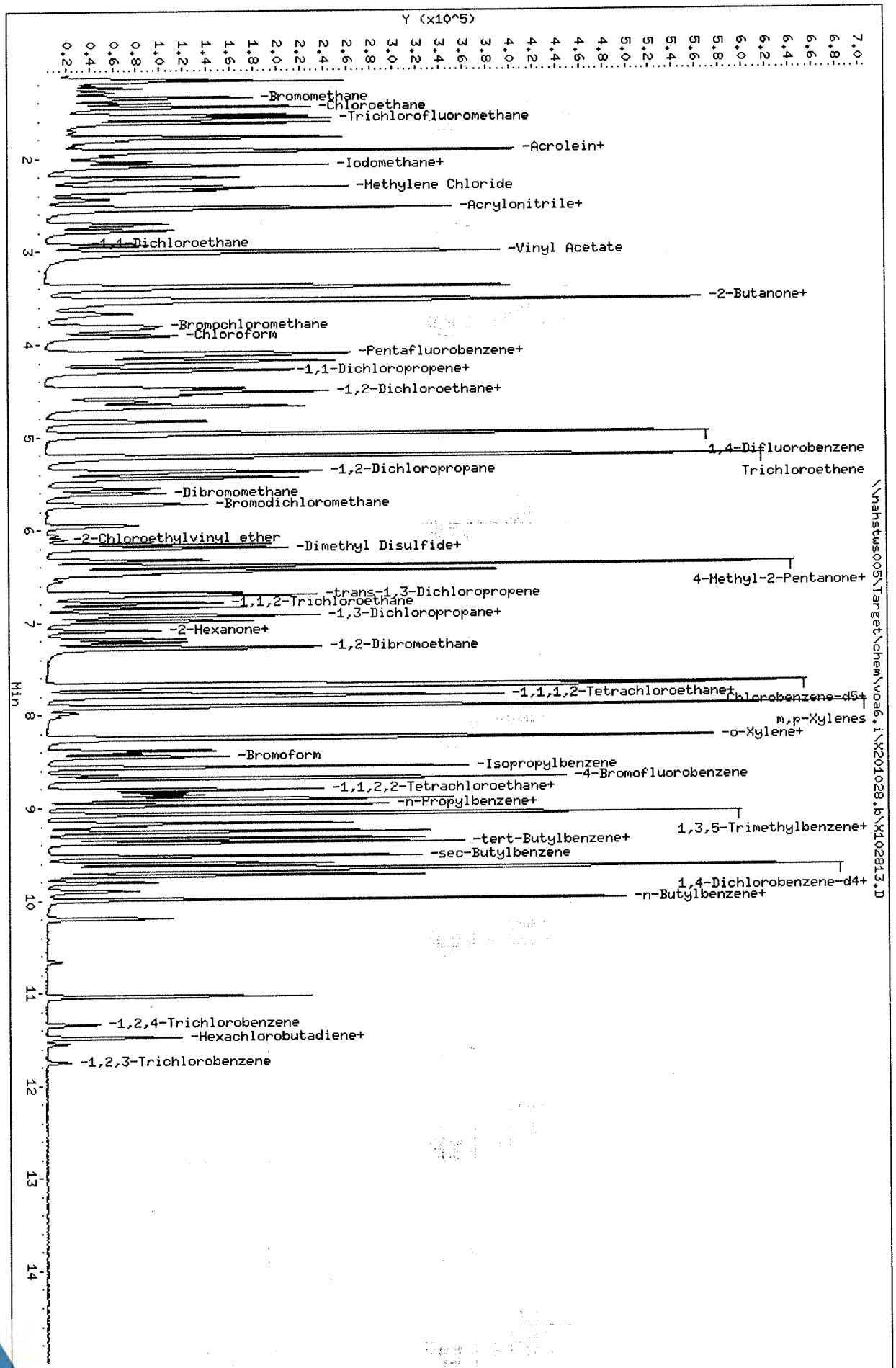
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102813.D
Lab Smp Id: HS20101079-03MS Client Smp ID: HS20101079-03MS
Inj Date : 28-OCT-2020 15:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-03MS;HS20101079-03MS;3;;MS
Misc Info : HS18090001;WATER;0;250;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 13 QC Sample: MS
Dil Factor: 250.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	250.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	167906	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	293221	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	260582	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	100445	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	122346	41.6267	41.62
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	113552	45.7290	45.72
$ 30 Dibromofluoromethane	113	4.110	4.111	(0.981)	100117	43.3139	43.31
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	346607	47.2605	47.26
53 1,1,2-Trichloroethane	83	6.847	6.840	(0.893)	36635	21.6132	5403.29
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	75036	18.3487	4587.17
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	73327	23.1542	5788.55
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	224841	85.5734	21393.35
17 Methylene Chloride	84	2.313	2.313	(0.552)	48452	18.2611	4565.28
38 Trichloroethene	130	5.214	5.214	(1.049)	174118	90.2822	22570.55
5 Vinyl Chloride	62	1.145	1.145	(0.273)	90241	17.4821	4370.52



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102813.D
Date : 28-OCT-2020 15:56
Client ID: HS20101079-03MS
Sample Info: HS20101079-03MS;HS20101079-03MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102814.D Page 1
Report Date: 30-Nov-2020 14:10

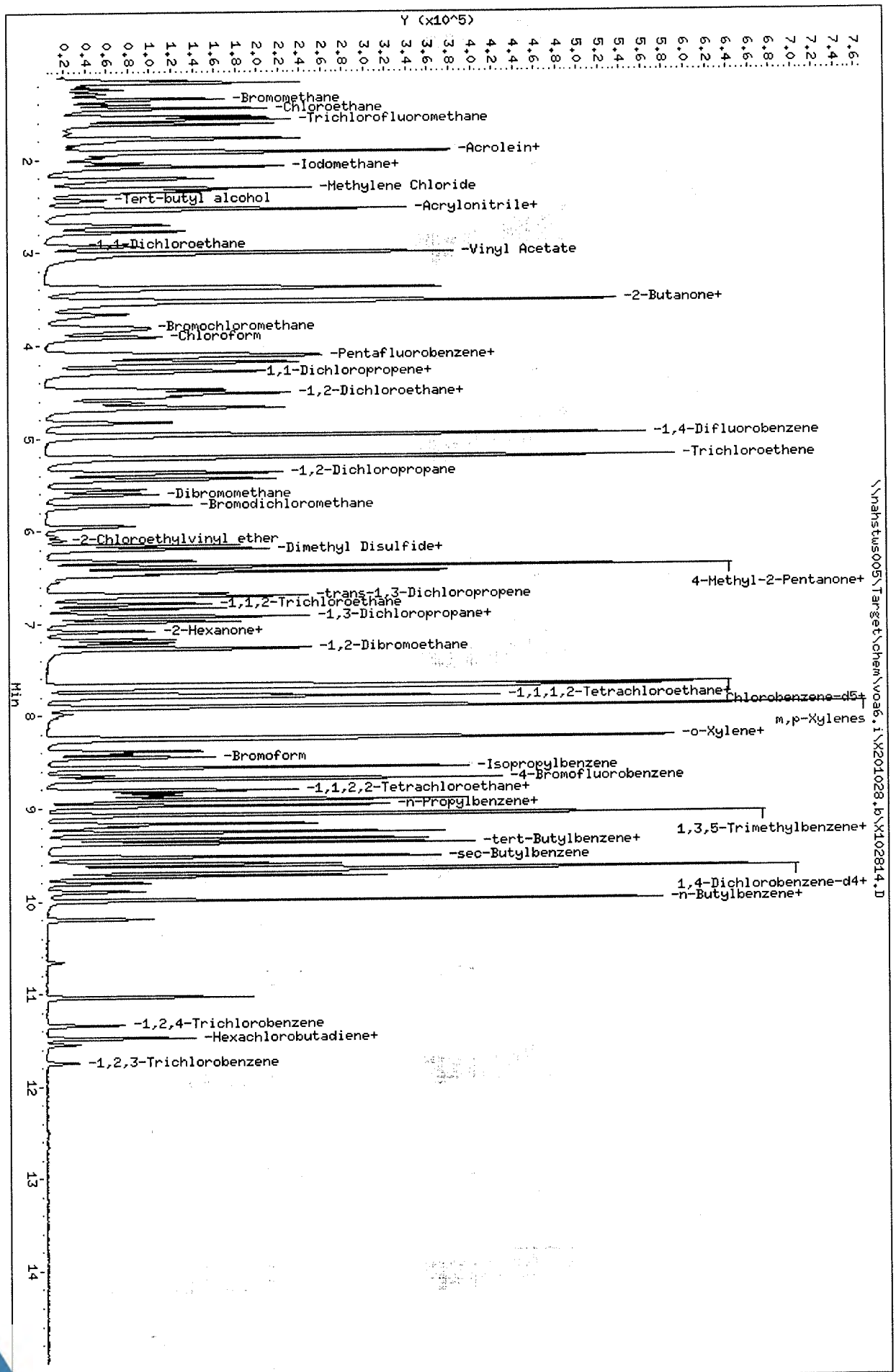
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102814.D
Lab Smp Id: HS20101079-03MSD Client Smp ID: HS20101079-03MSD
Inj Date : 28-OCT-2020 16:18
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-03MSD;HS20101079-03MSD;3;;MSD
Misc Info : HS18090001;WATER;0;250;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 250.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	250.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161827	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287510	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	252676	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	98161	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	125986	44.4733	44.47
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	109450	45.4681	45.46
$	30 Dibromofluoromethane	113	4.111	4.111	(0.981)	98227	44.0925	44.09
$	48 Toluene-d8	98	6.388	6.388	(0.833)	334786	47.0837	47.08
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	36920	22.4628	5615.70
	11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	67663	17.1673	4291.82
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	74429	23.9690	5992.26
	27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	214065	84.5326	21133.15
	17 Methylene Chloride	84	2.313	2.313	(0.552)	48292	18.8845	4721.13
	38 Trichloroethene	130	5.214	5.214	(1.049)	161779	85.5506	21387.64
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	85541	17.1941	4298.52



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102814.D
Date : 28-OCT-2020 16:18
Client ID: HS201010079-03MSD
Sample Info: HS201010079-03MSD;HS201010079-03MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102816.D Page 1
Report Date: 30-Nov-2020 14:15

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Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102816.D
Lab Smp Id: HS20101079-02 Client Smp ID: HS20101079-02
Inj Date : 28-OCT-2020 17:00
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-02;HS20101079-02;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 15
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

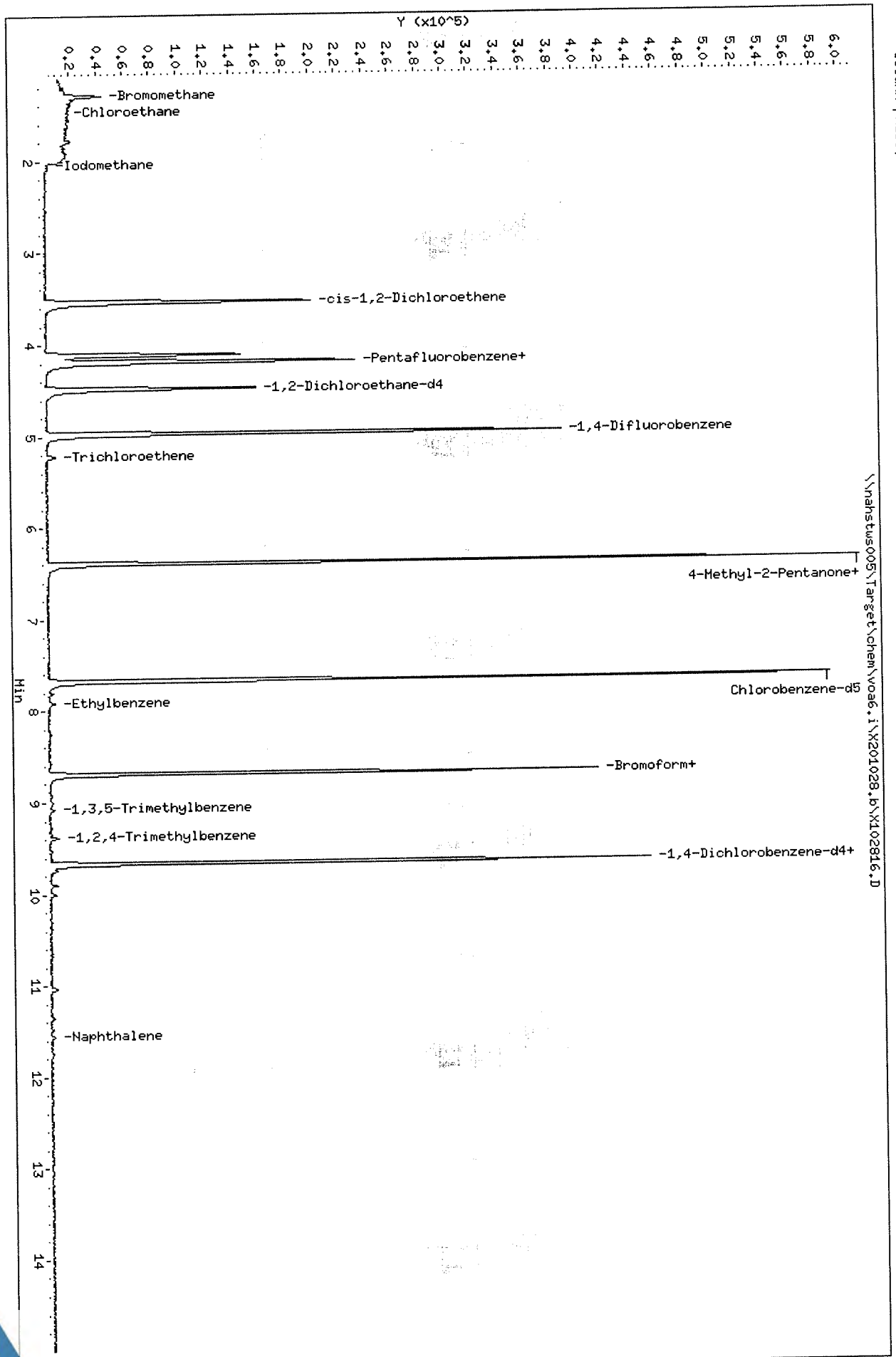
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	159319	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	281314	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	245673	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	94358	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	117203	42.0259	42.02
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	101394	43.4163	43.41
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	94063	42.8881	42.88
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	334778	48.3756	48.37
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.844)	93804	37.6256	188.12
38 Trichloroethene	130	5.214	5.214	(1.049)	2184	1.18036	5.90(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102816.D
Date : 28-OCT-2020 17:00
Client ID: HS20101079-02
Sample Info: HS20101079-02;HS20101079-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102816.D

Date : 28-OCT-2020 17:00

Client ID: HS20101079-02

Instrument: voa6.i

Sample Info: HS20101079-02;HS20101079-02;;;

Purge Volume: 5.0

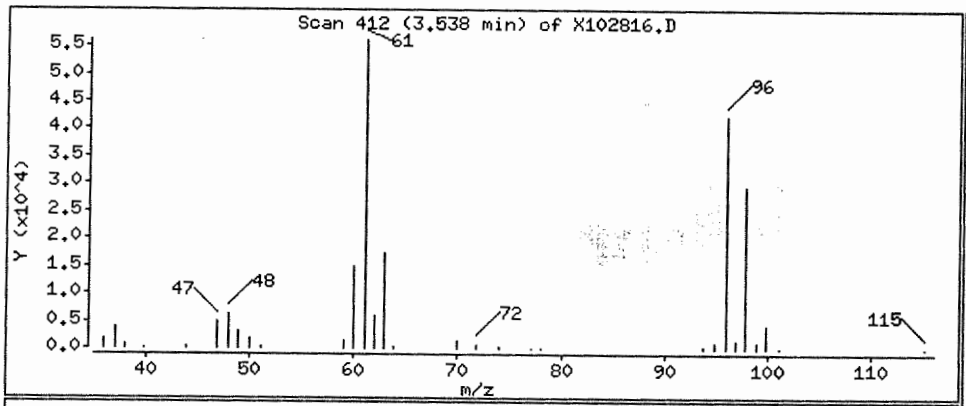
Operator: PC

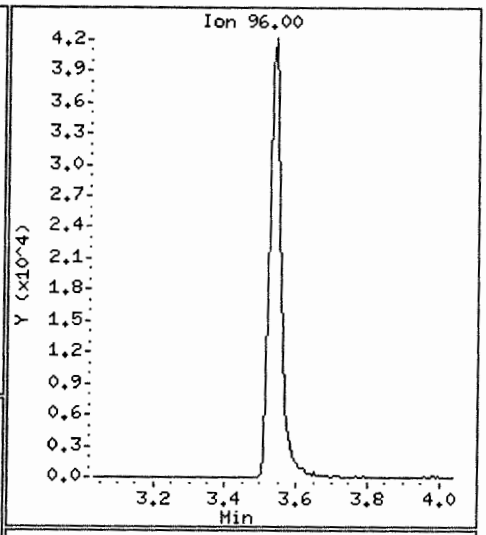
Column phase: DB624

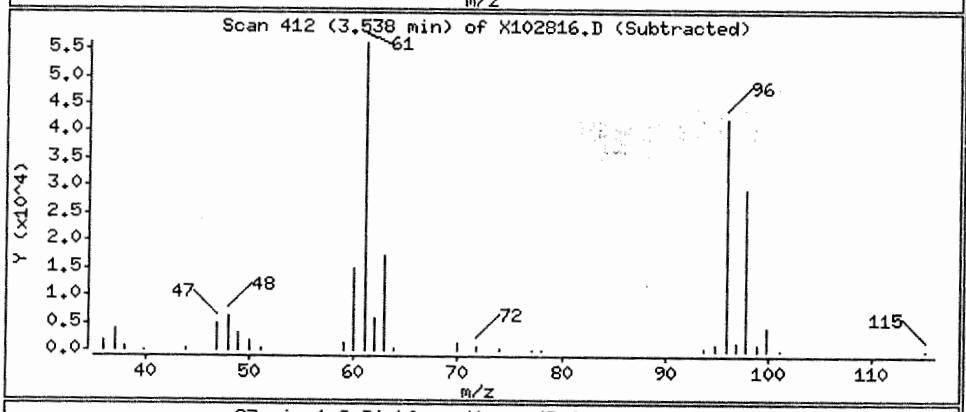
Column diameter: 0.18

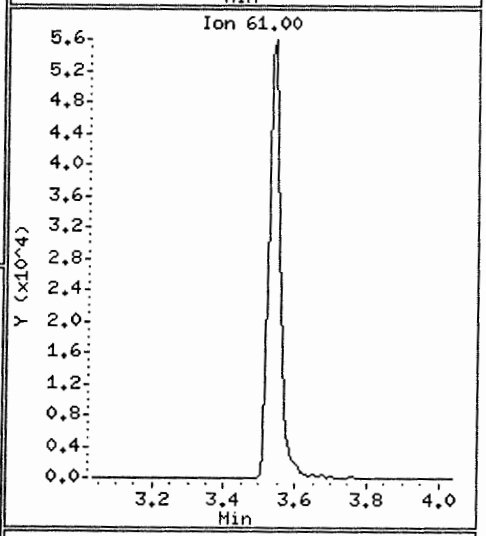
27 cis-1,2-Dichloroethene

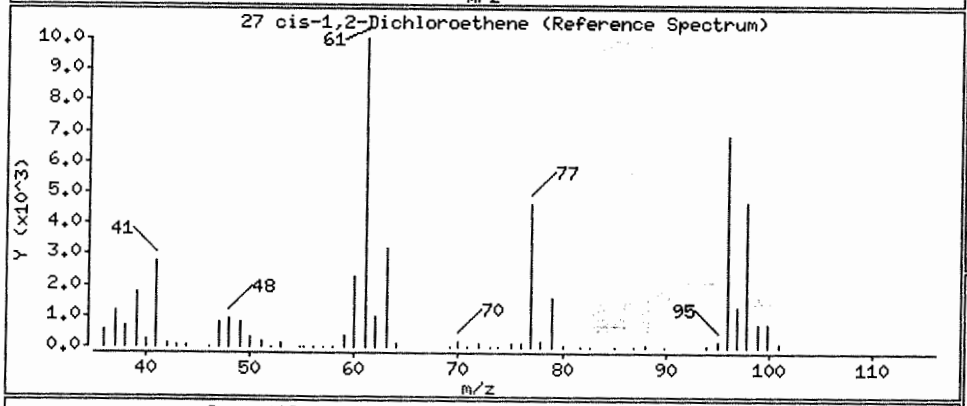
Concentration: 188.12 ug/l

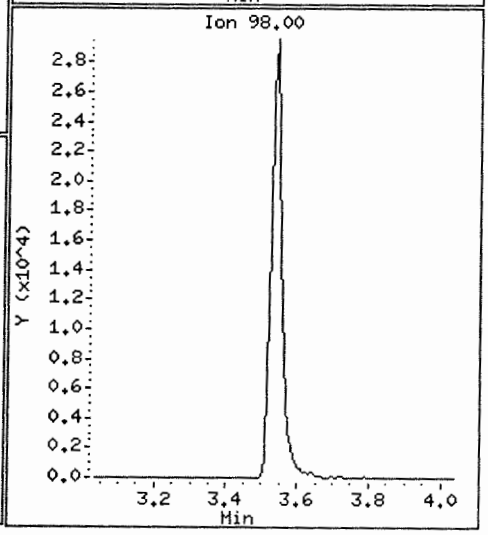


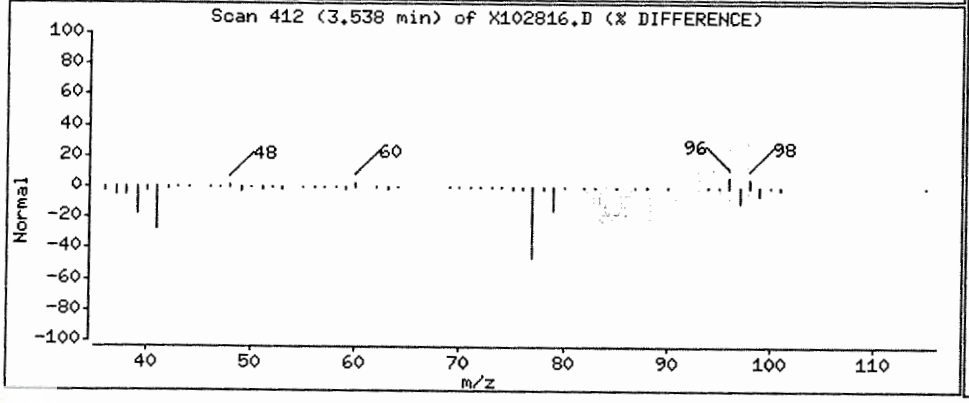












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102816.D

Date : 28-OCT-2020 17:00

Client ID: HS20101079-02

Instrument: voa6.i

Sample Info: HS20101079-02;HS20101079-02;;;

Purge Volume: 5.0

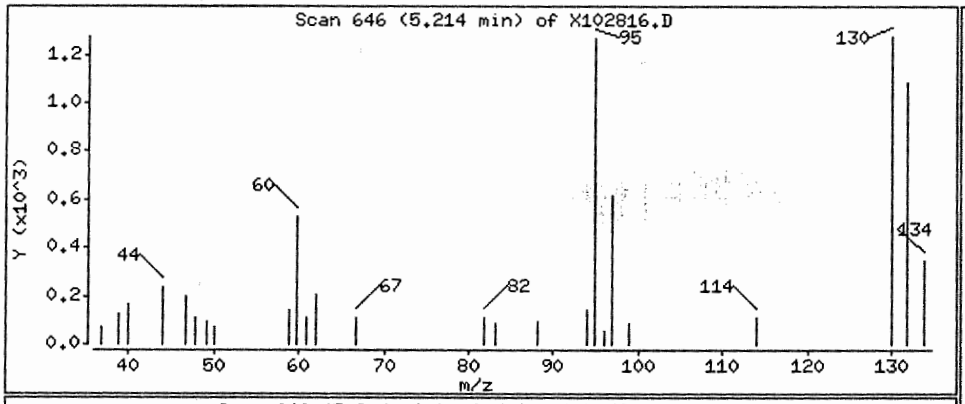
Operator: PC

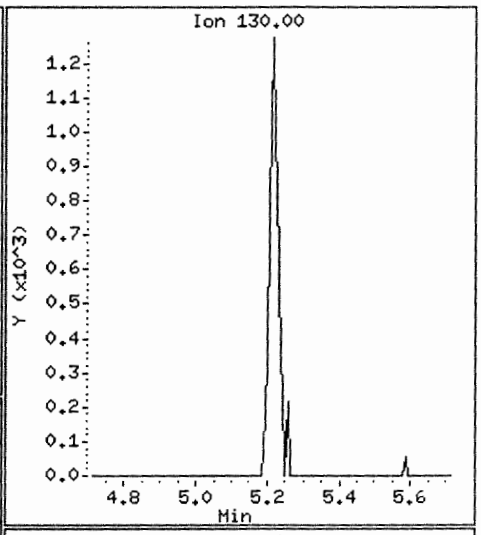
Column phase: DB624

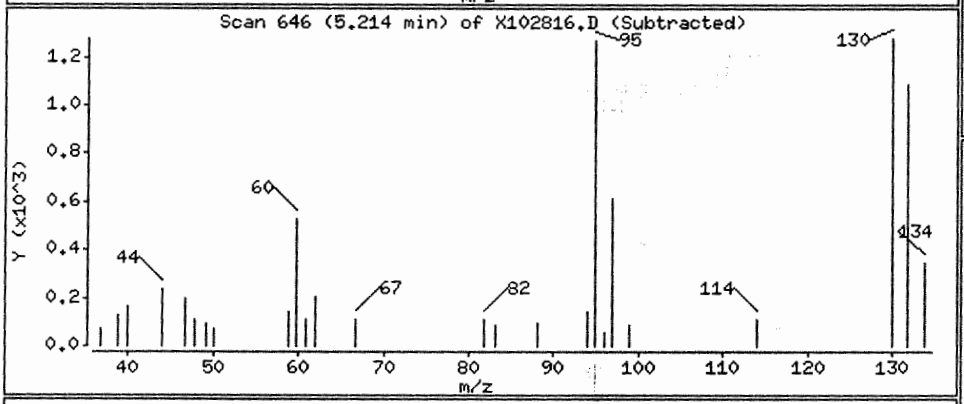
Column diameter: 0.18

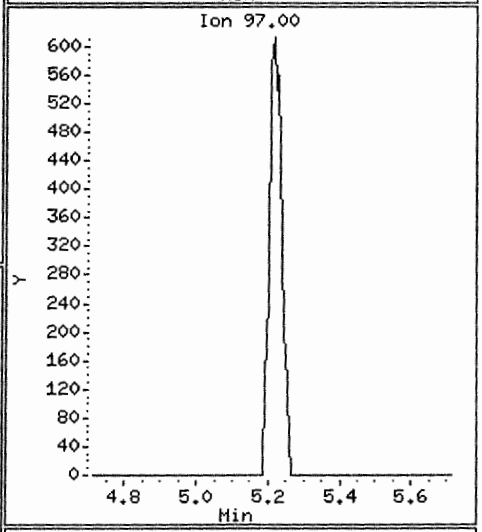
38 Trichloroethene

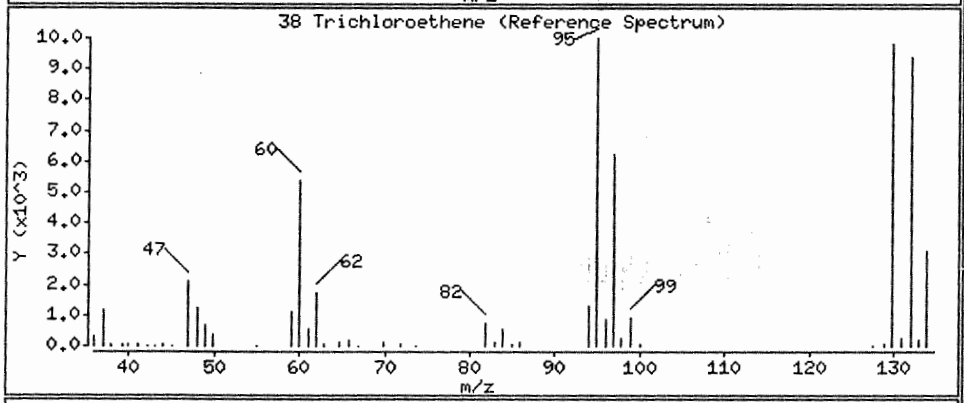
Concentration: 5.90 ug/l

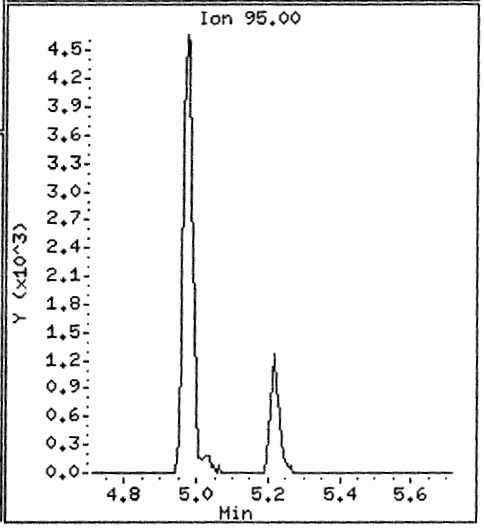


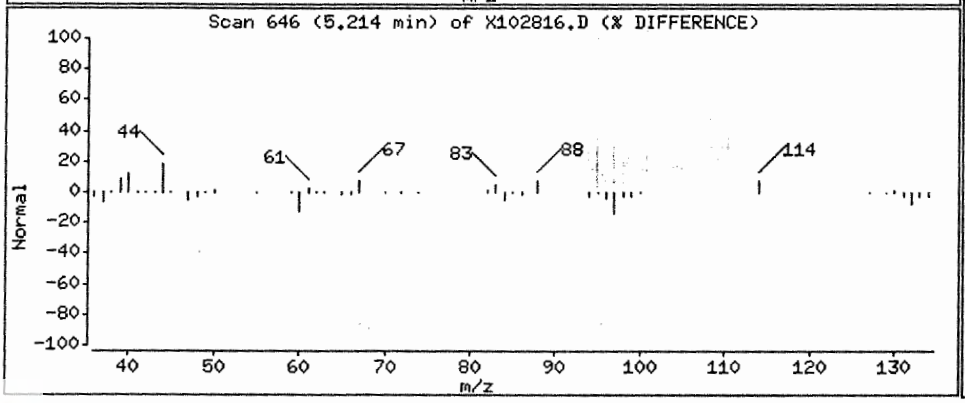












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102817.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102817.D
Lab Smp Id: HS20101079-04 Client Smp ID: HS20101079-04
Inj Date : 28-OCT-2020 17:21
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-04;HS20101079-04;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 16
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

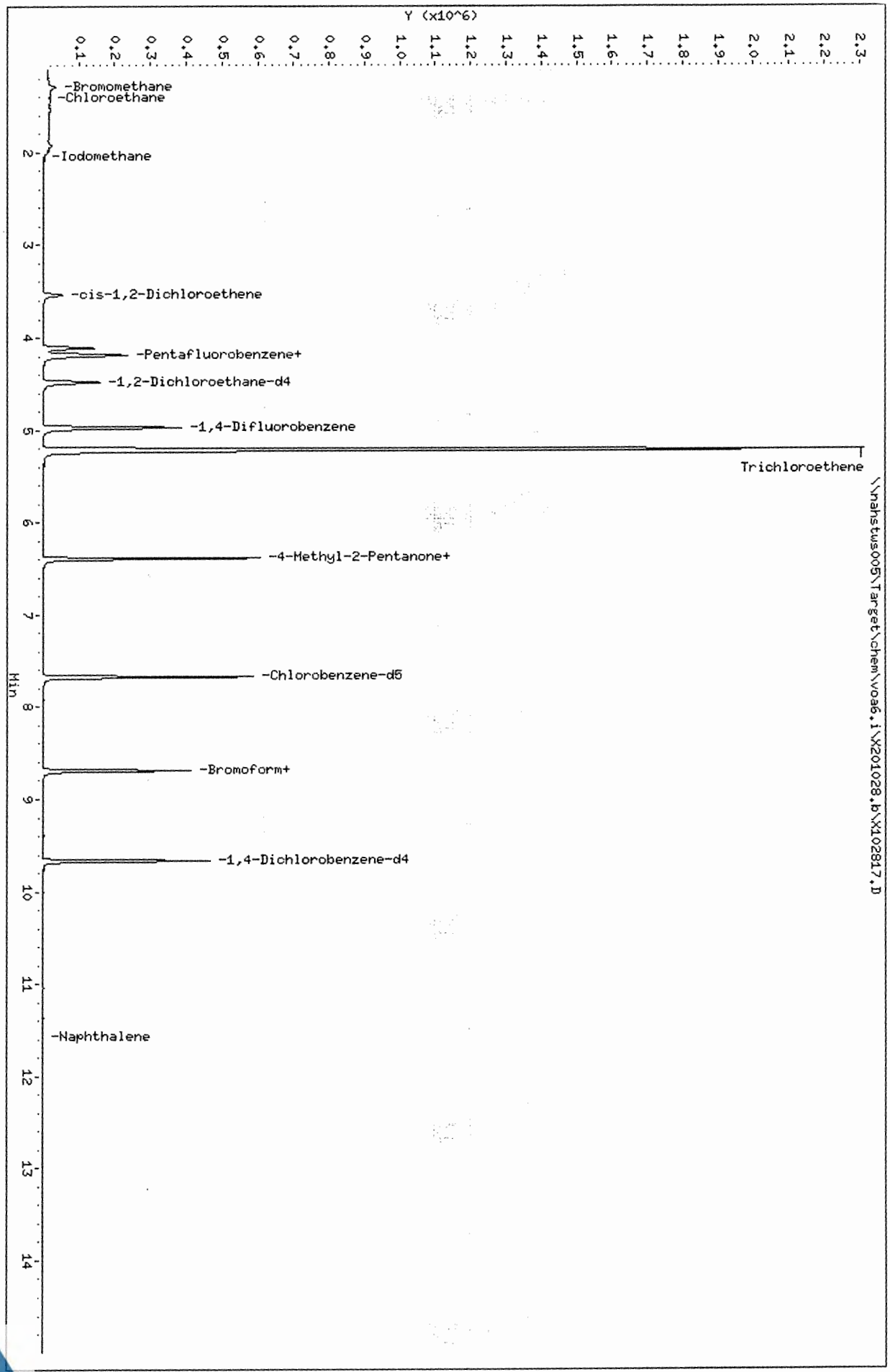
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	160021	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	282533	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	242622	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	91080	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	114904	41.0215	41.02
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	103053	44.6234	44.62
$ 30 Dibromofluoromethane	113	4.110	4.111	(0.981)	92173	41.8420	41.84
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	332351	48.6198	48.61
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	25143	10.0408	50.20
38 Trichloroethene	130	5.214	5.214	(1.049)	622361	334.909	1674.54(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102817.D
Date : 28-OCT-2020 17:21
Client ID: HS20101079-04
Sample Info: HS20101079-04;HS20101079-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102817.D

Date : 28-OCT-2020 17:21

Client ID: HS20101079-04

Instrument: voa6.i

Sample Info: HS20101079-04;HS20101079-04;;;

Purge Volume: 5.0

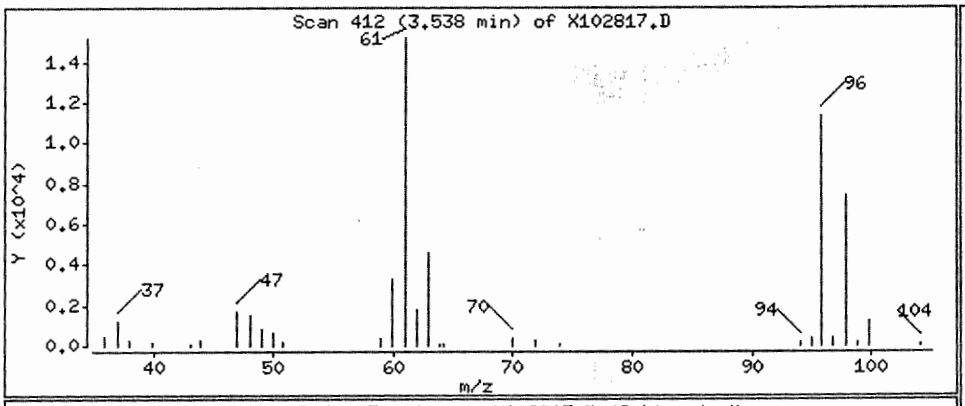
Operator: PC

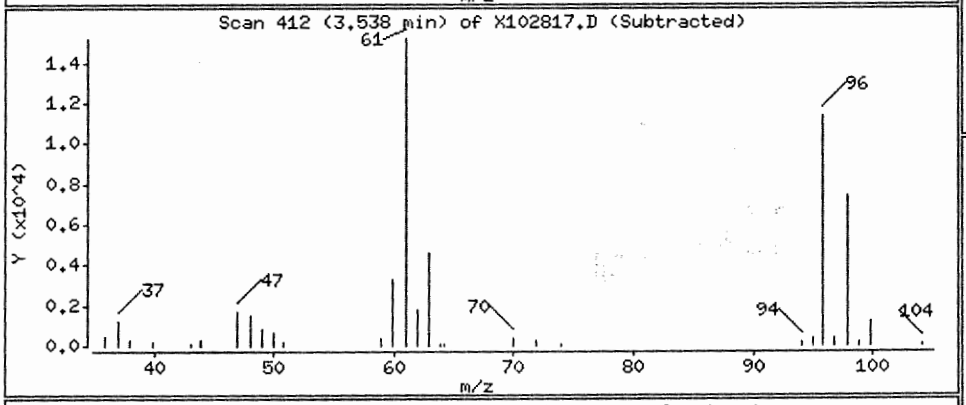
Column phase: DB624

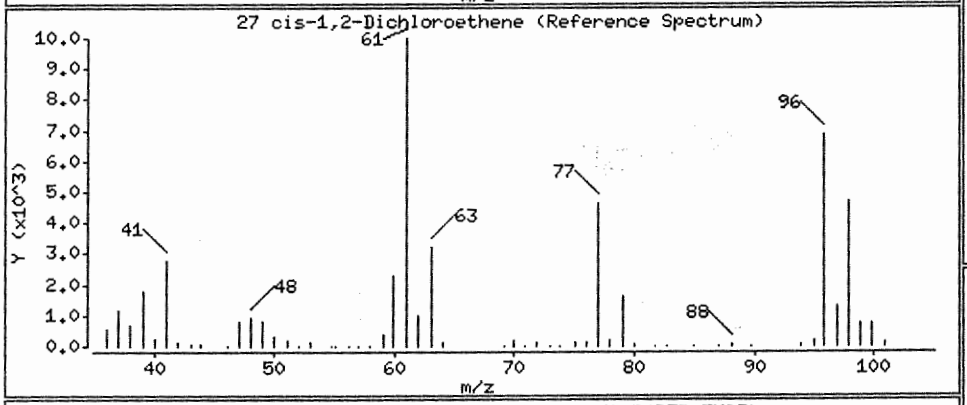
Column diameter: 0.18

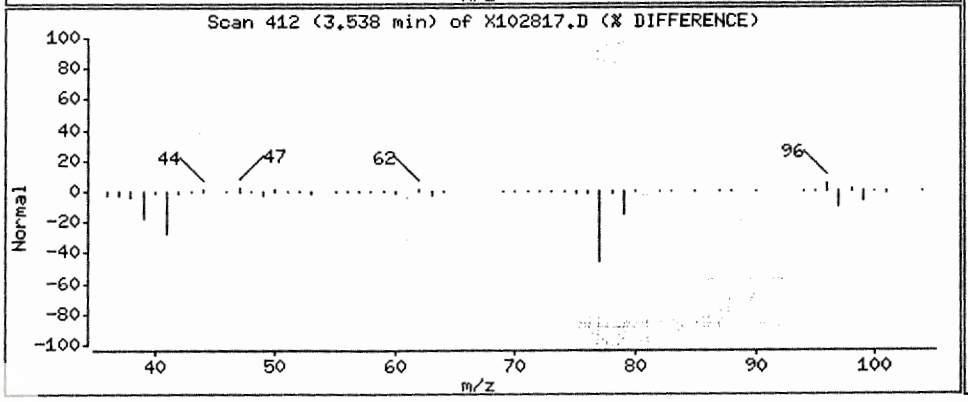
27 cis-1,2-Dichloroethene

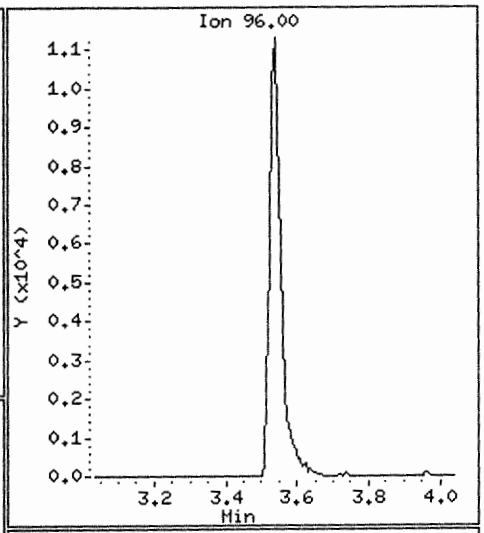
Concentration: 50.20 ug/l

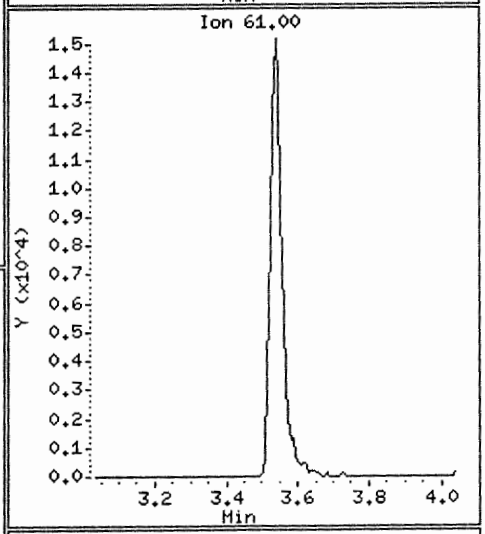


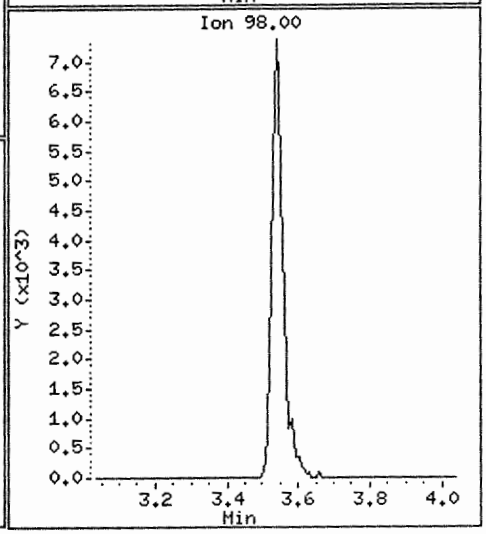












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102817.D

Date : 28-OCT-2020 17:21

Client ID: HS20101079-04

Instrument: voa6.i

Sample Info: HS20101079-04;HS20101079-04;;;

Purge Volume: 5.0

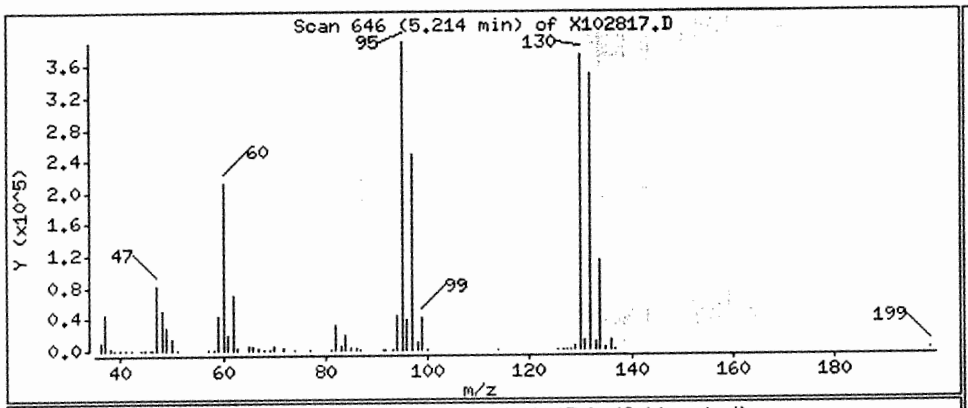
Operator: PC

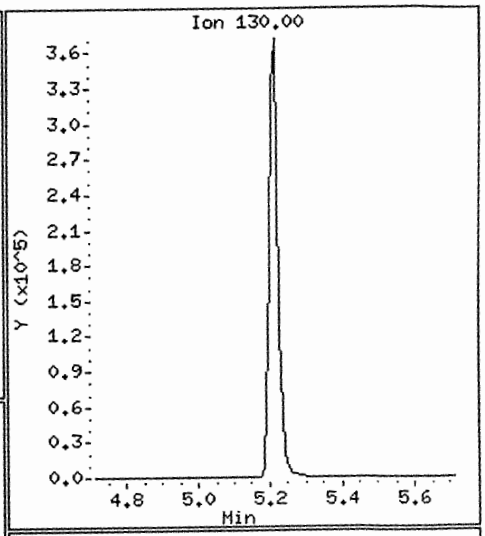
Column phase: DB624

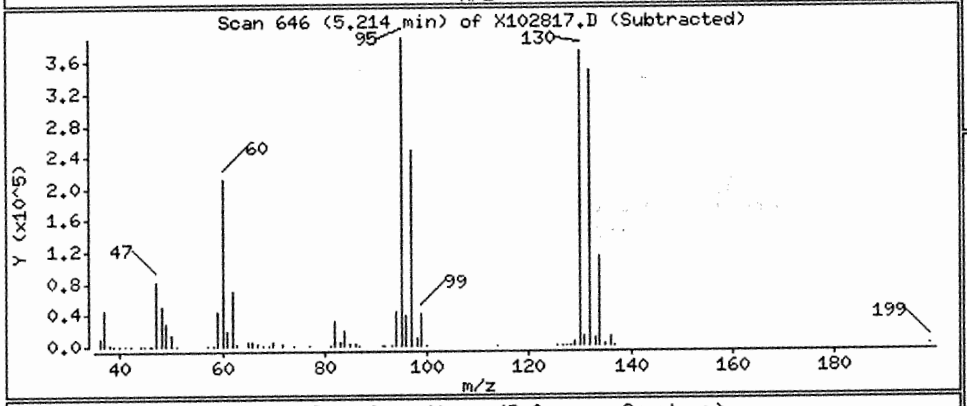
Column diameter: 0.18

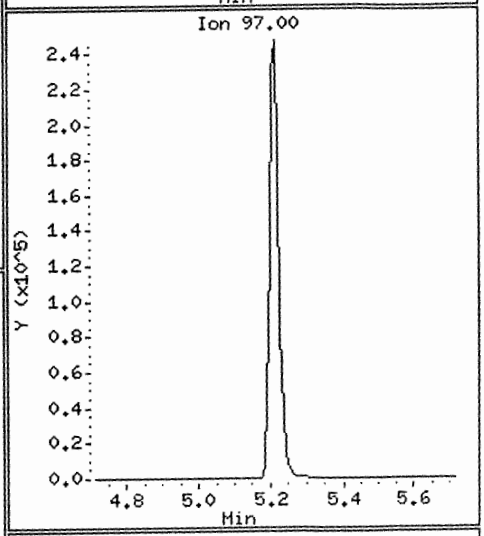
38 Trichloroethene

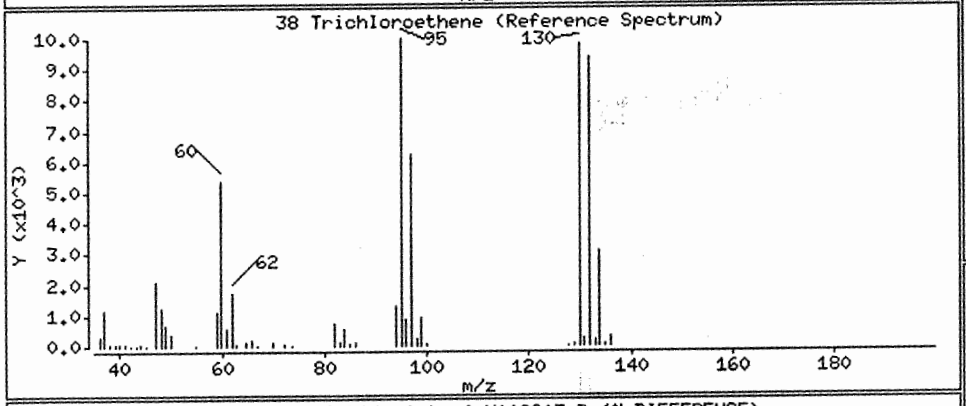
Concentration: 1674.54 ug/l

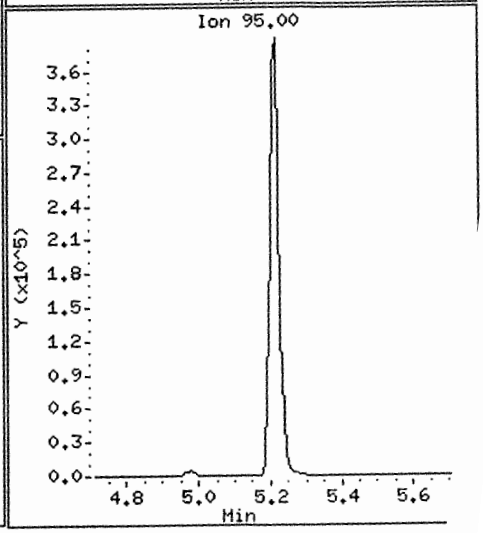


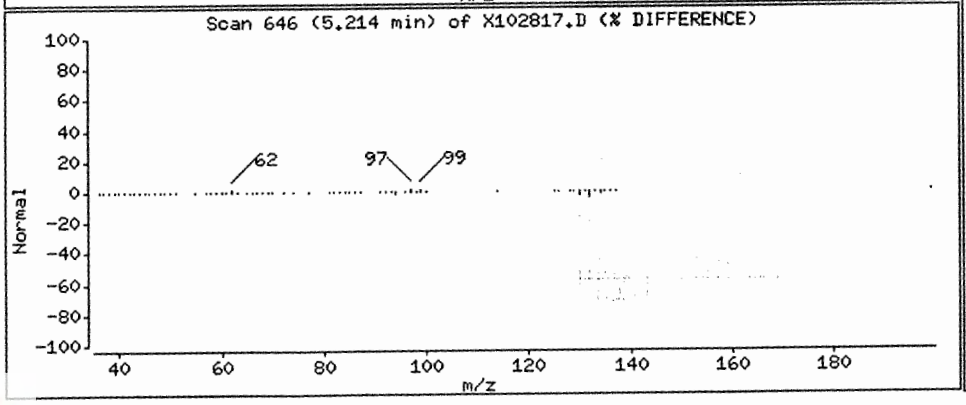












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102818.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102818.D
Lab Smp Id: HS20101079-04 Client Smp ID: HS20101079-04
Inj Date : 28-OCT-2020 17:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-04;HS20101079-04;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 17
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	157381	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	282284	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	239528	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	93059	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	113357	41.1480	41.14
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	103139	45.2101	45.21
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	91746	42.3467	42.34
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	331881	49.1584	49.15
27 cis-1,2-Dichloroethene	96	3.545	3.538	(0.846)	2501	1.01553	50.77(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	62120	33.4579	1672.89

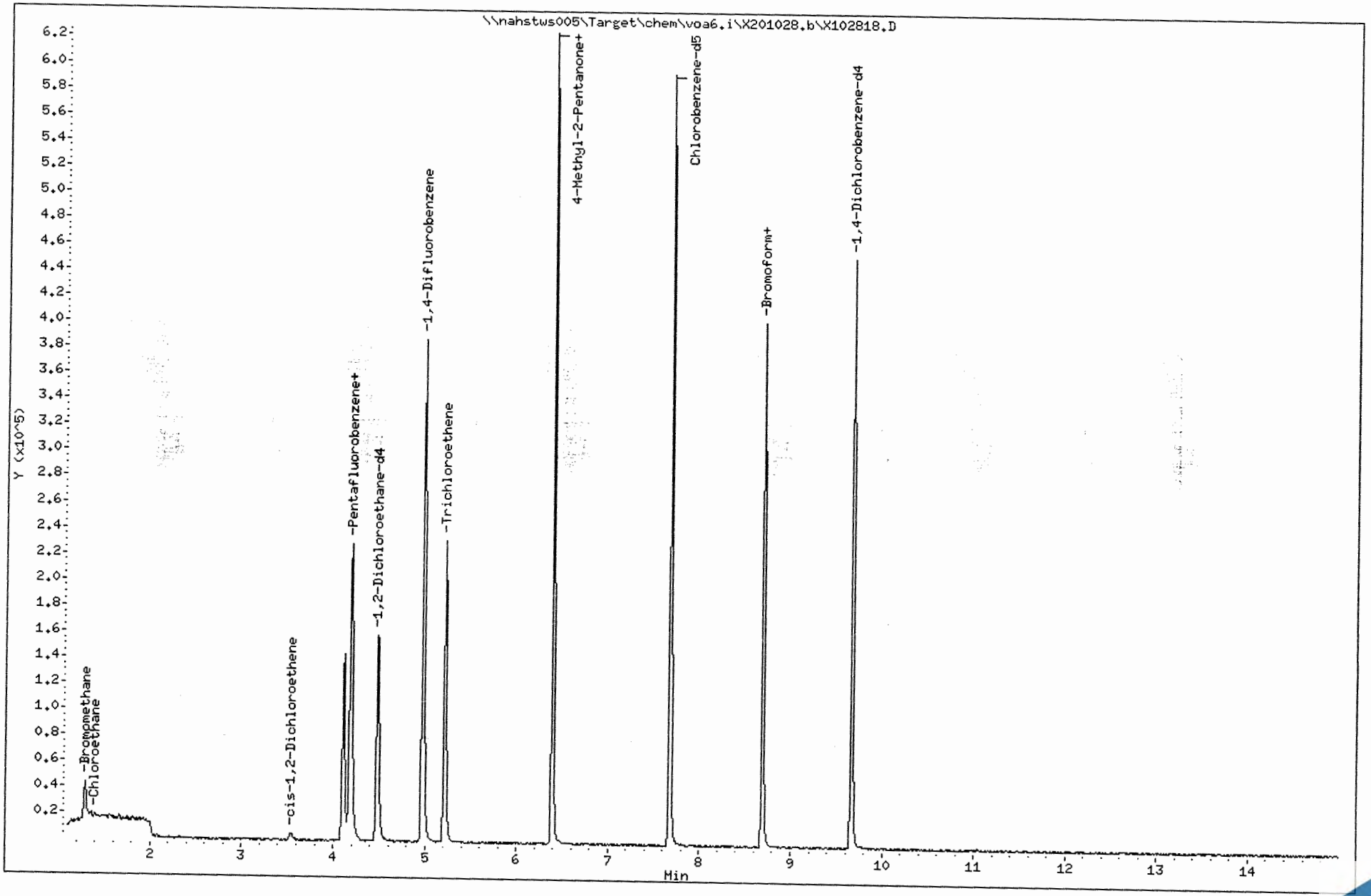
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102818.D
Date : 28-OCT-2020 17:42
Client ID: HS20101079-04
Sample Info: HS20101079-04;HS20101079-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102818.D

Date : 28-OCT-2020 17:42

Client ID: HS20101079-04

Instrument: voa6.i

Sample Info: HS20101079-04;HS20101079-04;;;

Purge Volume: 5.0

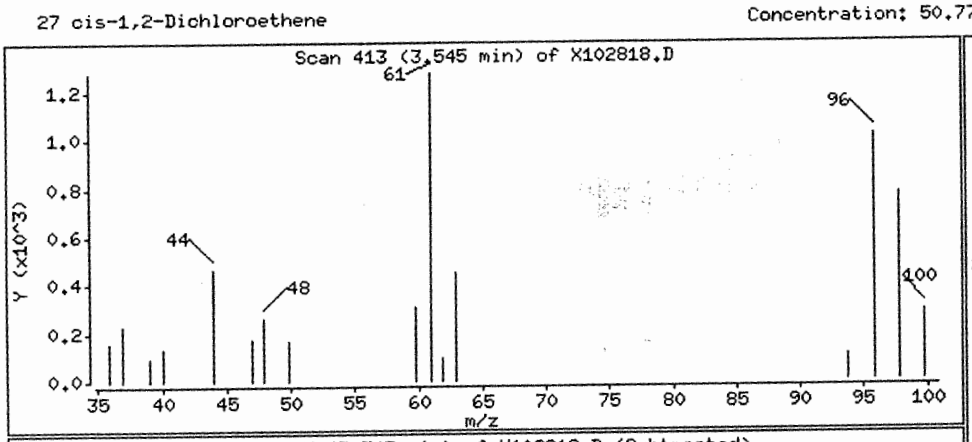
Operator: PC

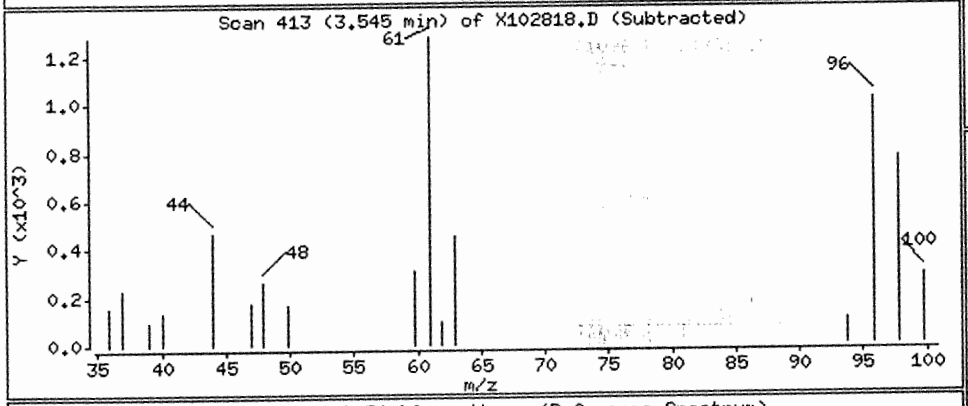
Column phase: DB624

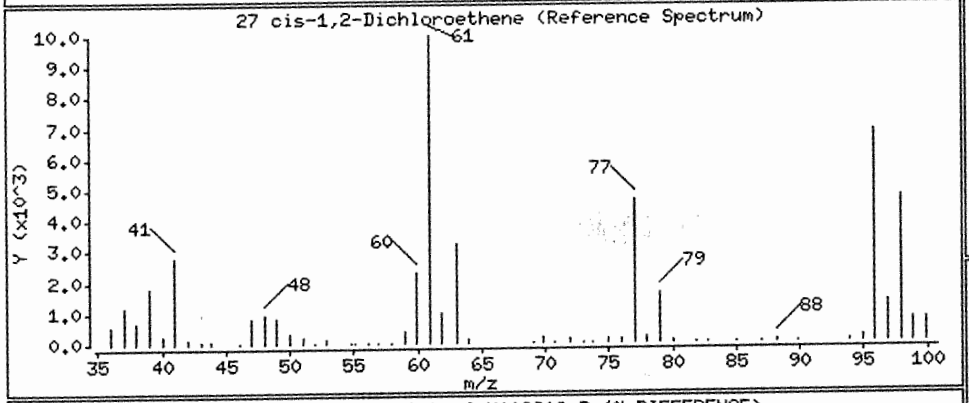
Column diameter: 0.18

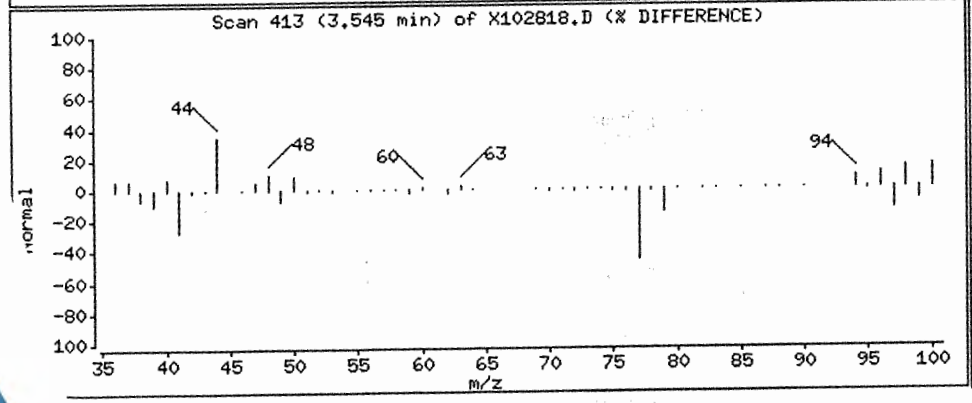
27 cis-1,2-Dichloroethene

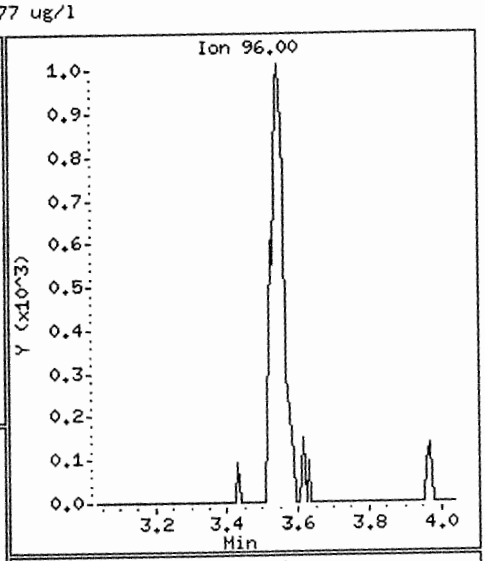
Concentration: 50.77 ug/l

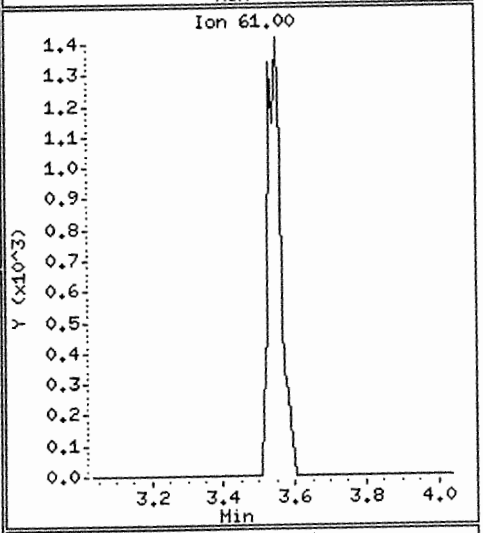


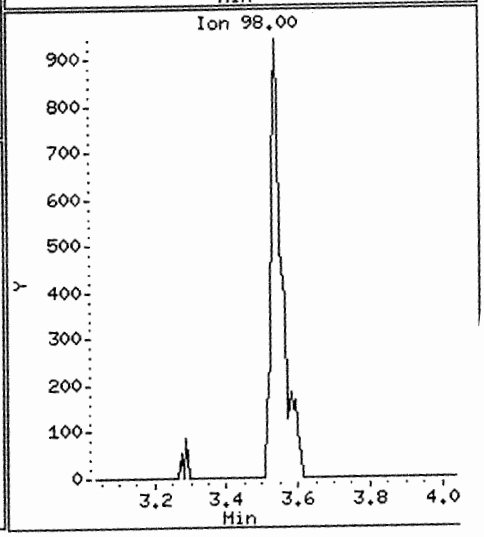












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102818.D

Date : 28-OCT-2020 17:42

Client ID: HS20101079-04

Instrument: voa6.i

Sample Info: HS20101079-04;HS20101079-04;;;

Purge Volume: 5.0

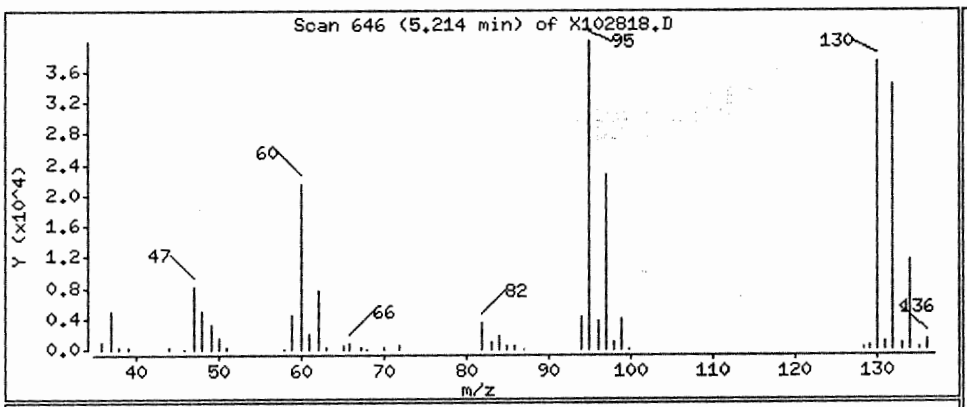
Operator: PC

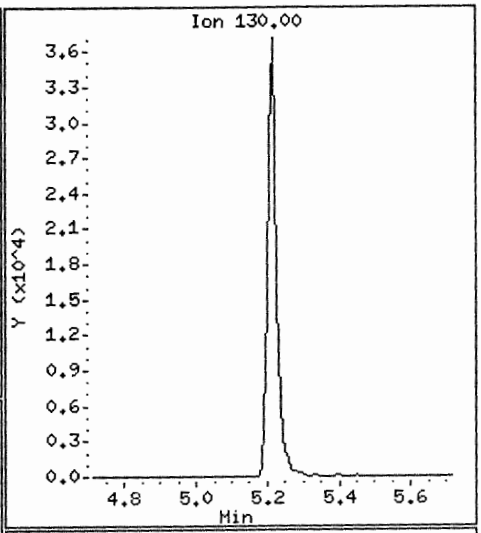
Column phase: DB624

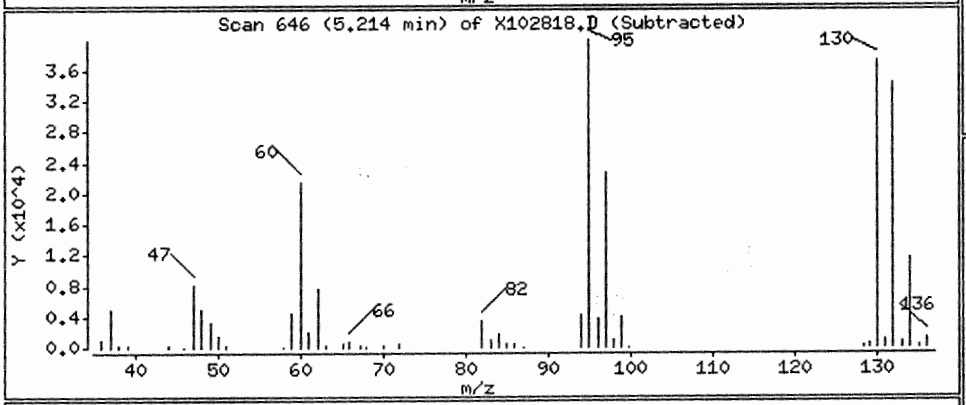
Column diameter: 0.18

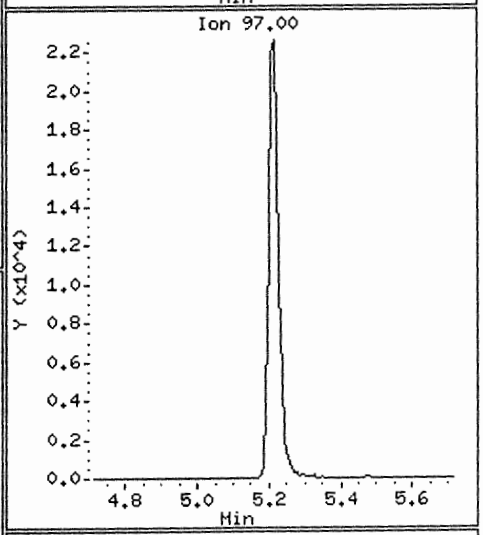
38 Trichloroethene

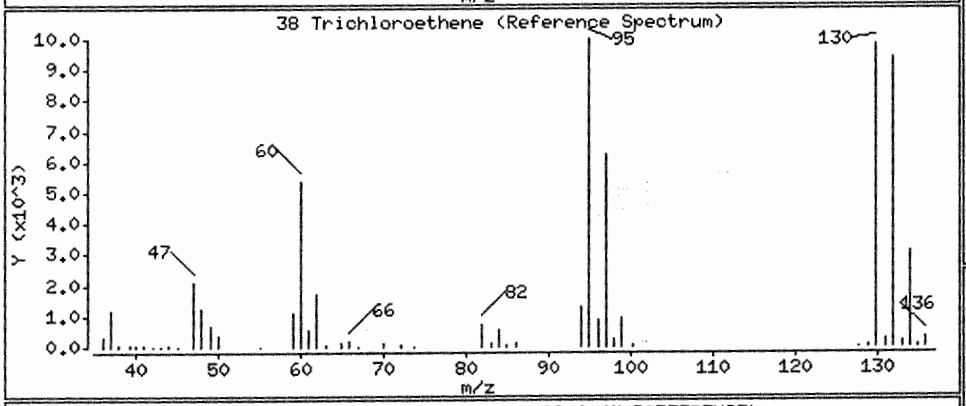
Concentration: 1672.89 ug/l

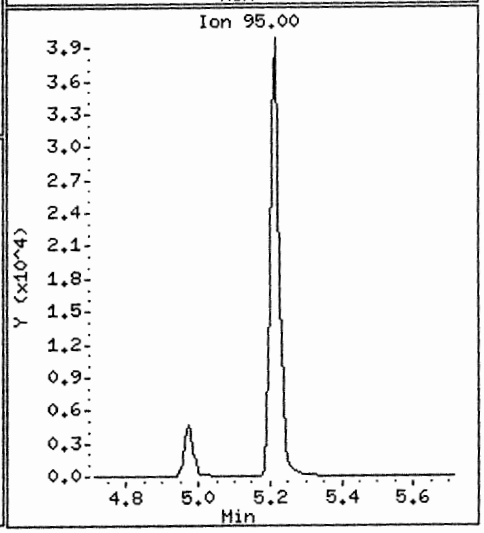


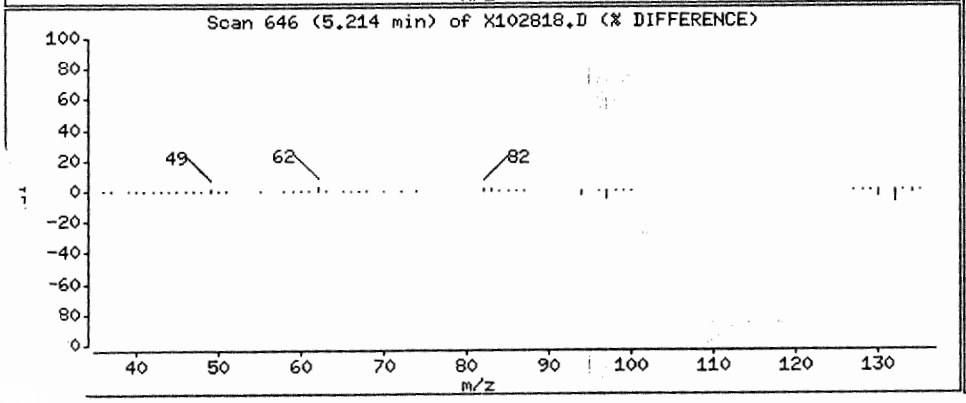












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D
Lab Smp Id: HS20101079-06 Client Smp ID: HS20101079-06
Inj Date : 28-OCT-2020 18:03
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-06;HS20101079-06;;;
Misc Info : HS18090001;WATER;0;10;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 18
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

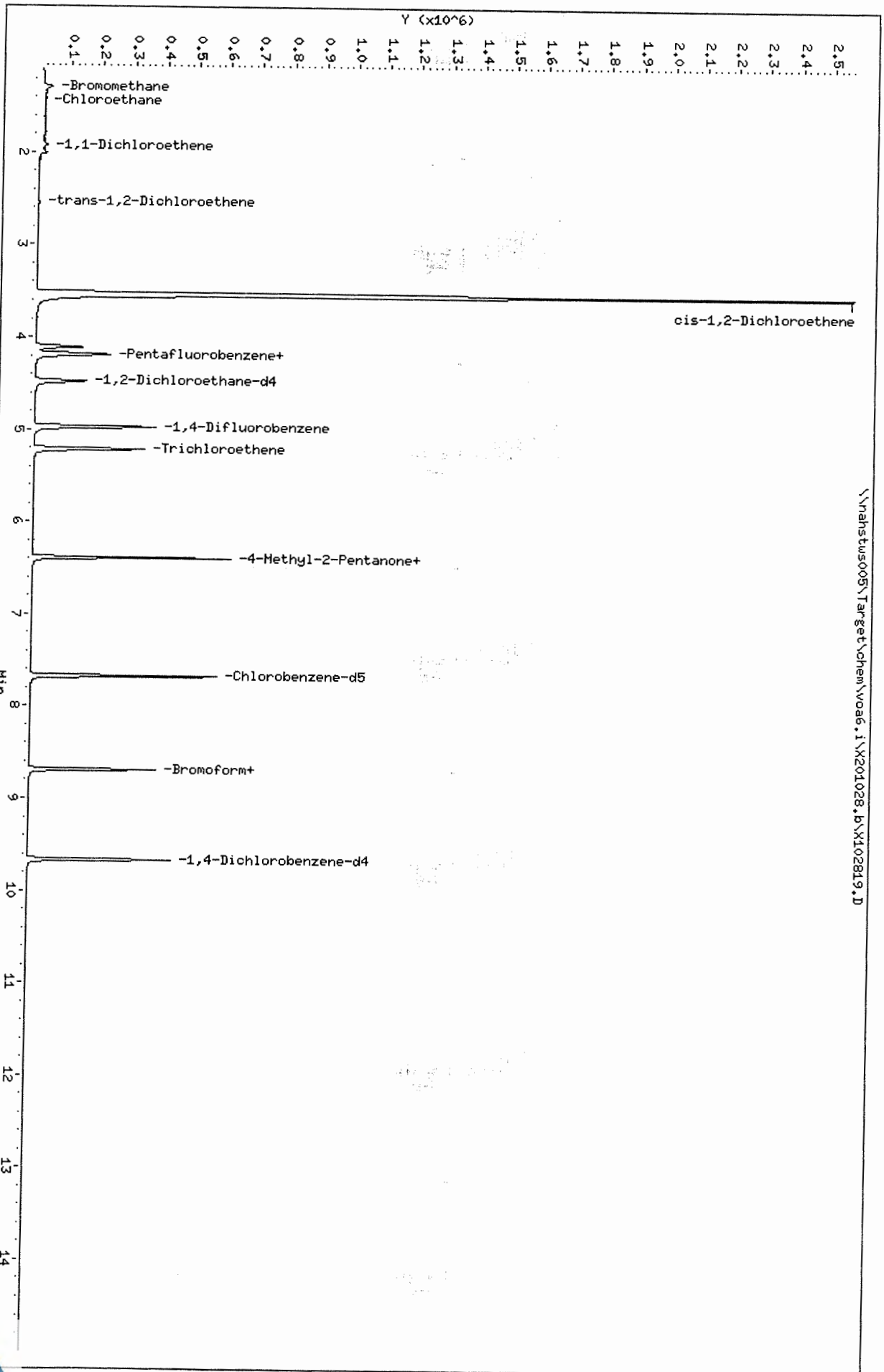
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	162996	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	278446	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	239933	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	92233	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	114902	40.2726	40.27(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	99625	43.6673	43.66
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	96988	43.2241	43.22
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	328659	48.6186	48.61
11 1,1-Dichloroethene	96	1.926	1.919	(0.460)	2356	0.59347	5.93(a)
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.844)	1170710	458.989	4589.88(A)
38 Trichloroethene	130	5.214	5.214	(1.049)	95153	51.9559	519.55

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D
Date : 28-OCT-2020 18:03
Client ID: HS20101079-06
Sample Info: HS20101079-06;HS20101079-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D

Date : 28-OCT-2020 18:03

Client ID: HS20101079-06

Instrument: voa6.i

Sample Info: HS20101079-06;HS20101079-06;;;

Purge Volume: 5.0

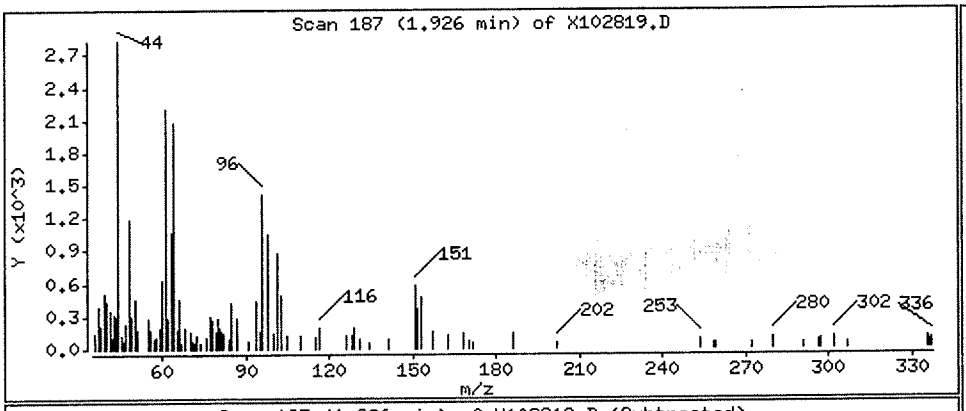
Operator: PC

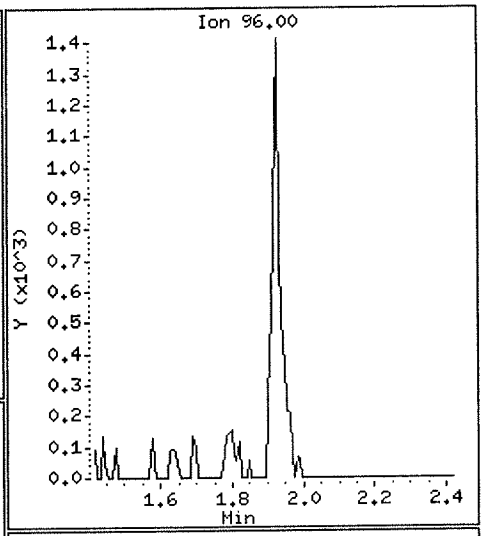
Column phase: DB624

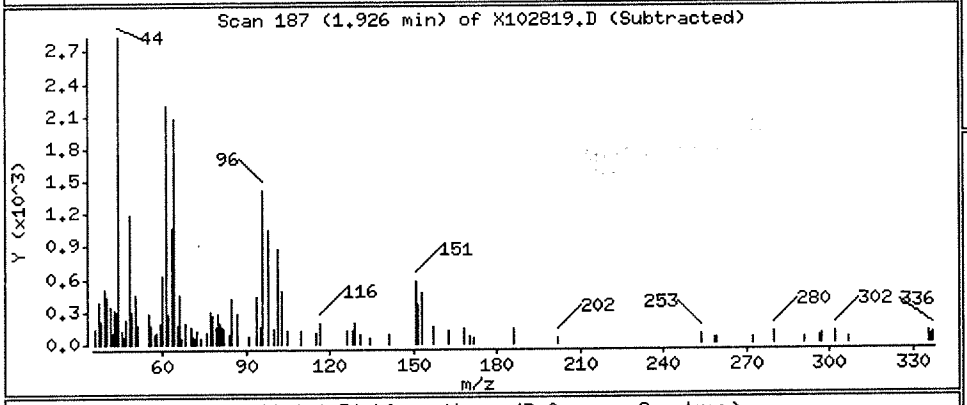
Column diameter: 0.18

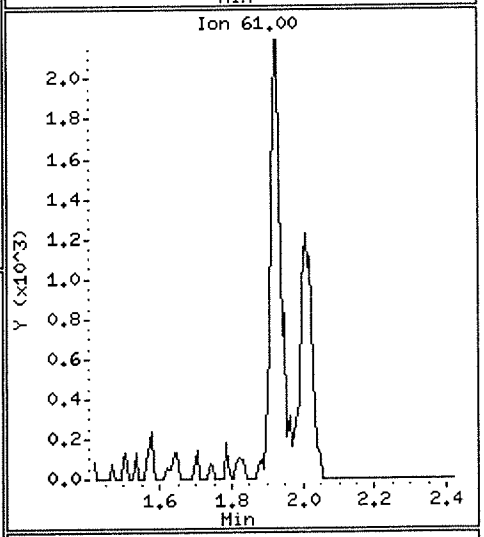
11 1,1-Dichloroethene

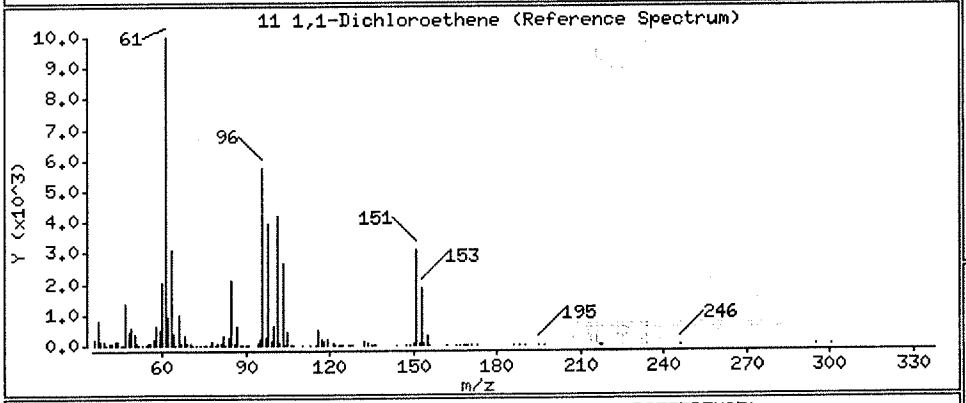
Concentration: 5.93 ug/l

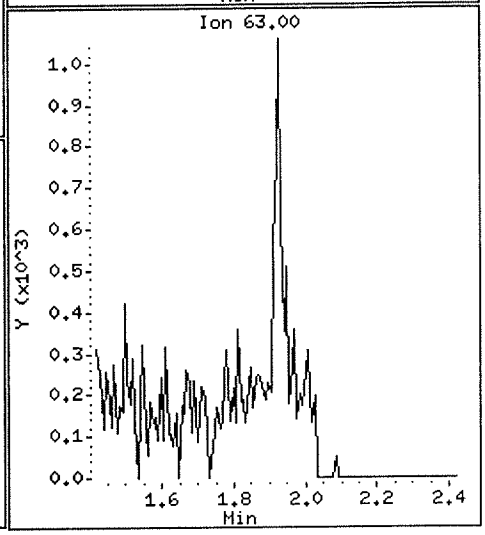


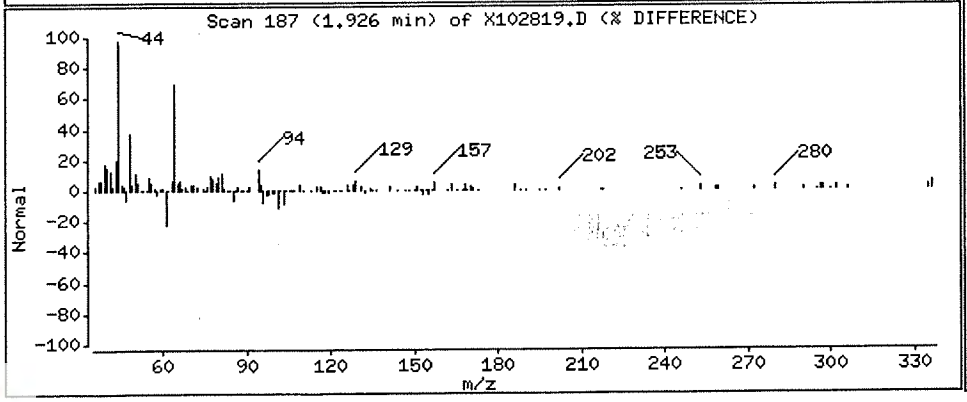












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D

Date : 28-OCT-2020 18:03

Client ID: HS20101079-06

Instrument: voa6.i

Sample Info: HS20101079-06;HS20101079-06;;;

Purge Volume: 5.0

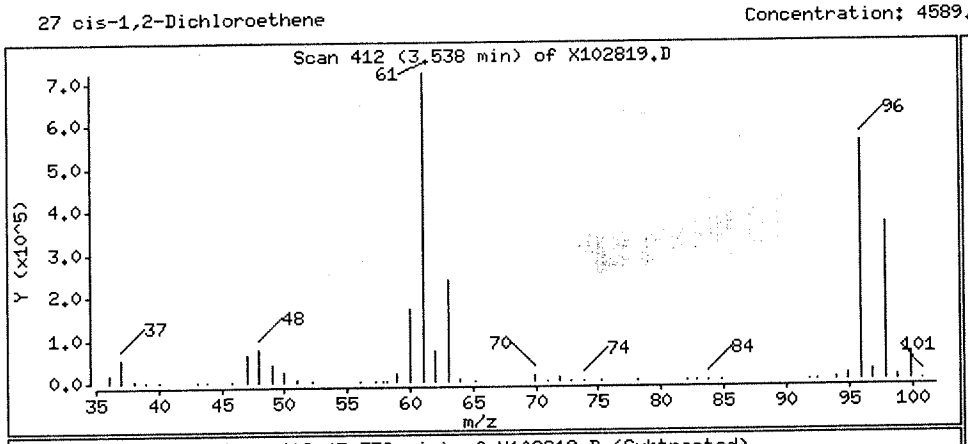
Operator: PC

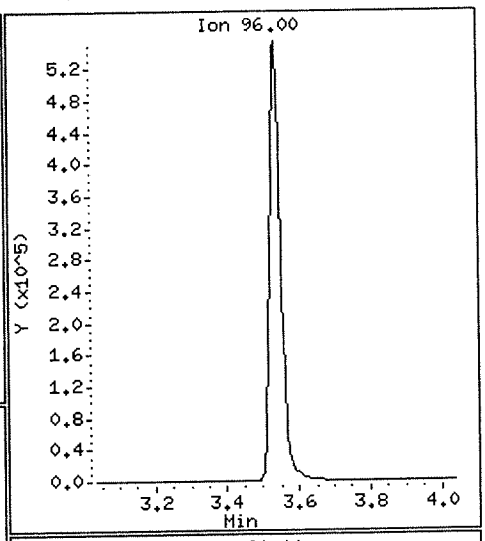
Column phase: DB624

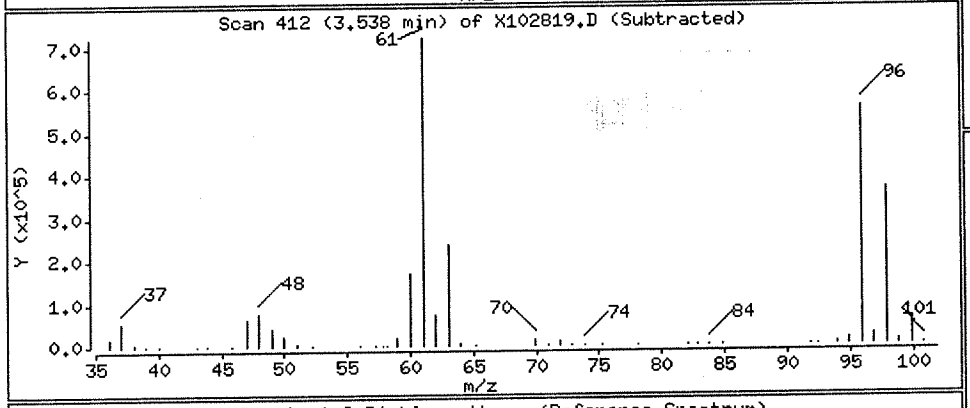
Column diameter: 0.18

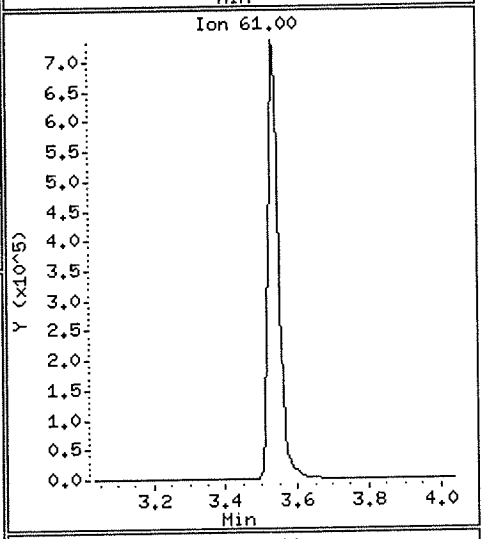
27 cis-1,2-Dichloroethene

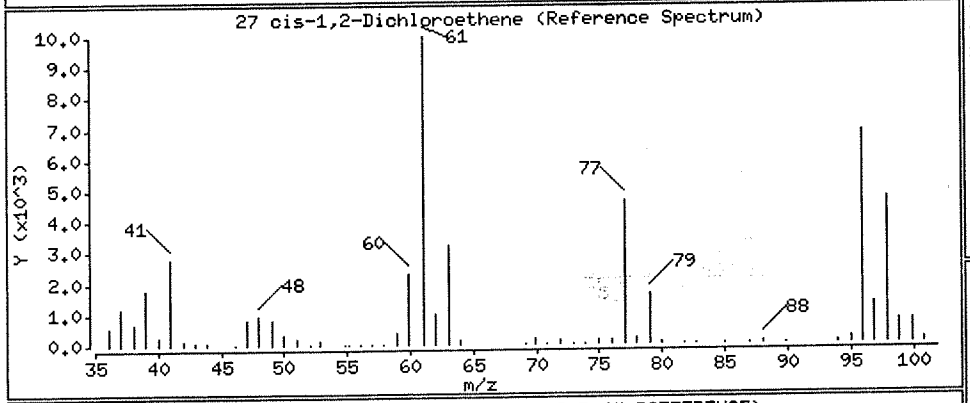
Concentration: 4589.88 ug/l

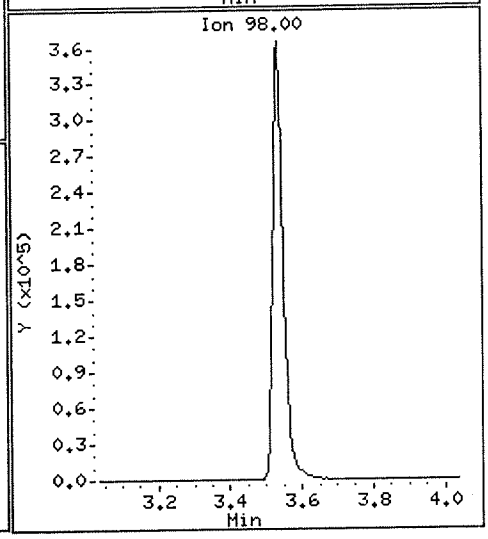


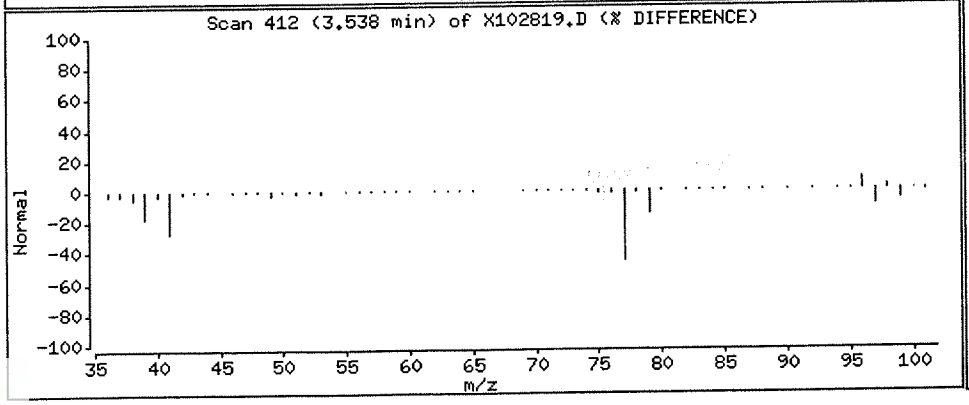












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D

Date : 28-OCT-2020 18:03

Client ID: HS20101079-06

Instrument: voa6.i

Sample Info: HS20101079-06;HS20101079-06;;;

Purge Volume: 5.0

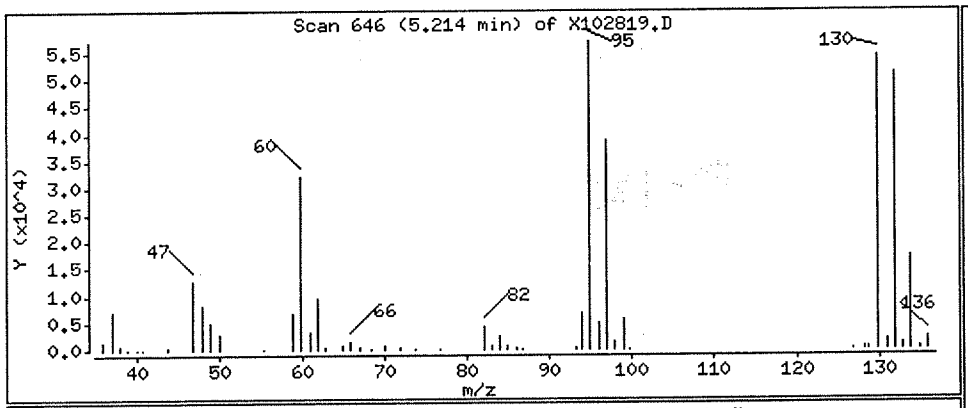
Operator: PC

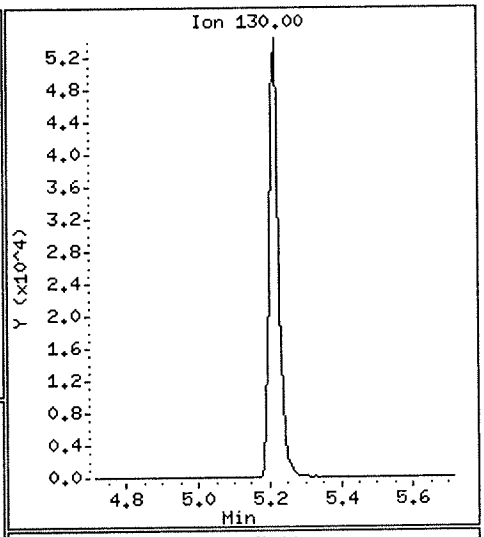
Column phase: DB624

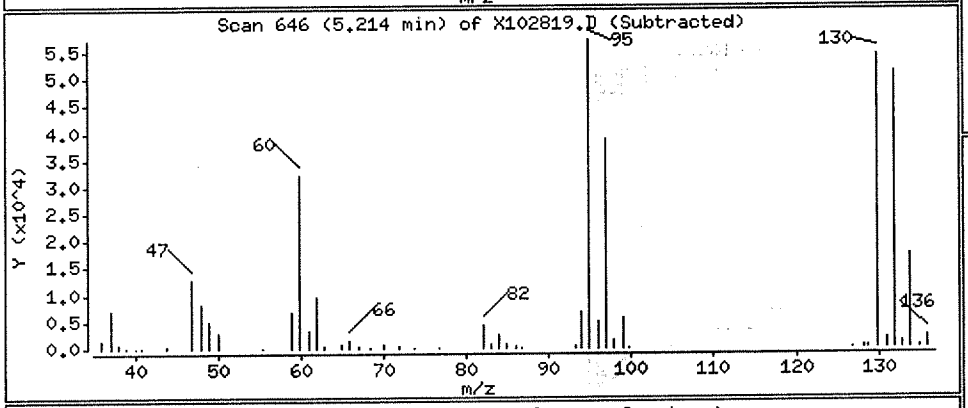
Column diameter: 0.18

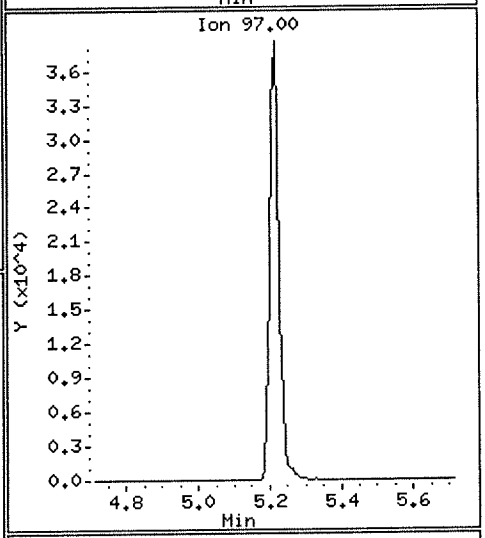
38 Trichloroethene

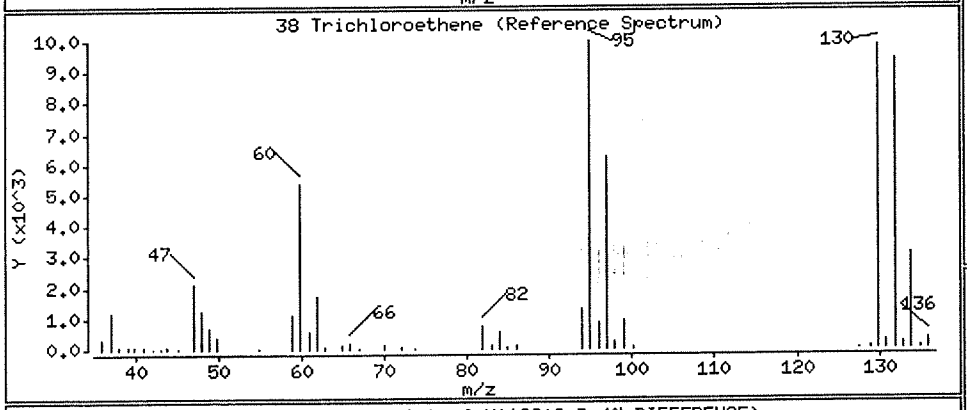
Concentration: 519.55 ug/l

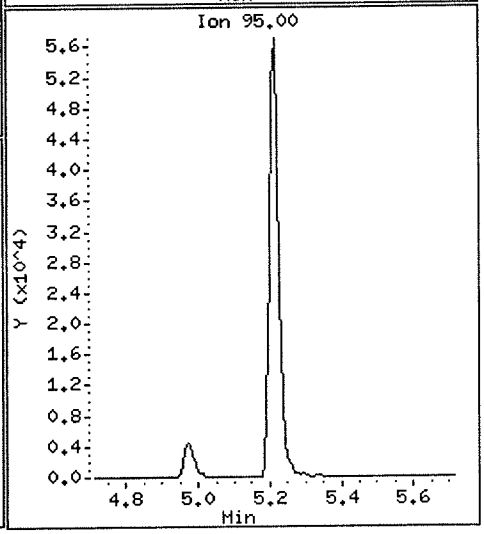


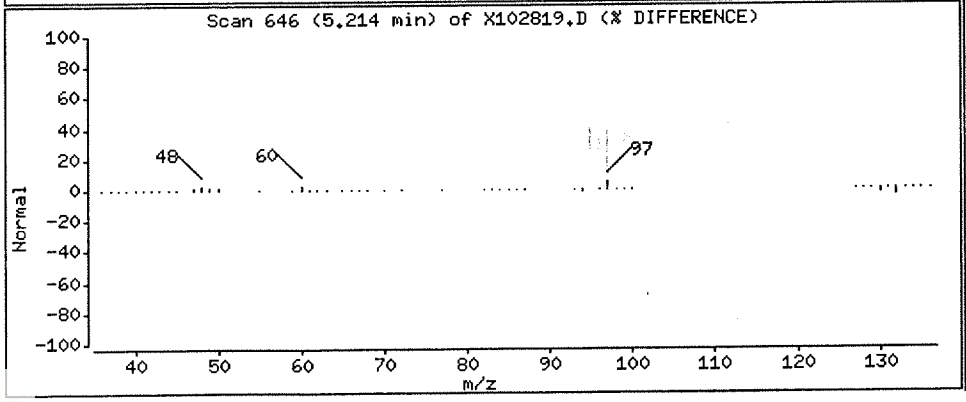






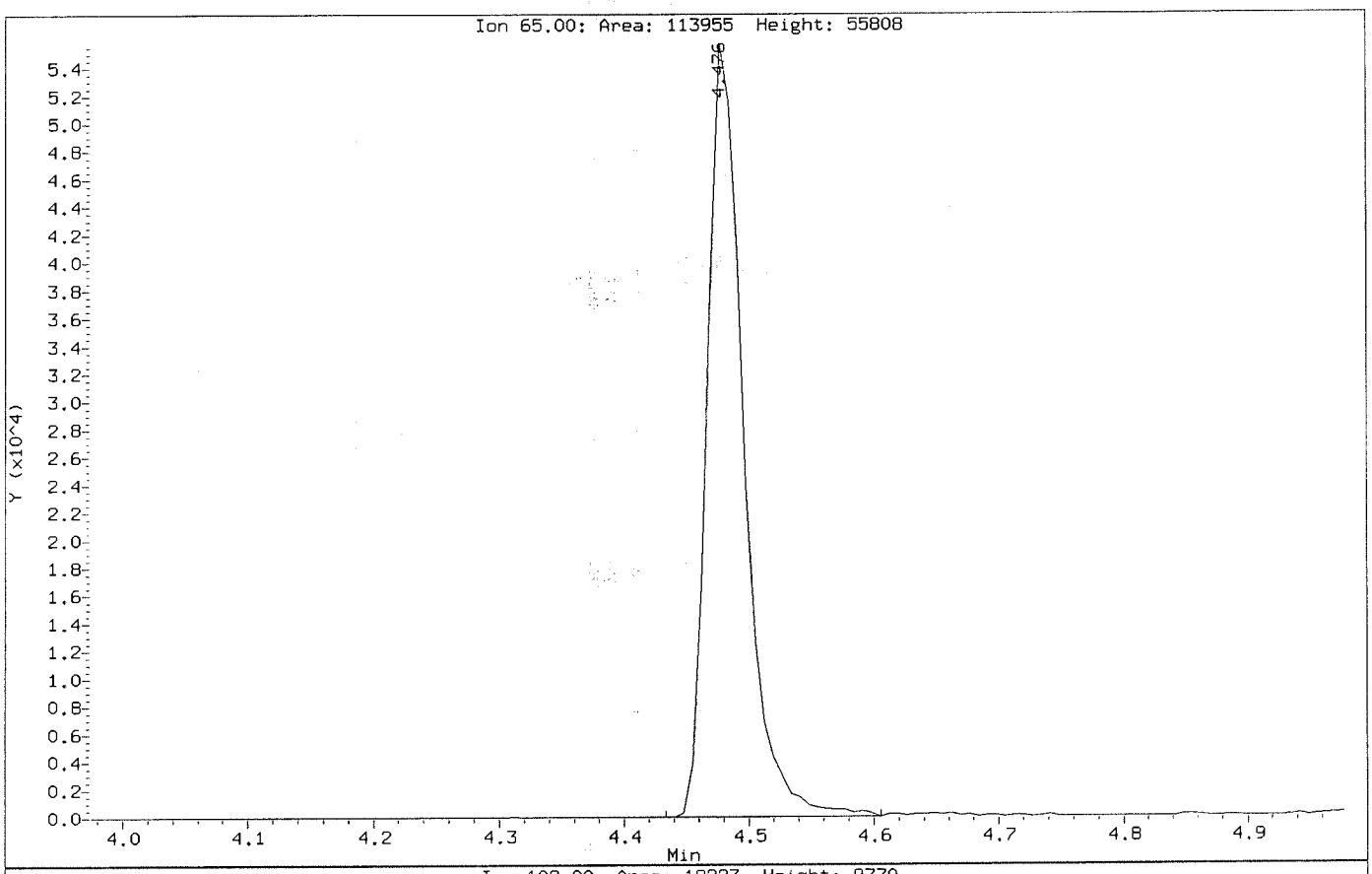


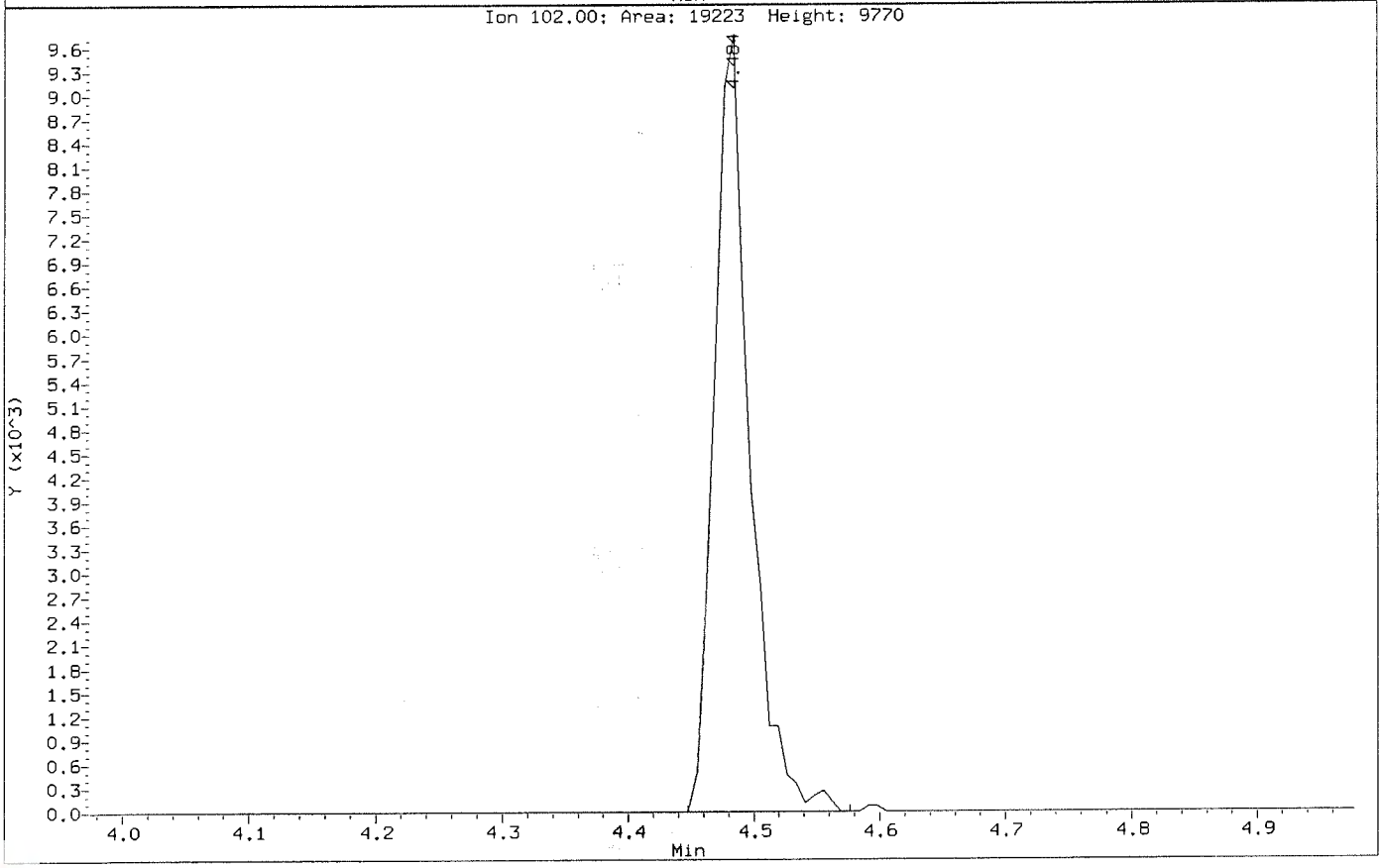




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102819.D
Injection Date: 28-OCT-2020 18:03
Instrument: voa6.i
Client Sample ID: HS20101079-06

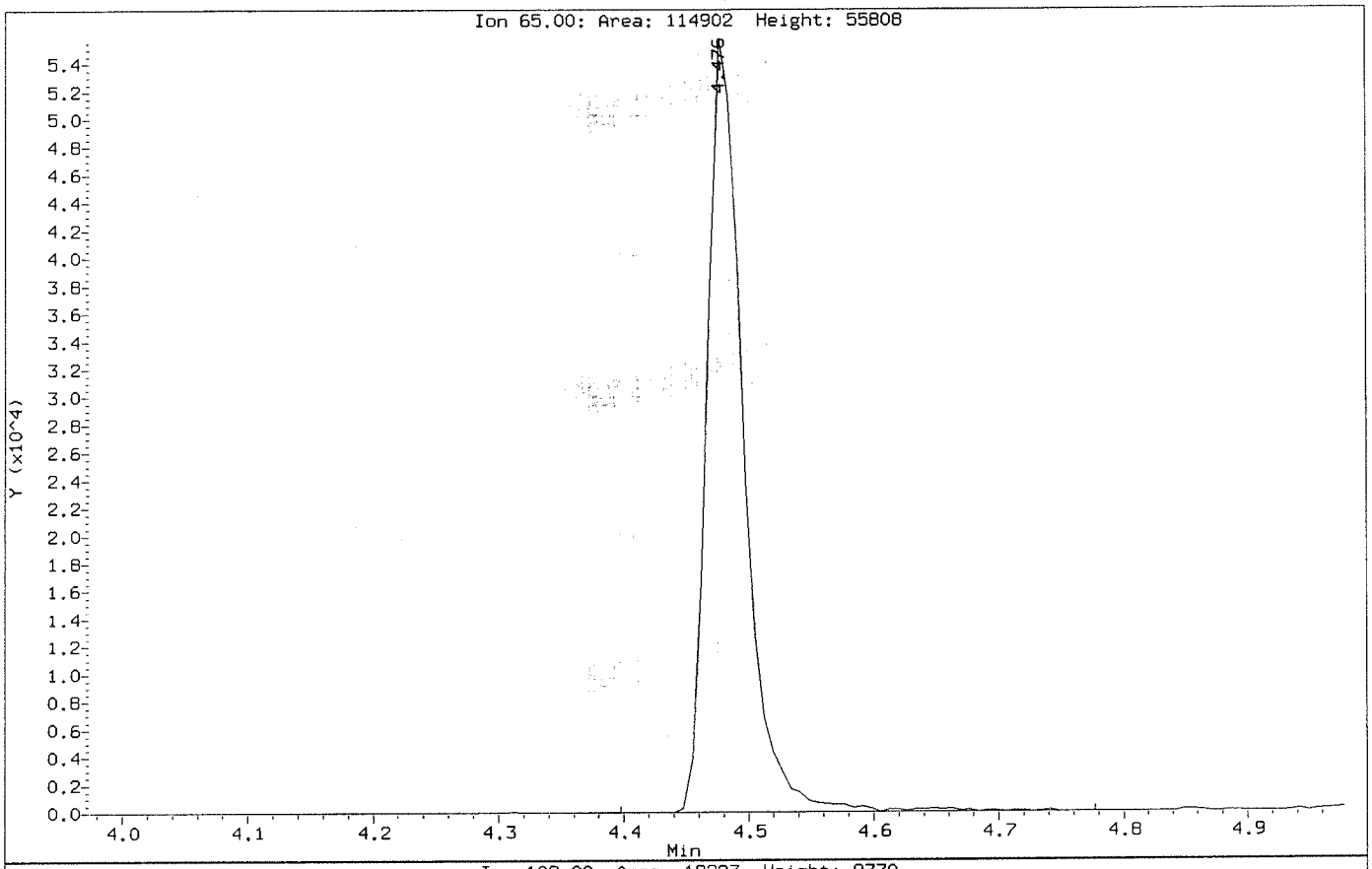
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

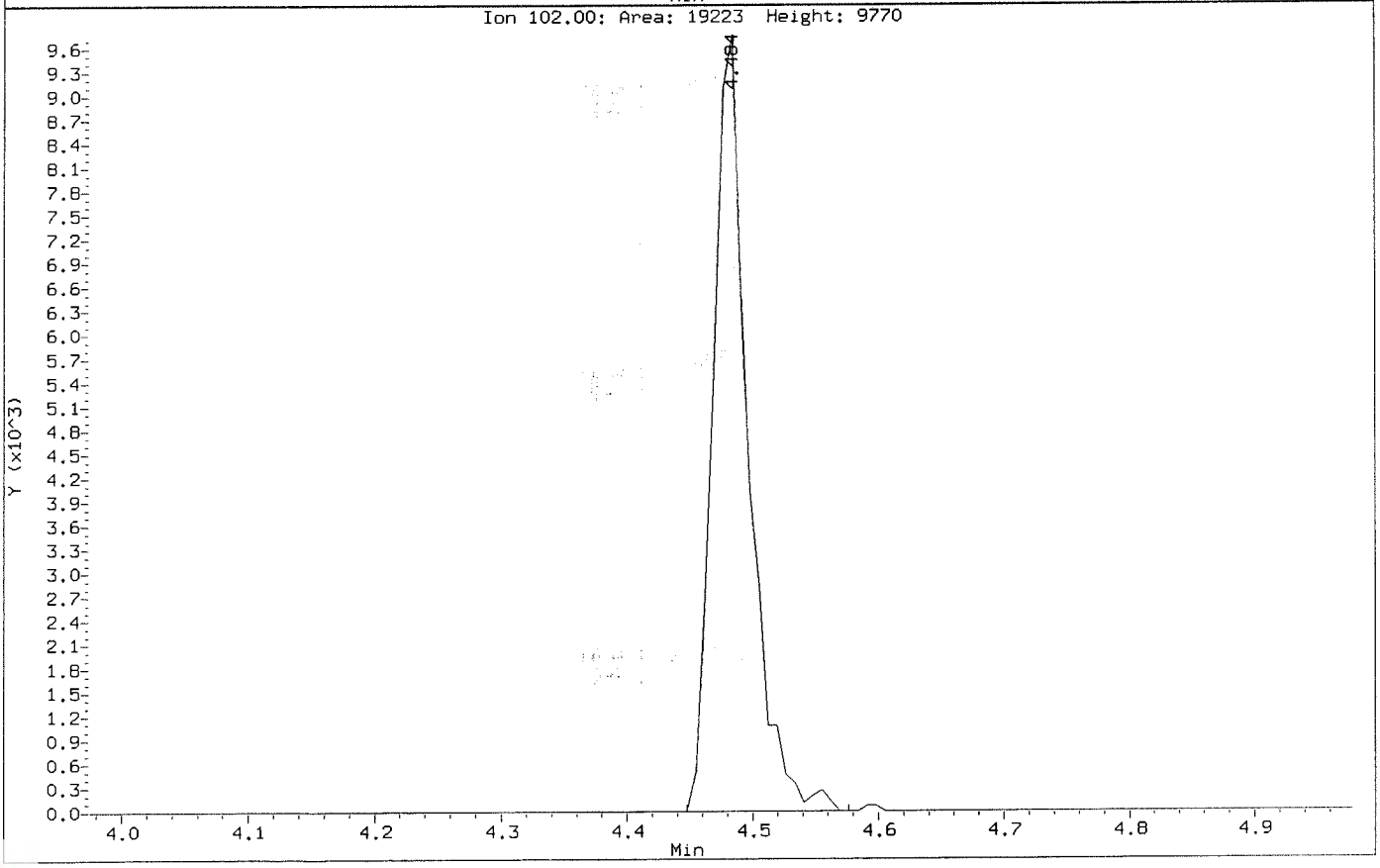




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102819.D
Injection Date: 28-OCT-2020 18:03
Instrument: voa6.i
Client Sample ID: HS20101079-06

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102820.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102820.D
Lab Smp Id: HS20101079-06 Client Smp ID: HS20101079-06
Inj Date : 28-OCT-2020 18:24
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-06;HS20101079-06;;;
Misc Info : HS18090001;WATER;0;100;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 19
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

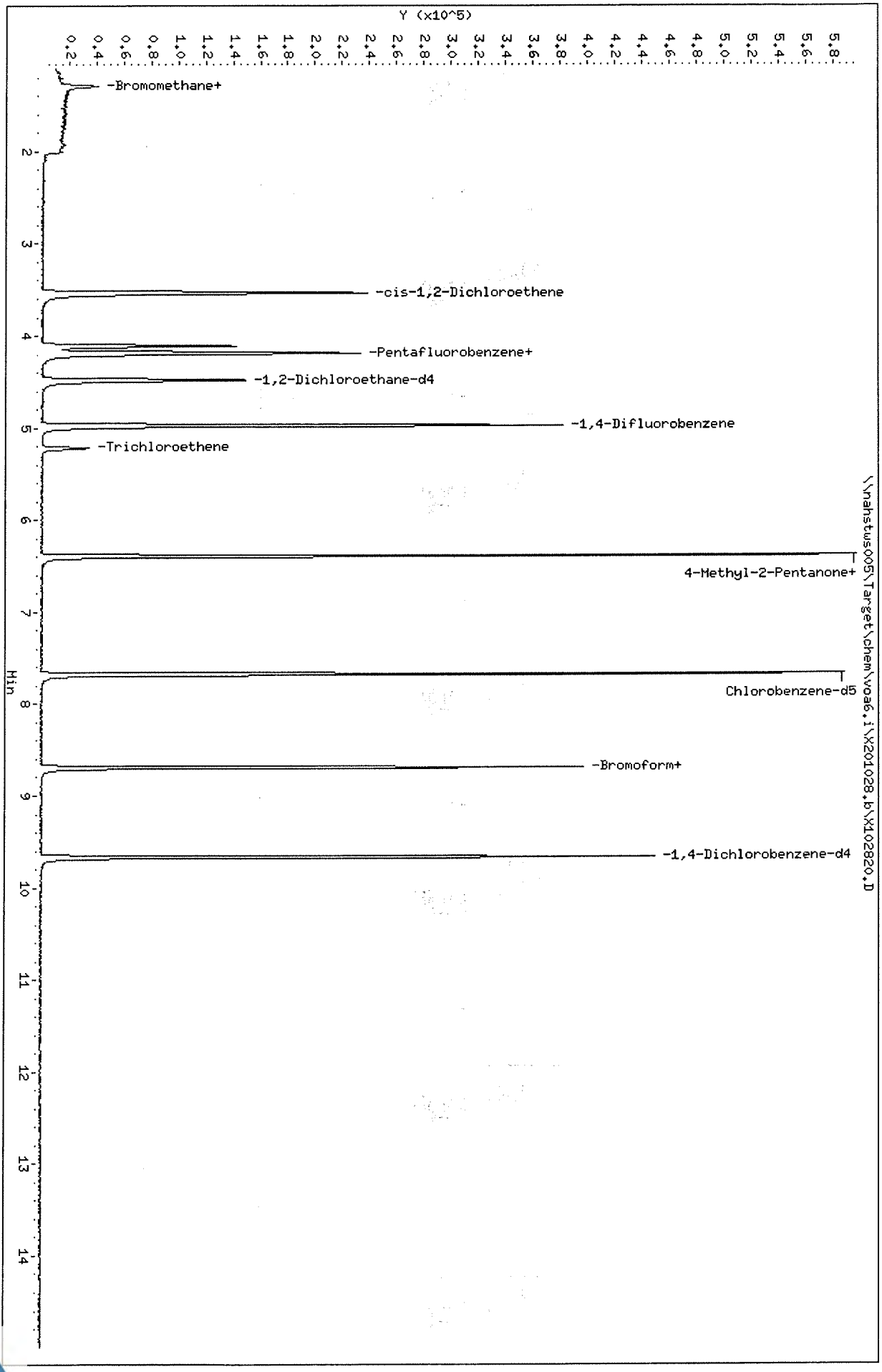
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	100.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	156244	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	275034	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	240323	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	91420	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	111584	40.7994	40.79(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	101217	44.2645	44.26
$ 30 Dibromofluoromethane	113	4.110	4.111	(0.981)	92277	42.9018	42.90
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	324280	47.9187	47.91
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	107209	43.8488	4384.87
38 Trichloroethene	130	5.214	5.214	(1.049)	9351	5.16922	516.92

QC Flag Legend

M - Compound response manually integrated.



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Date : 28-OCT-2020 18:24
Client ID: HS20101079-06
Sample Info: HS20101079-06;HS20101079-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102820.D

Date : 28-OCT-2020 18:24

Client ID: HS20101079-06

Instrument: voa6.i

Sample Info: HS20101079-06;HS20101079-06;;;

Purge Volume: 5.0

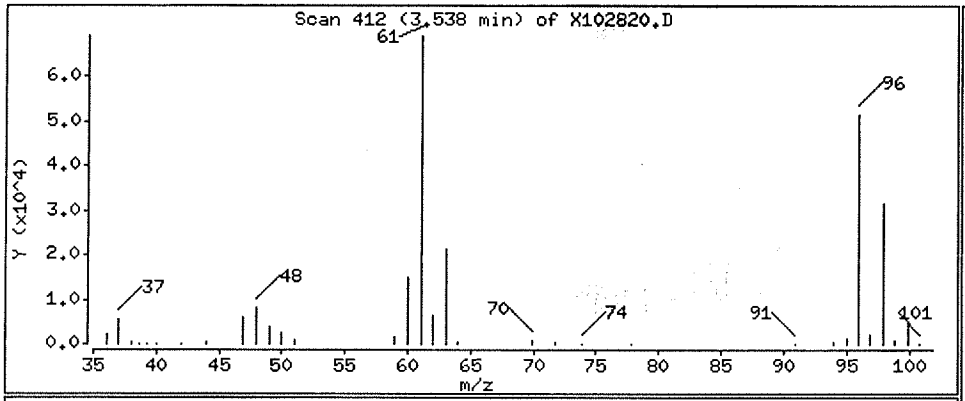
Operator: PC

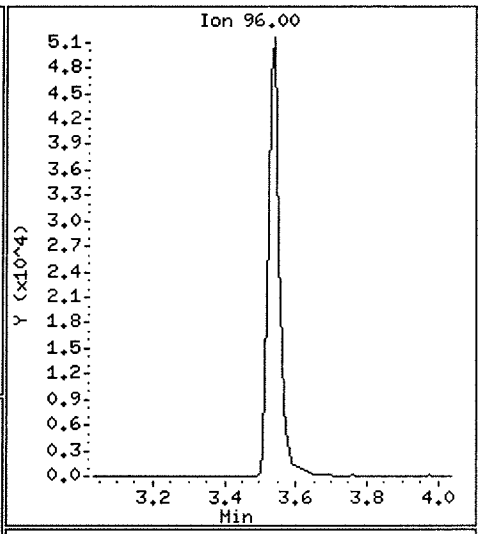
Column phase: DB624

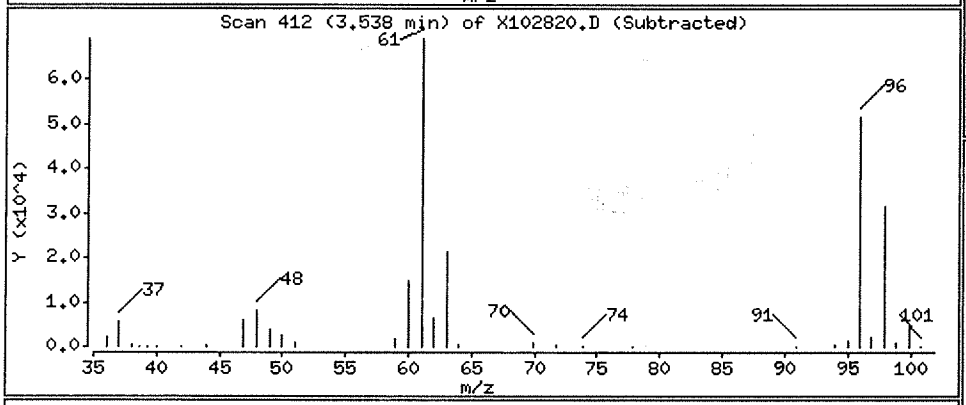
Column diameter: 0.18

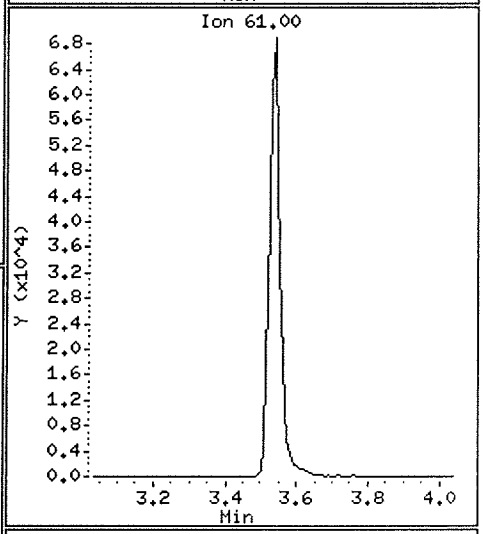
27 cis-1,2-Dichloroethene

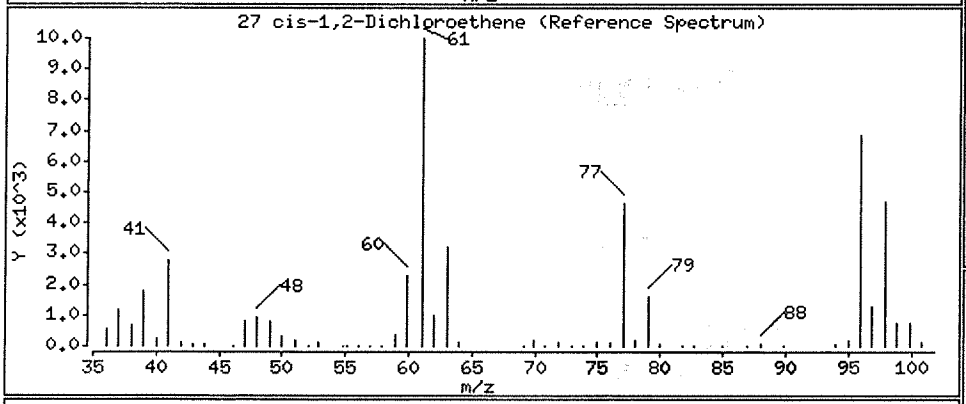
Concentration: 4384.87 ug/l

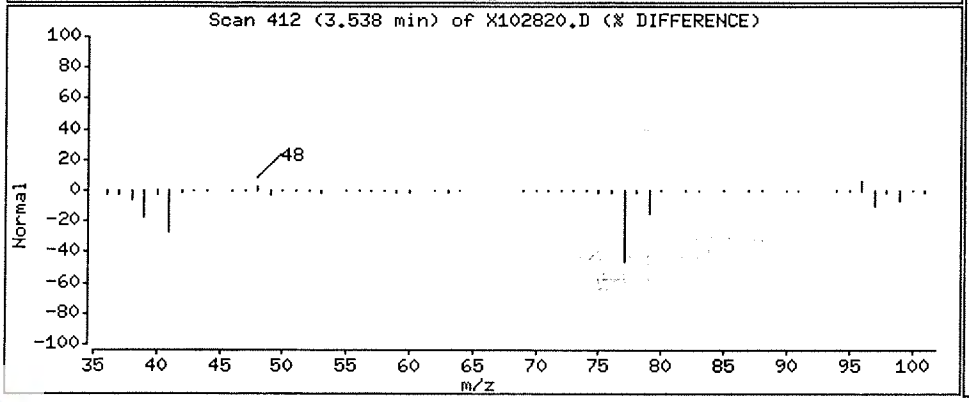


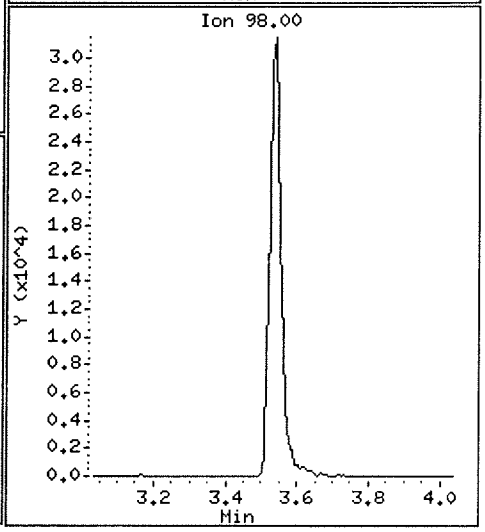












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102820.D Page 4

Date : 28-OCT-2020 18:24

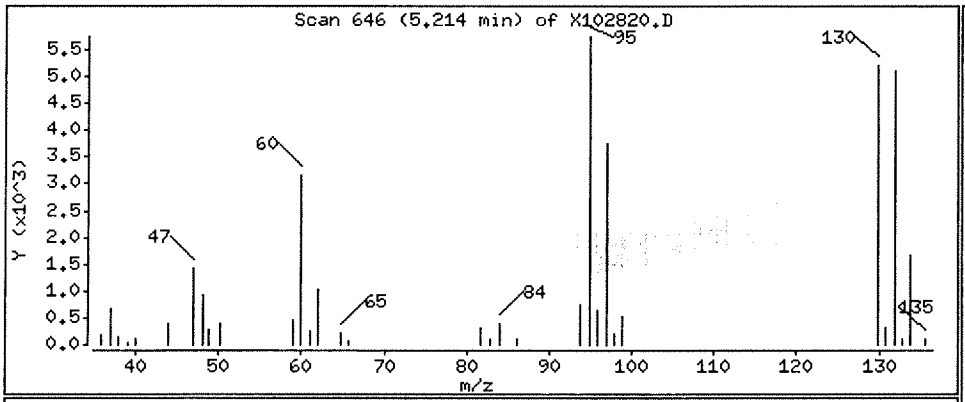
Client ID: HS20101079-06 Instrument: voa6.i

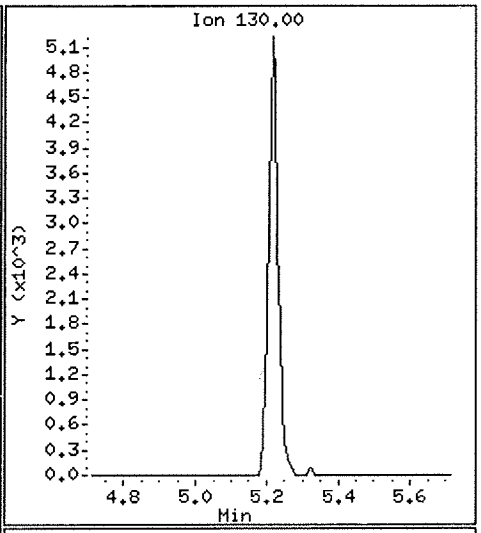
Sample Info: HS20101079-06;HS20101079-06;;;

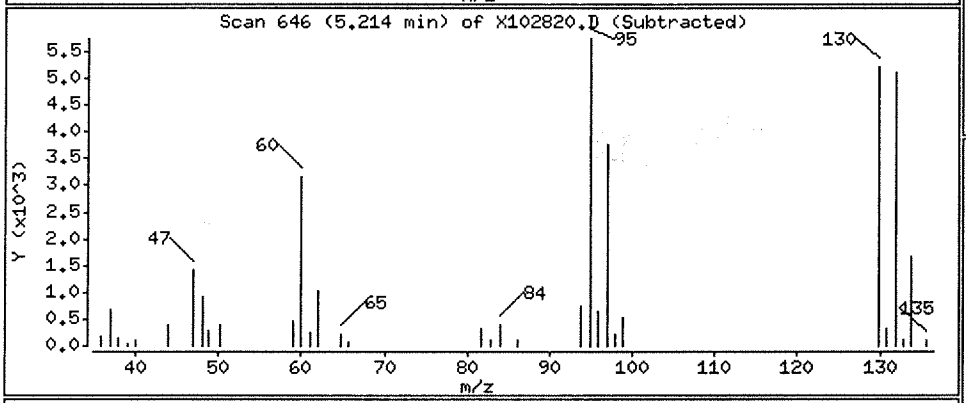
Purge Volume: 5.0 Operator: PC

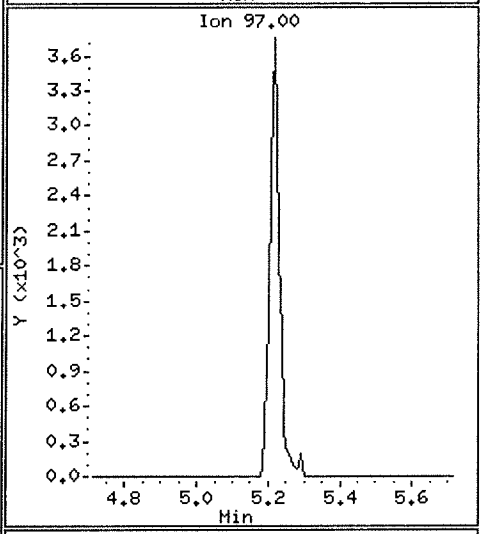
Column phase: DB624 Column diameter: 0.18

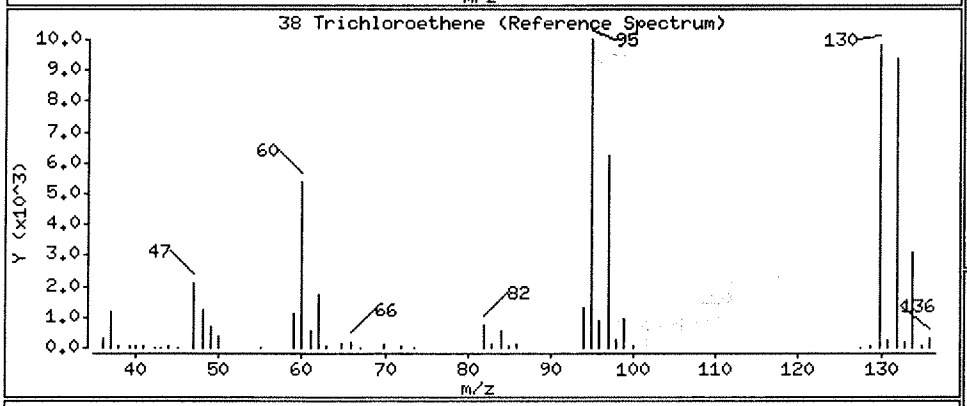
38 Trichloroethene Concentration: 516.92 ug/l

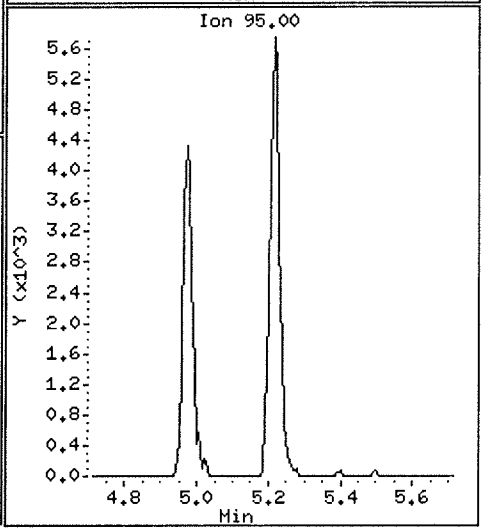


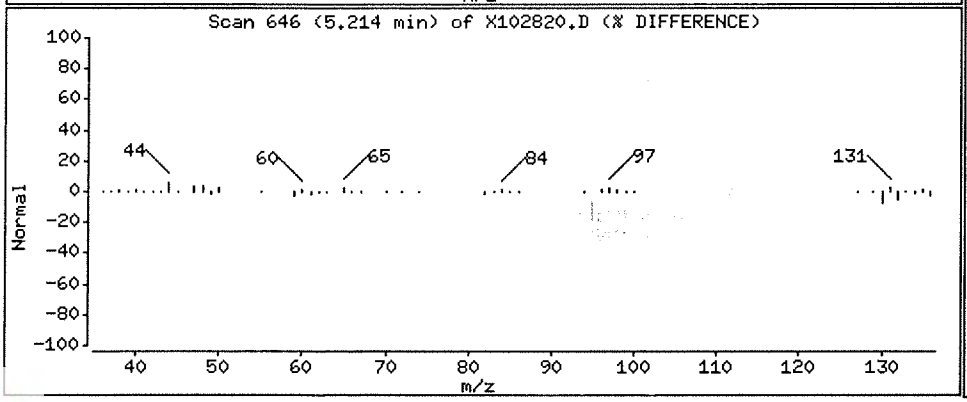






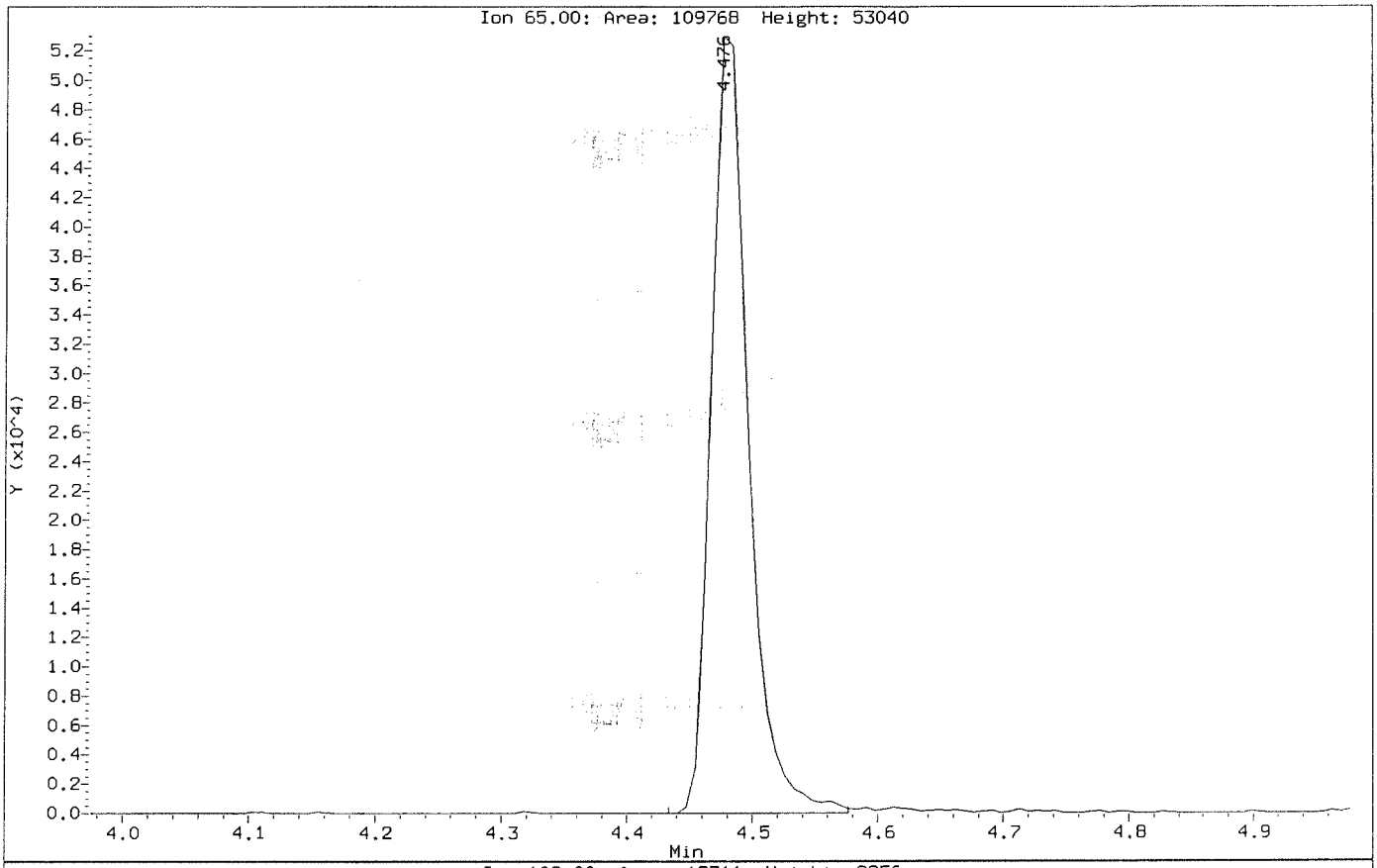


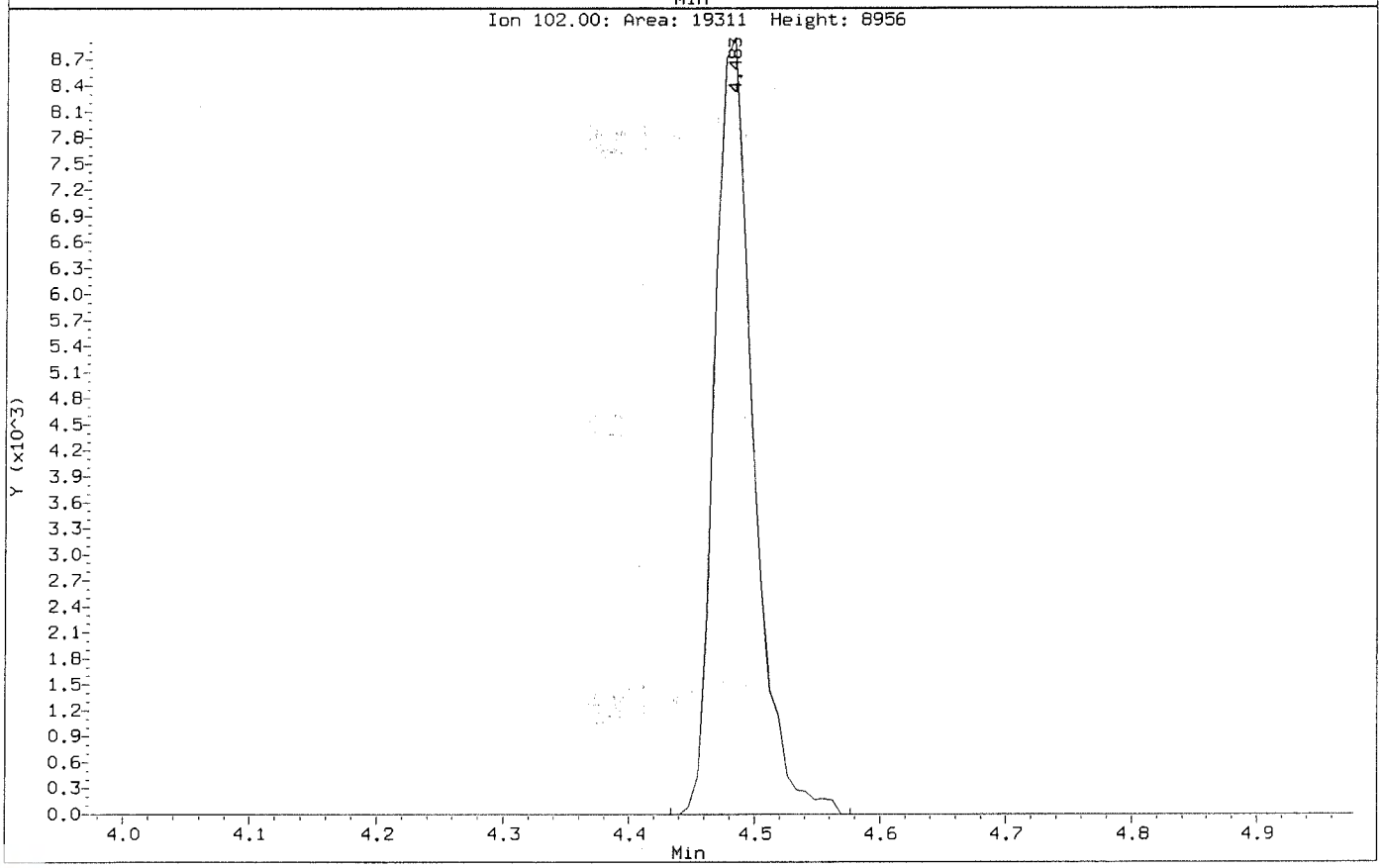




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102820.D
Injection Date: 28-OCT-2020 18:24
Instrument: voa6.i
Client Sample ID: HS20101079-06

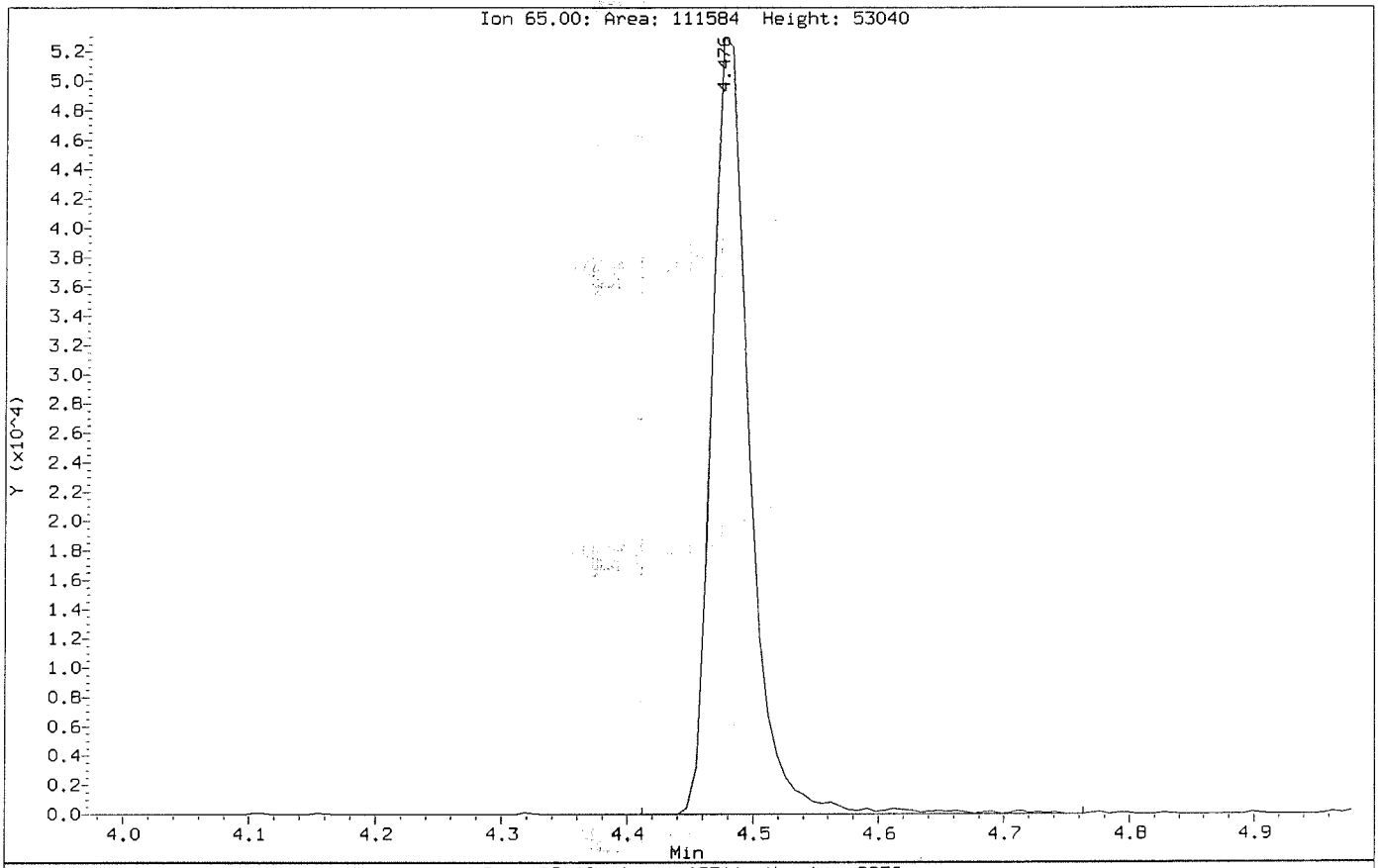
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

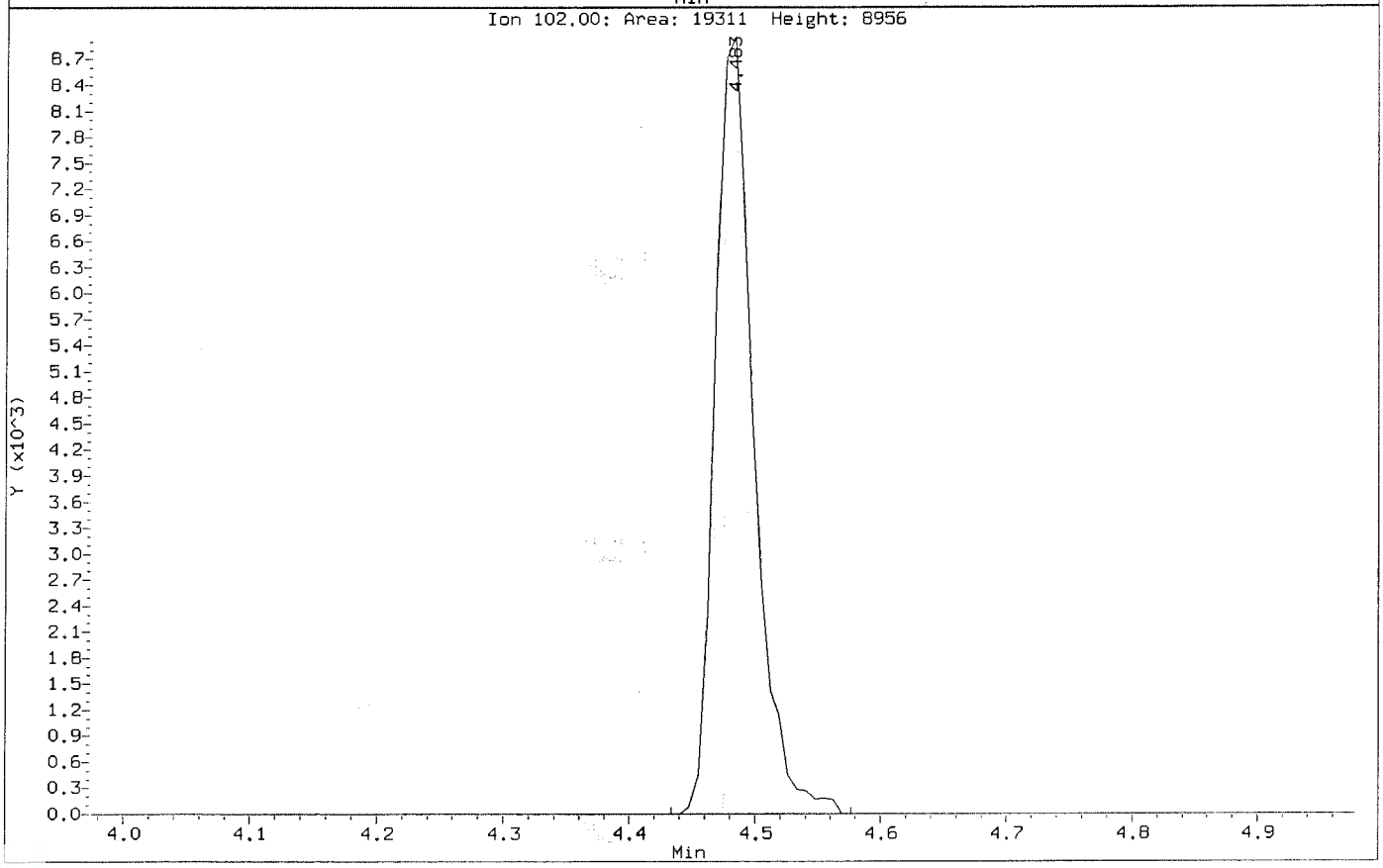




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102820.D
Injection Date: 28-OCT-2020 18:24
Instrument: voa6.i
Client Sample ID: HS20101079-06

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102821.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102821.D
Lab Smp Id: HS20101079-07 Client Smp ID: HS20101079-07
Inj Date : 28-OCT-2020 18:45
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-07;HS20101079-07;;;
Misc Info : HS18090001;WATER;0;10;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 20
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

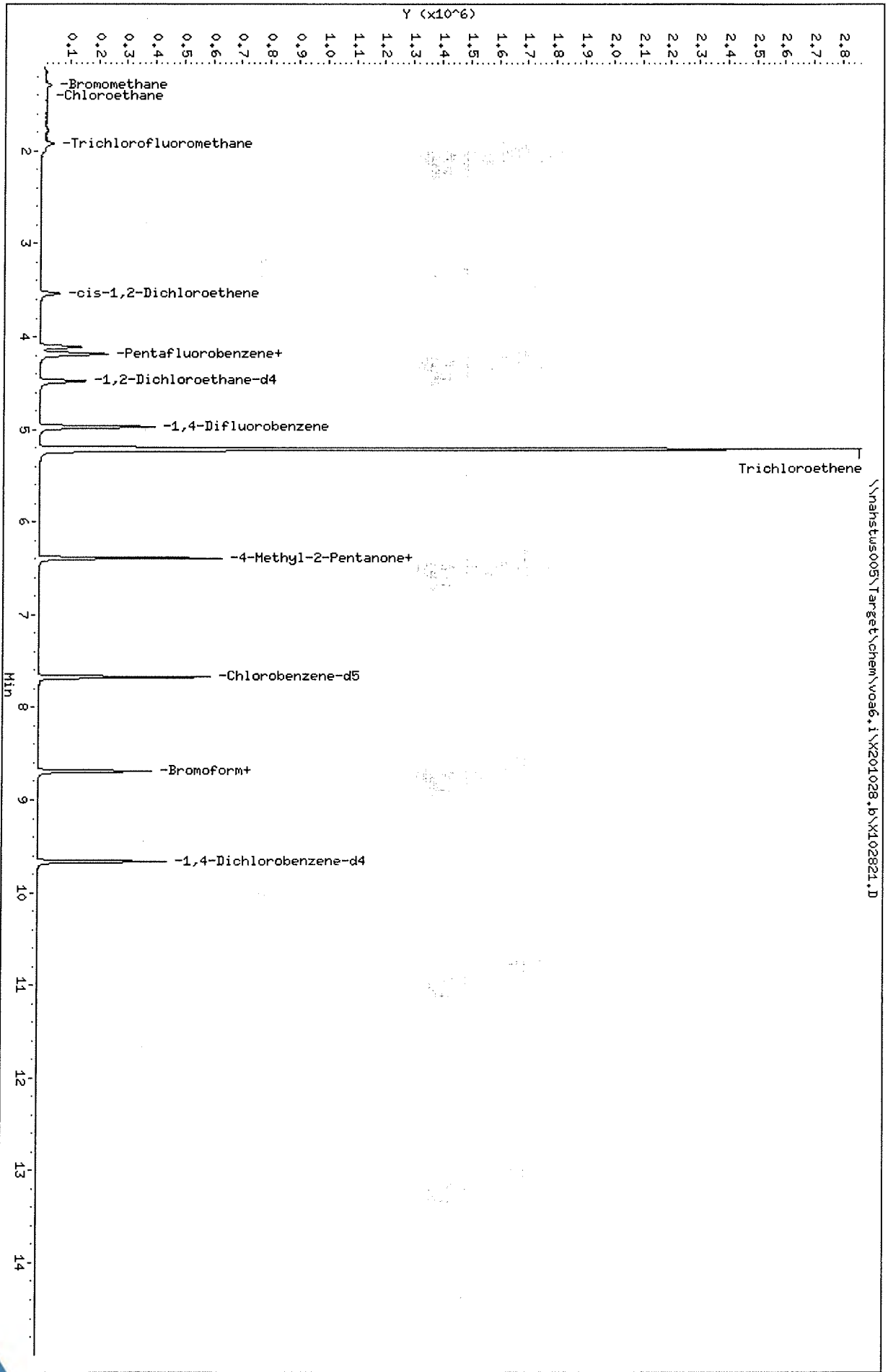
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161426	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287482	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	242310	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	87066	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	115273	40.7952	40.79
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	98343	42.7274	42.72
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	93352	42.0083	42.00
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	337874	49.4606	49.46
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.844)	31441	12.4466	124.46
38 Trichloroethene	130	5.214	5.214	(1.049)	773016	408.819	4088.19(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102821.D
Date : 28-OCT-2020 18:45
Client ID: HS20101079-07
Sample Info: HS20101079-07;HS20101079-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102821.D

Date : 28-OCT-2020 18:45

Client ID: HS20101079-07

Instrument: voa6.i

Sample Info: HS20101079-07;HS20101079-07;;;

Purge Volume: 5.0

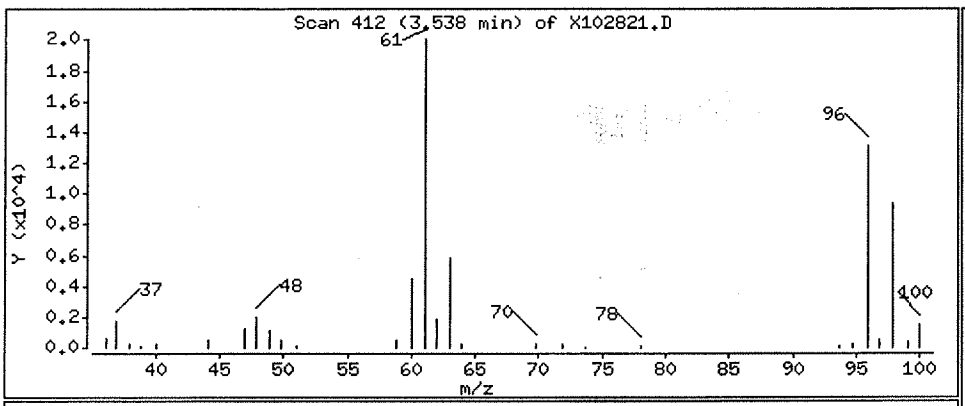
Operator: PC

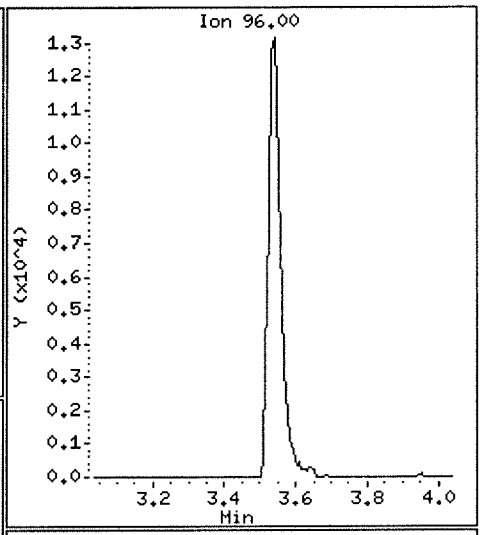
Column phase: DB624

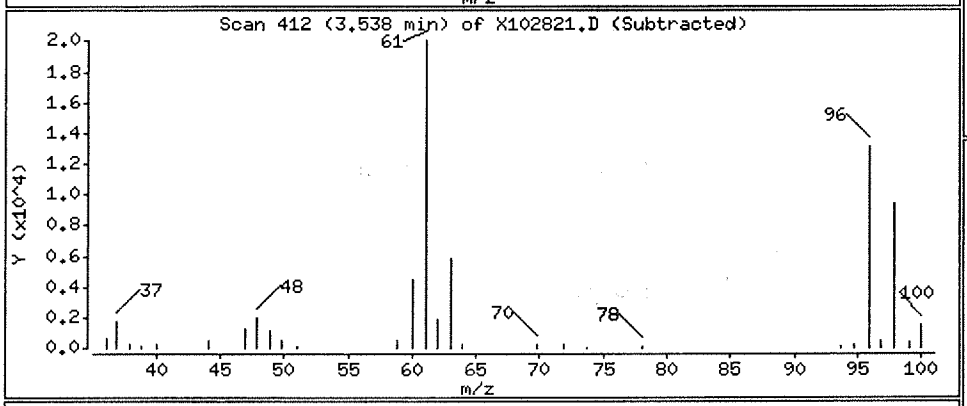
Column diameter: 0.18

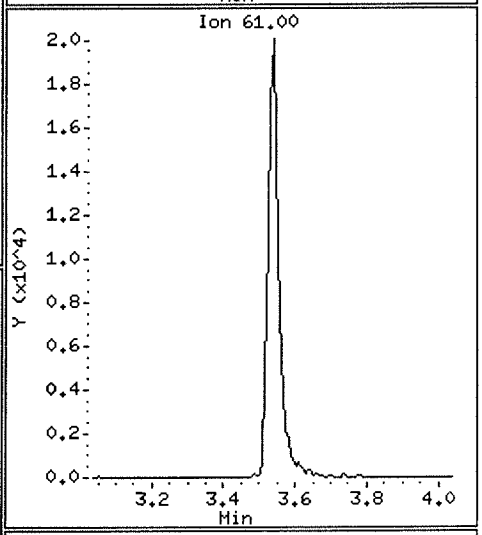
27 cis-1,2-Dichloroethene

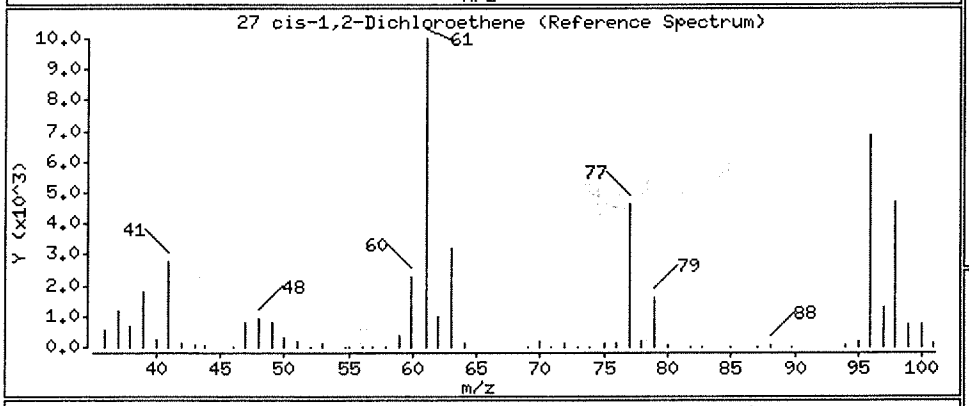
Concentration: 124.46 ug/l

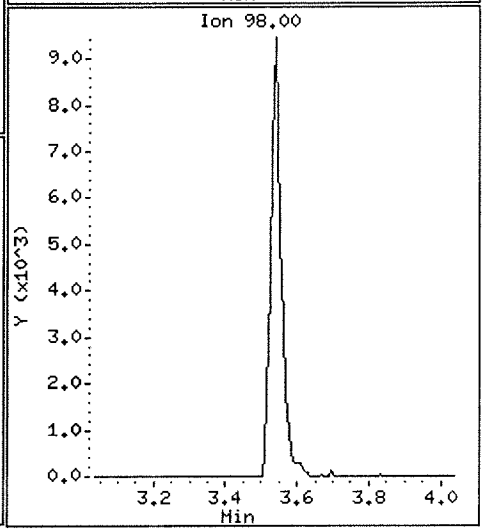


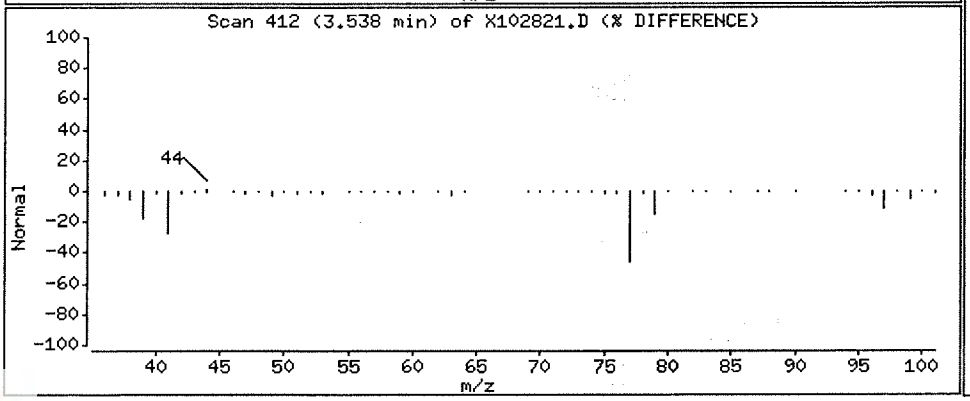












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102821.D

Date : 28-OCT-2020 18:45

Client ID: HS20101079-07

Instrument: voa6.i

Sample Info: HS20101079-07;HS20101079-07;;;

Purge Volume: 5.0

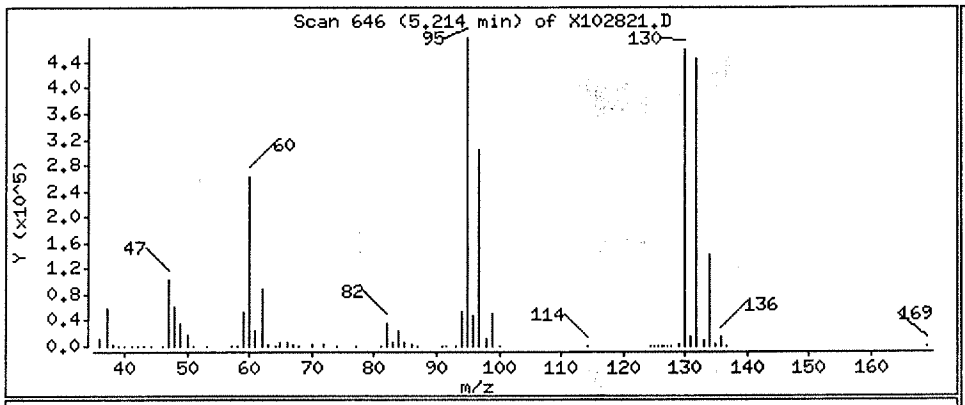
Operator: PC

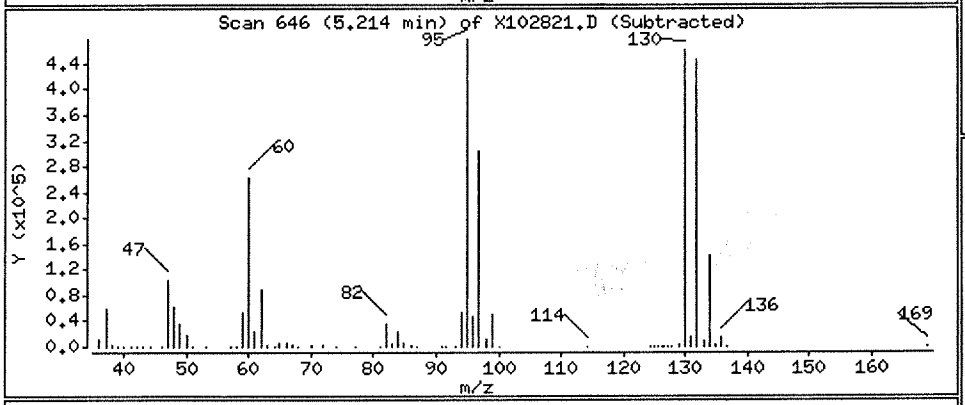
Column phase: DB624

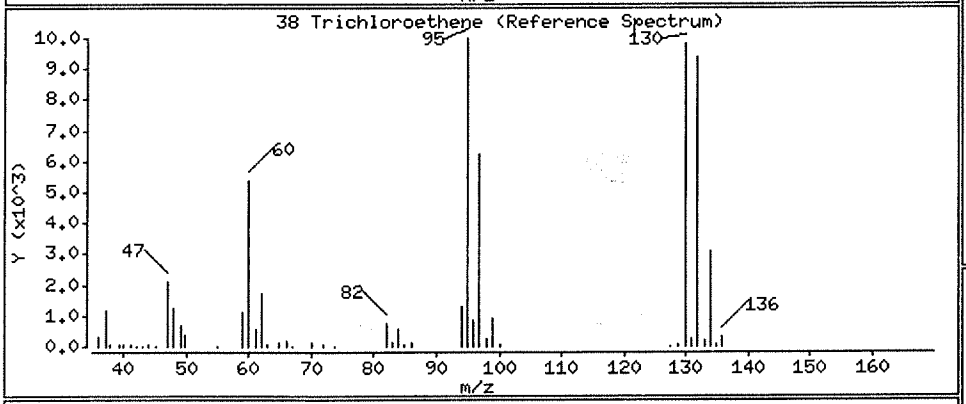
Column diameter: 0.18

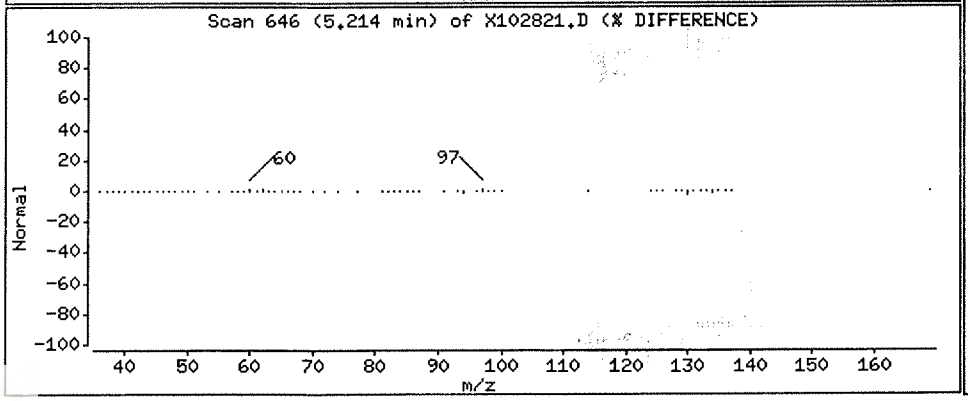
38 Trichloroethene

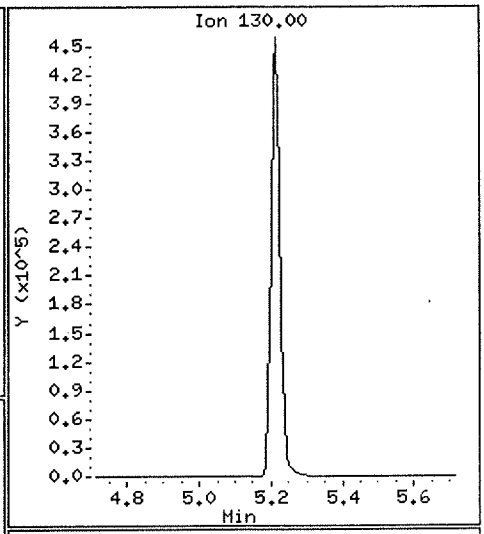
Concentration: 4088.19 ug/l

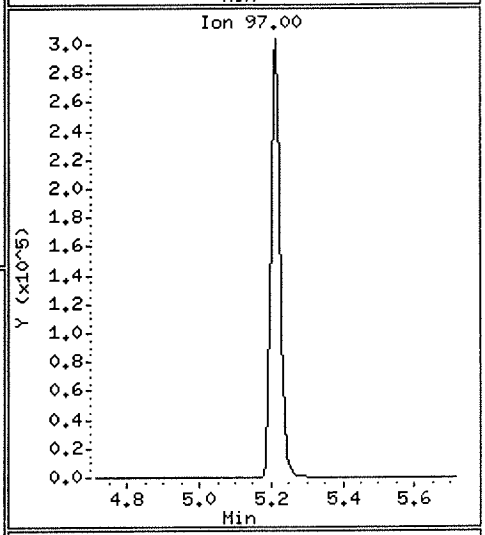


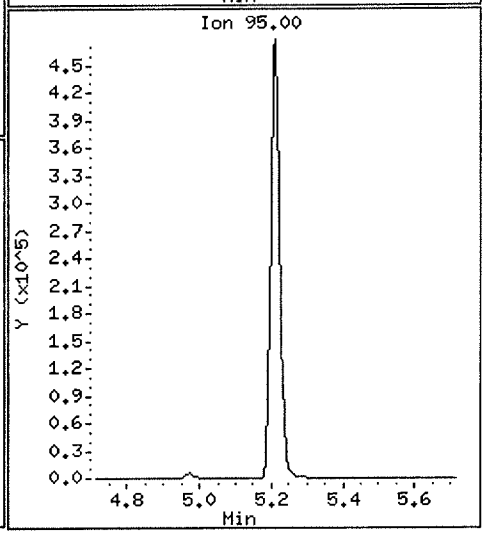












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102822.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102822.D
Lab Smp Id: HS20101079-07 Client Smp ID: HS20101079-07
Inj Date : 28-OCT-2020 19:06
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-07;HS20101079-07;;;
Misc Info : HS18090001;WATER;0;100;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 21
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

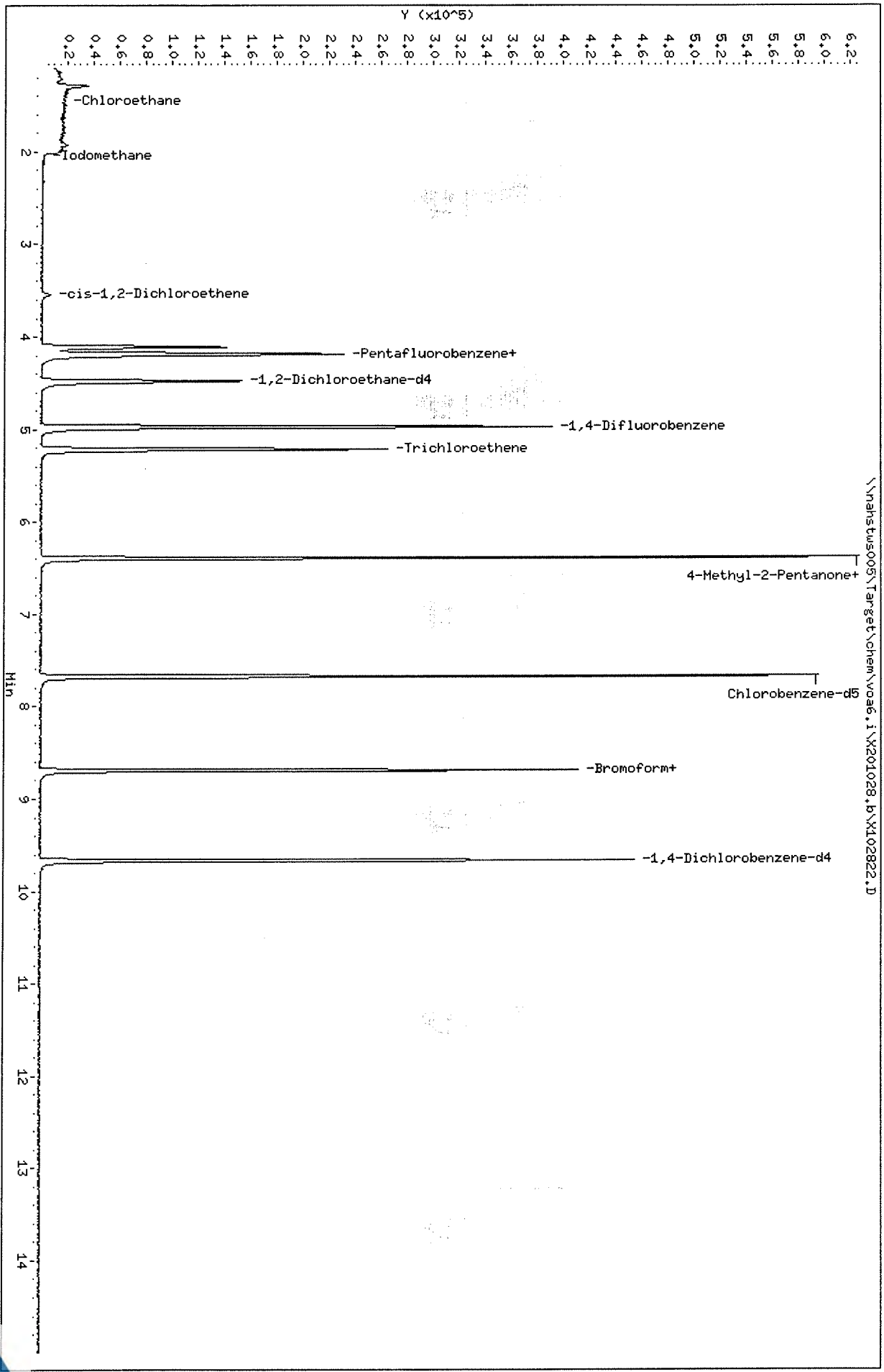
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	100.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	153311	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	275526	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	243215	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	92179	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	113882	42.4350	42.43
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	102741	44.3907	44.39
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	91273	43.2468	43.24
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	330173	48.1989	48.19
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	3533	1.47265	147.26(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	72338	39.9170	3991.69

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102822.D
Date : 28-OCT-2020 19:06
Client ID: HS20101079-07
Sample Info: HS20101079-07;HS20101079-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102822.D

Date : 28-OCT-2020 19:06

Client ID: HS20101079-07

Instrument: voa6.i

Sample Info: HS20101079-07;HS20101079-07;;;

Purge Volume: 5.0

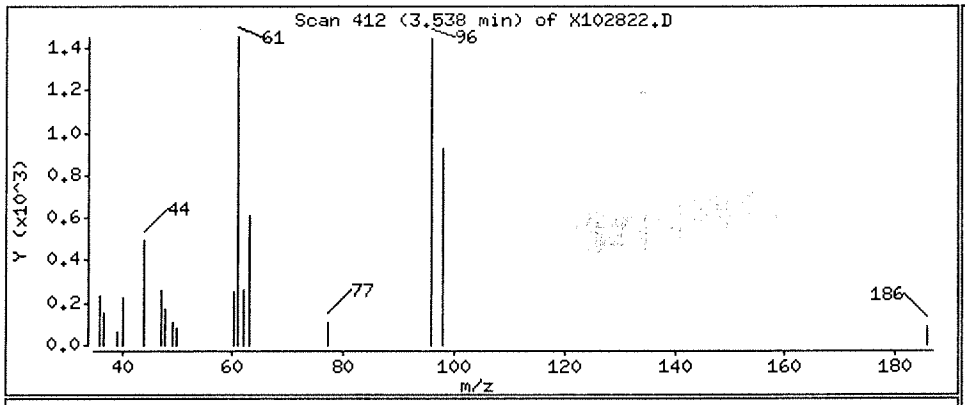
Operator: PC

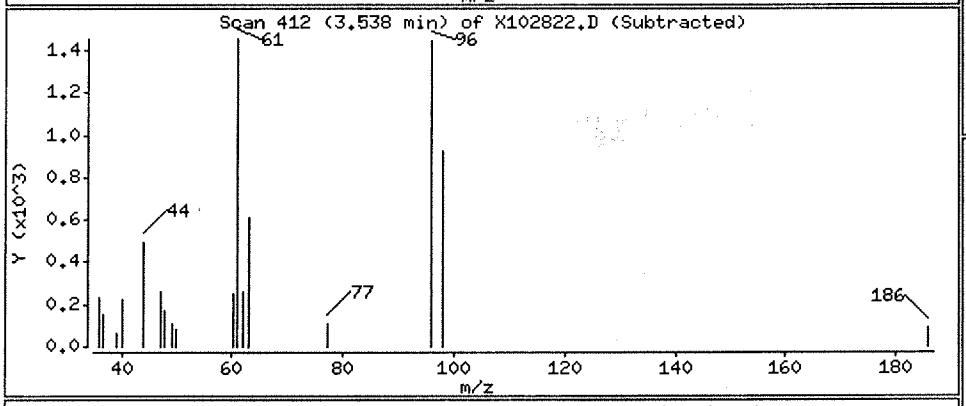
Column phase: DB624

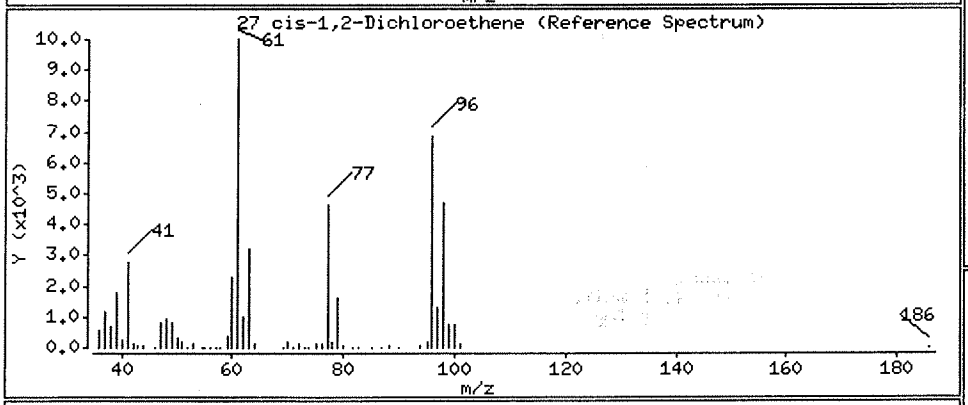
Column diameter: 0.18

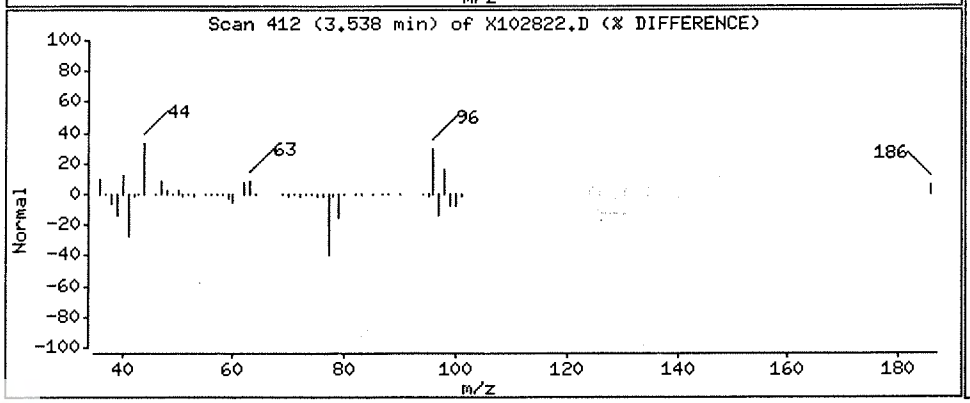
27 cis-1,2-Dichloroethene

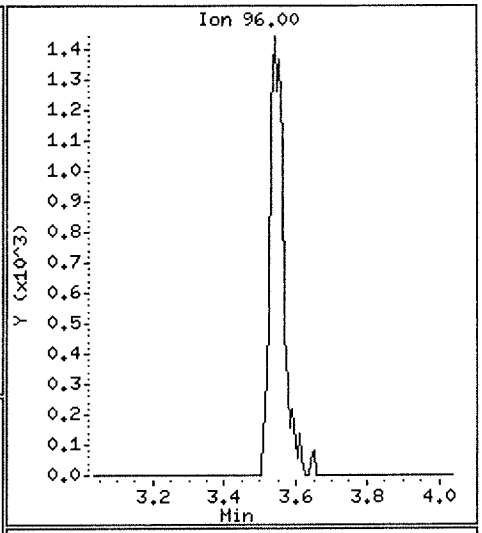
Concentration: 147.26 ug/l

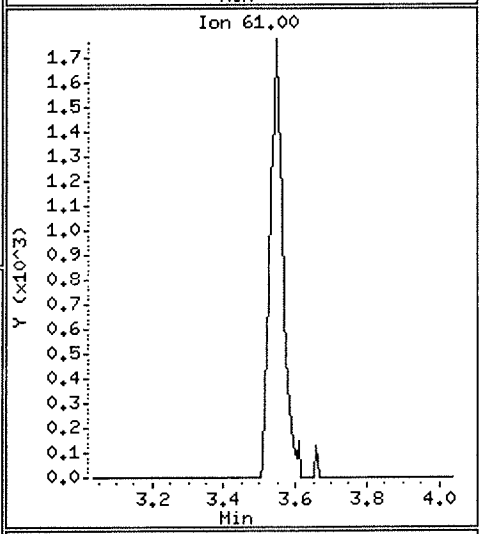


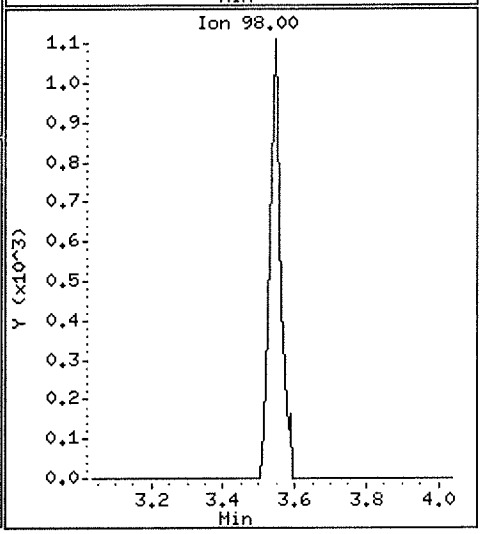












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102822.D

Date : 28-OCT-2020 19:06

Client ID: HS20101079-07

Instrument: voa6.i

Sample Info: HS20101079-07;HS20101079-07;;;

Purge Volume: 5.0

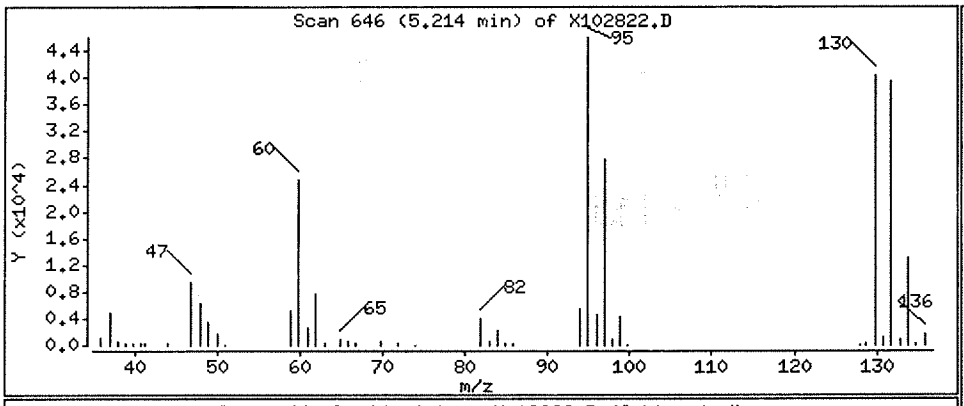
Operator: PC

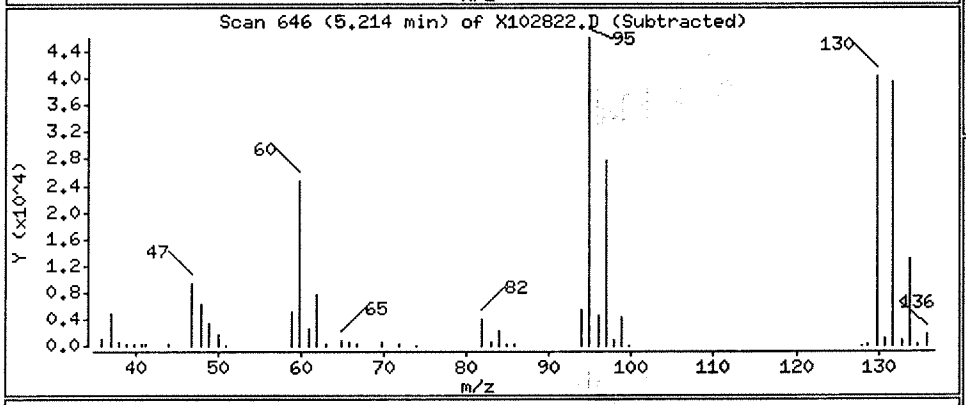
Column phase: DB624

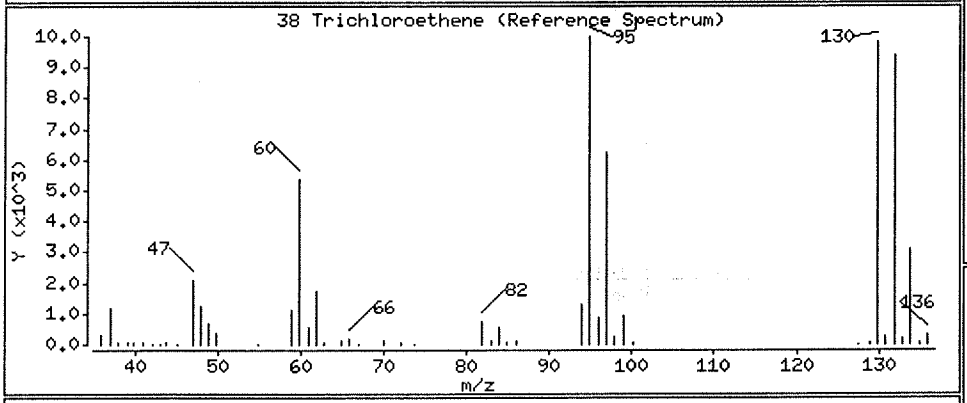
Column diameter: 0.18

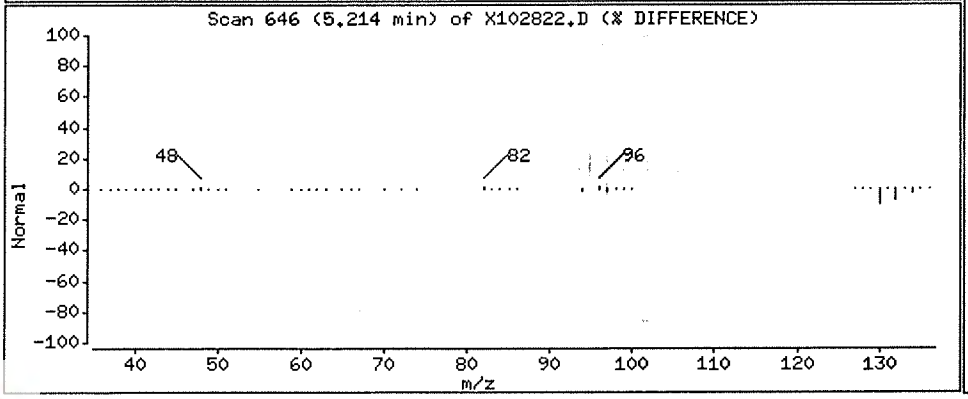
38 Trichloroethene

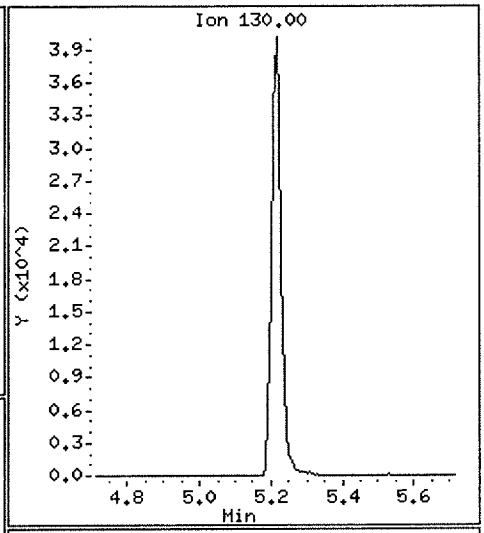
Concentration: 3991.69 ug/l

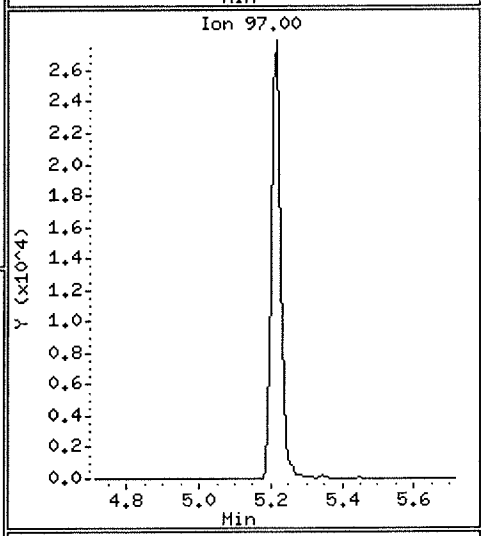


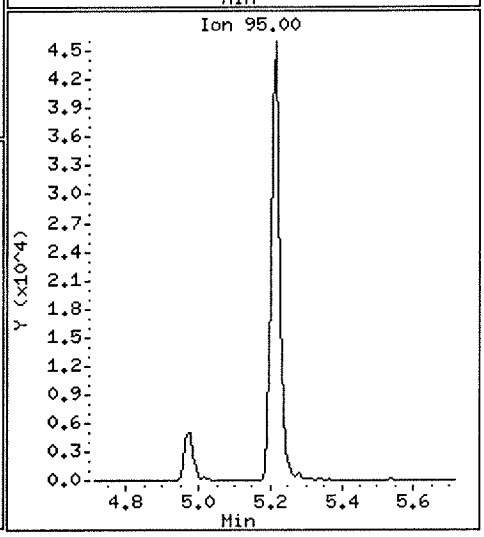












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D
Lab Smp Id: HS20101079-01 Client Smp ID: HS20101079-01
Inj Date : 28-OCT-2020 19:27
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-01;HS20101079-01;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 22
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

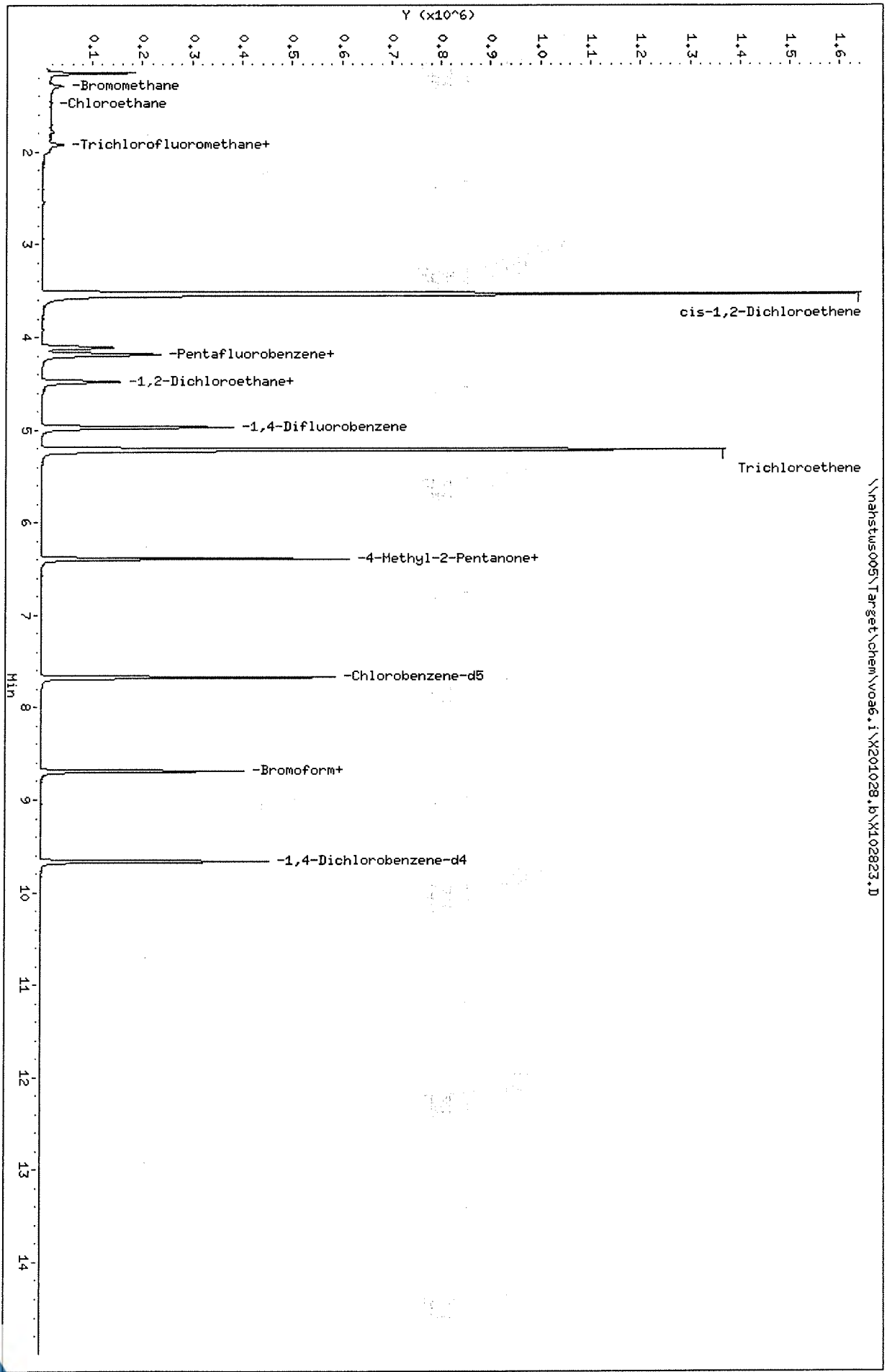
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	159695	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	278669	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	238201	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	89498	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	114619	41.0033	41.00
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	97385	43.0265	43.02
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	94342	42.9140	42.91
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	329544	49.0868	49.08
11 1,1-Dichloroethene	96	1.926	1.919	(0.460)	4451	1.14437	28.60(a)
33 1,2-Dichloroethane	62	4.576	4.562	(0.921)	3059	1.01637	25.40(a)
27 cis-1,2-Dichloroethene	96	3.530	3.538	(0.843)	742866	297.268	7431.70(A)
38 Trichloroethene	130	5.214	5.214	(1.049)	376786	205.570	5139.25(A)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	123417	25.1385	628.46

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D
Date : 28-OCT-2020 19:27
Client ID: HS20101079-01
Sample Info: HS20101079-01;HS20101079-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D

Date : 28-OCT-2020 19:27

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

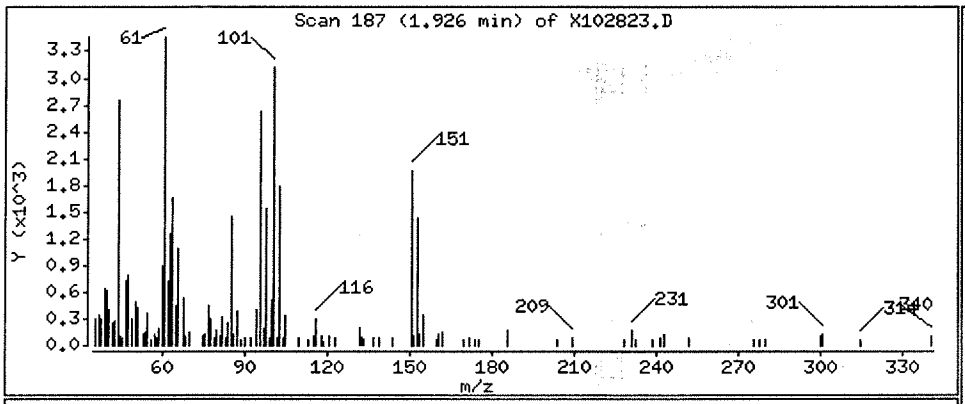
Operator: PC

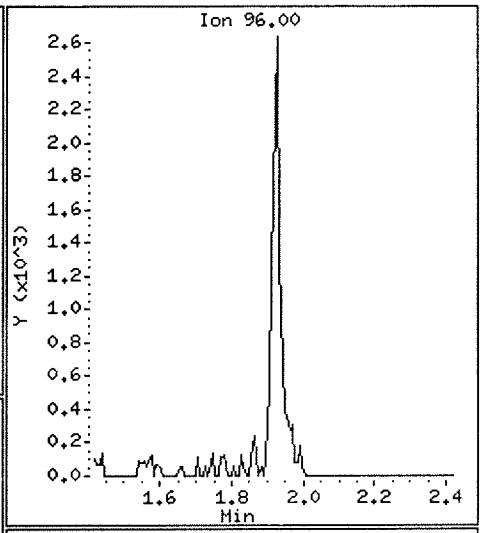
Column phase: DB624

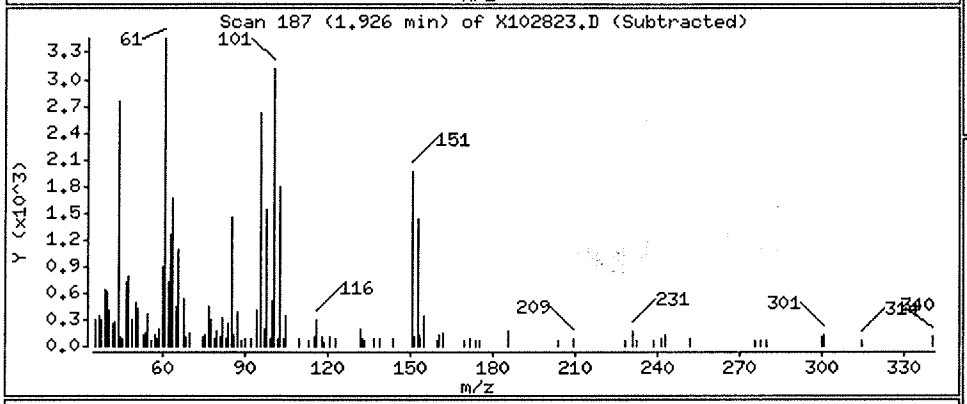
Column diameter: 0.18

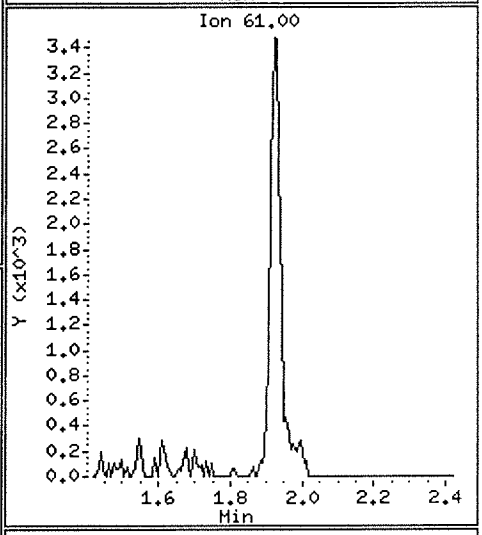
11 1,1-Dichloroethene

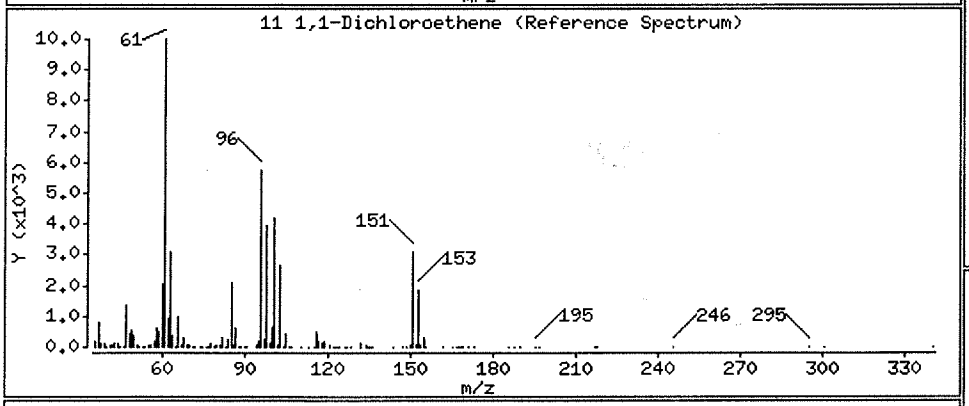
Concentration: 28.60 ug/l

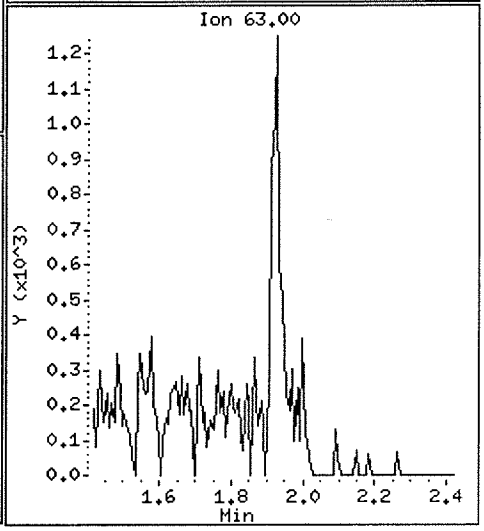


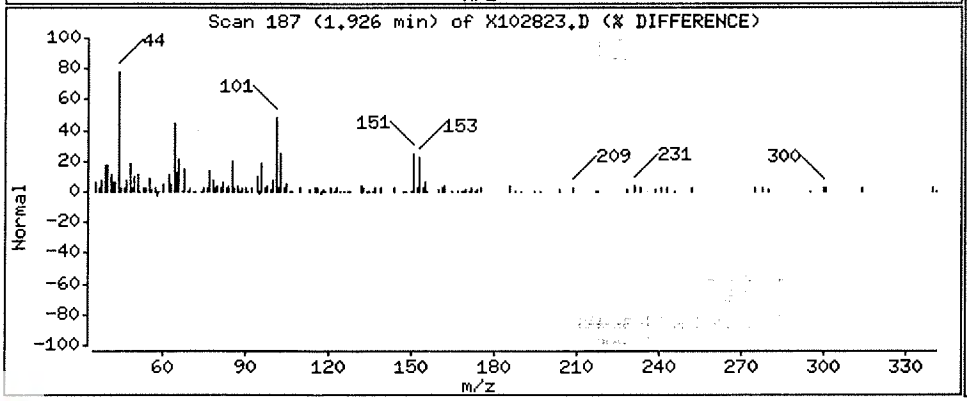












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D

Date : 28-OCT-2020 19:27

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

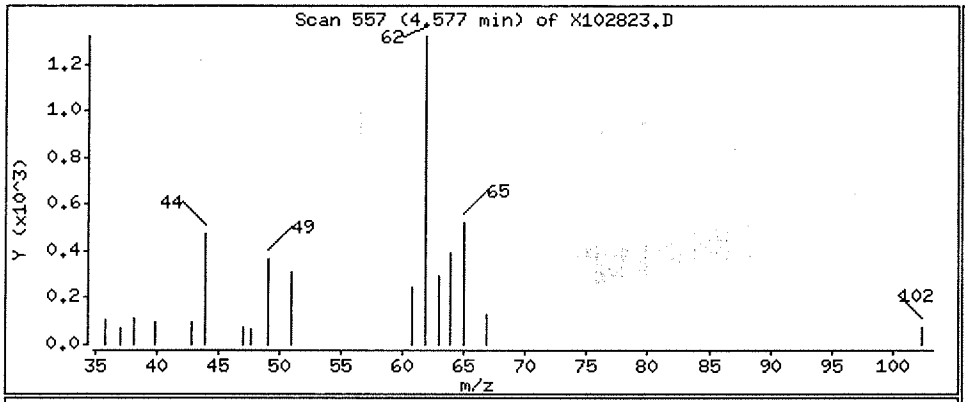
Operator: PC

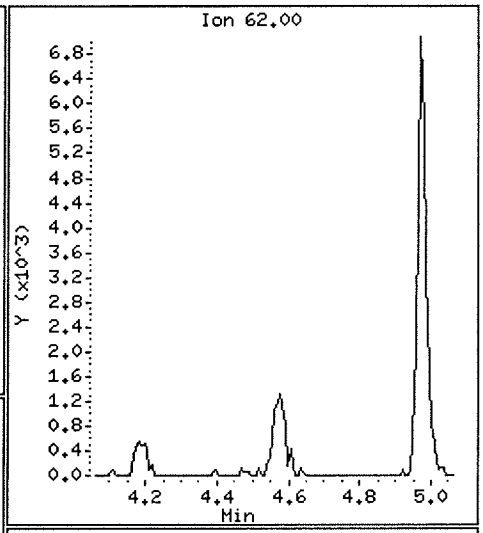
Column phase: DB624

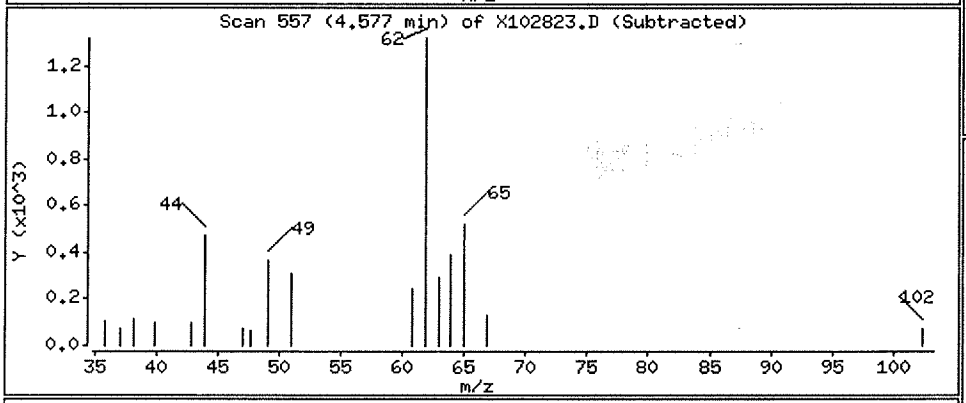
Column diameter: 0.18

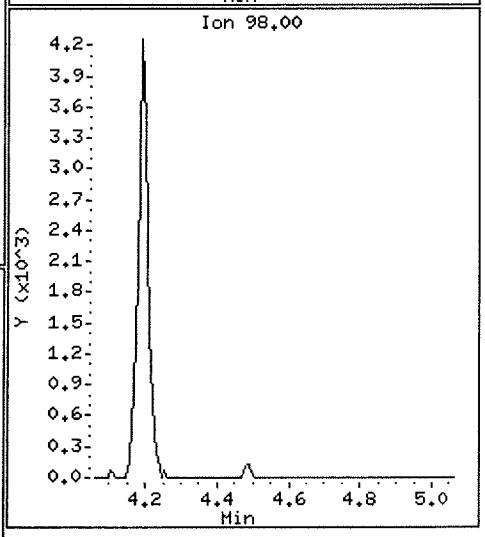
33 1,2-Dichloroethane

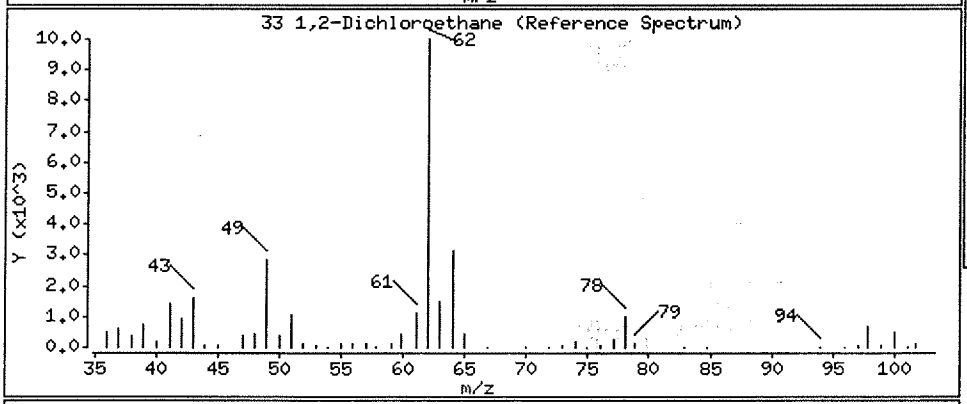
Concentration: 25.40 ug/l

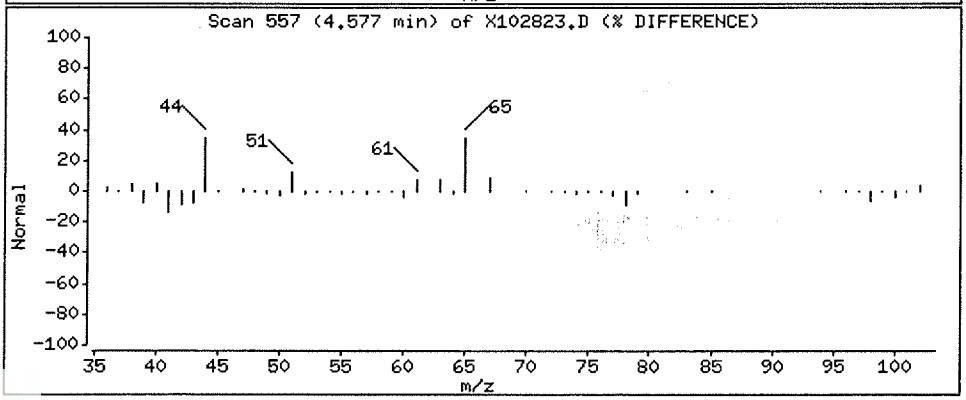












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D

Date : 28-OCT-2020 19:27

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

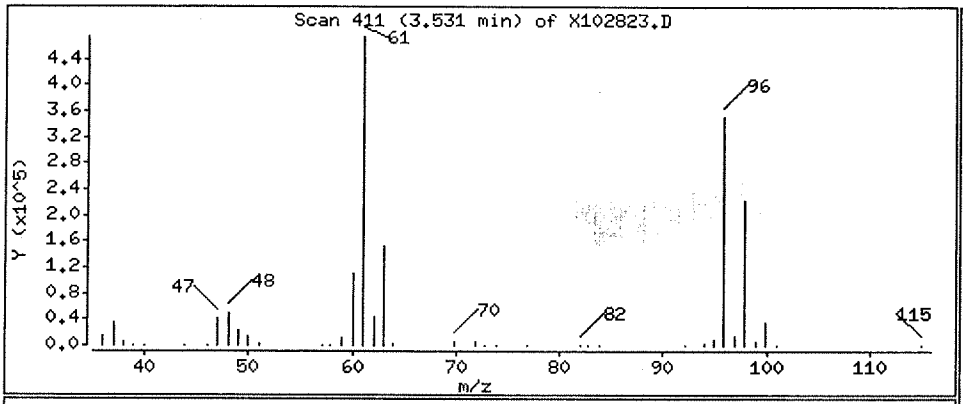
Operator: PC

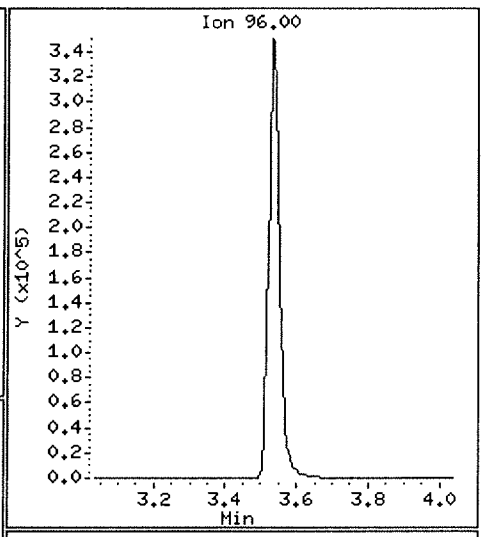
Column phase: DB624

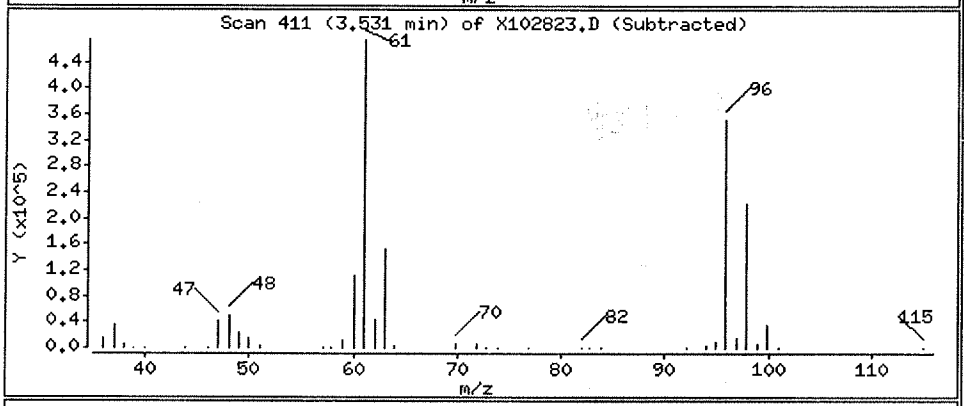
Column diameter: 0.18

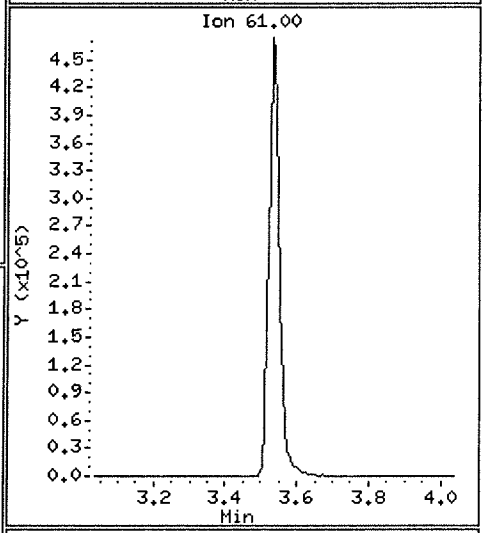
27 cis-1,2-Dichloroethene

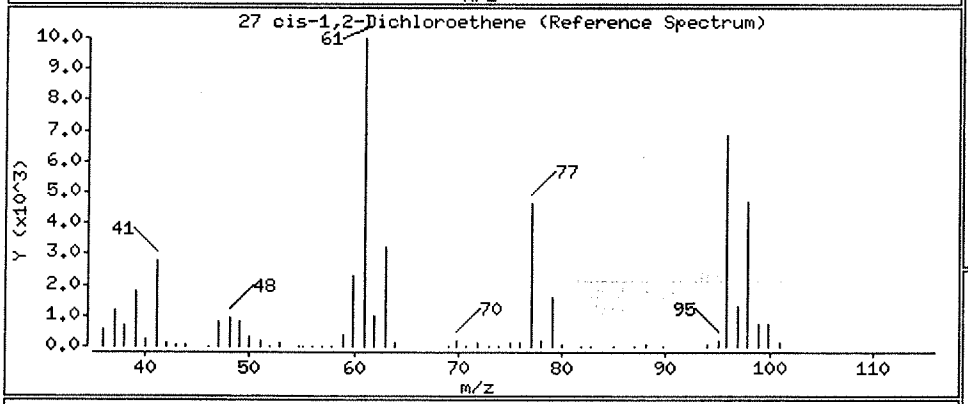
Concentration: 7431.70 ug/l

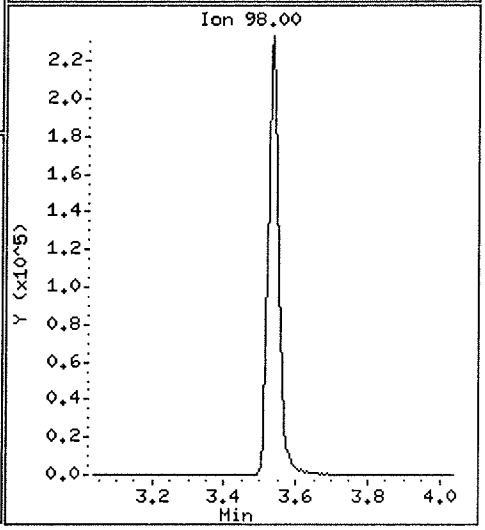


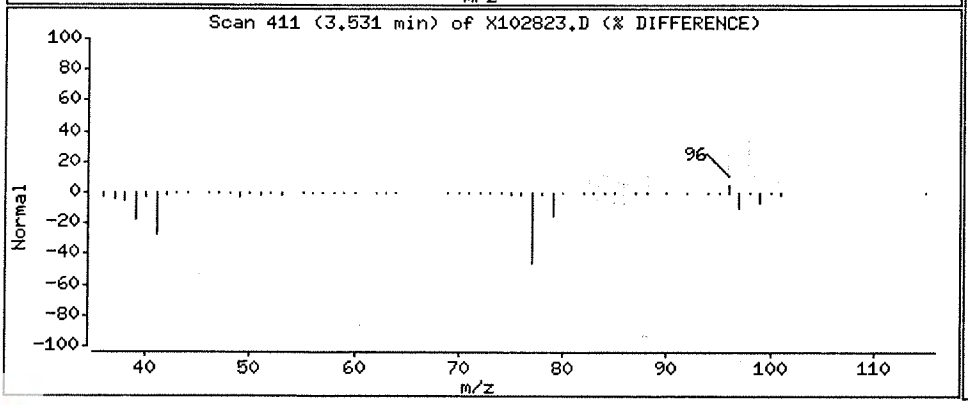












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D

Date : 28-OCT-2020 19:27

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

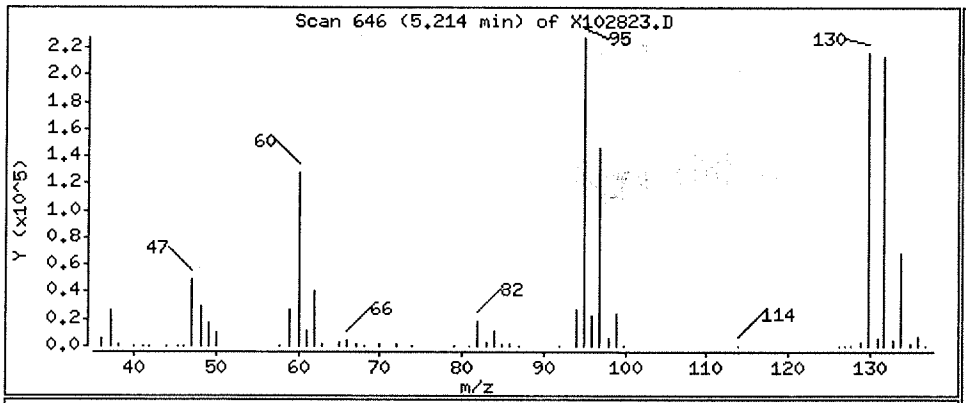
Operator: PC

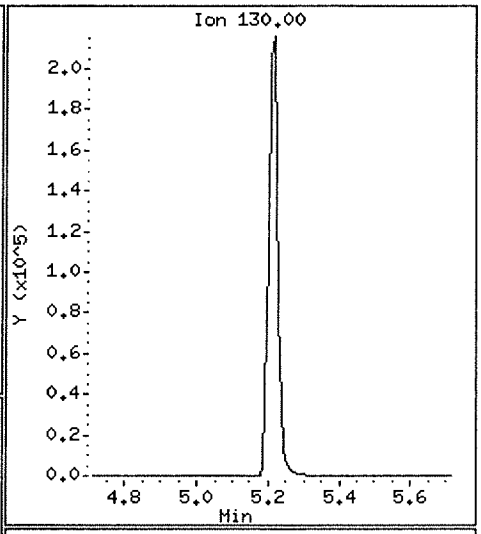
Column phase: DB624

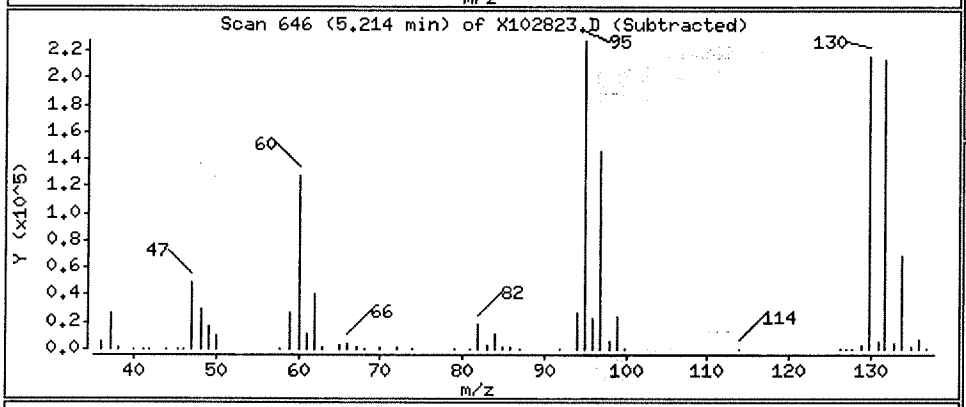
Column diameter: 0.18

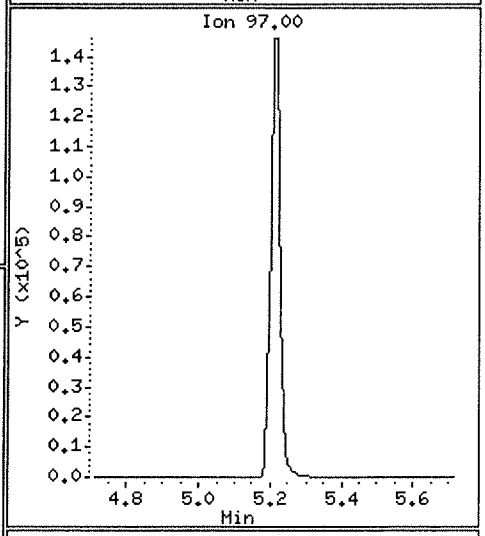
38 Trichloroethene

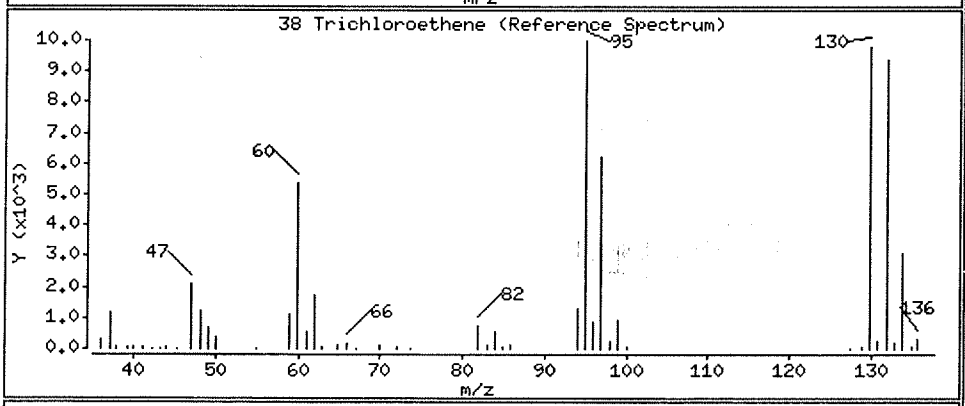
Concentration: 5139.25 ug/l

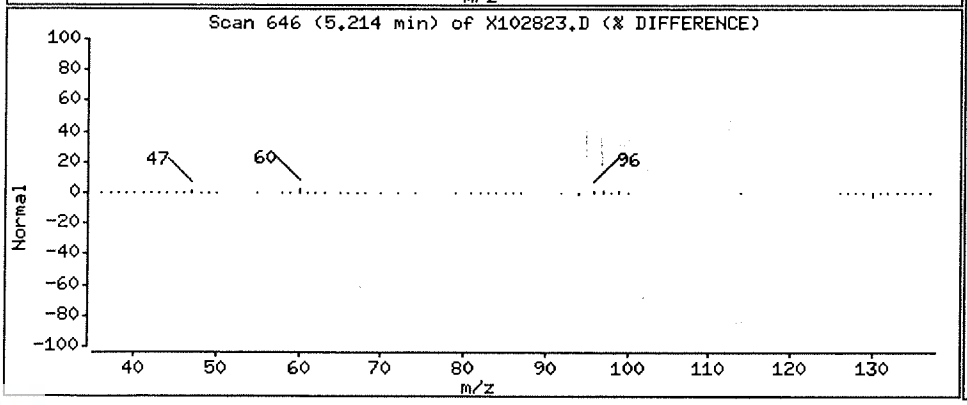


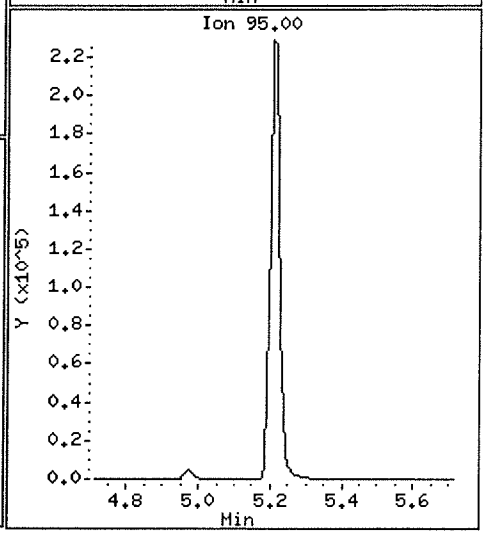












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102823.D

Date : 28-OCT-2020 19:27

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

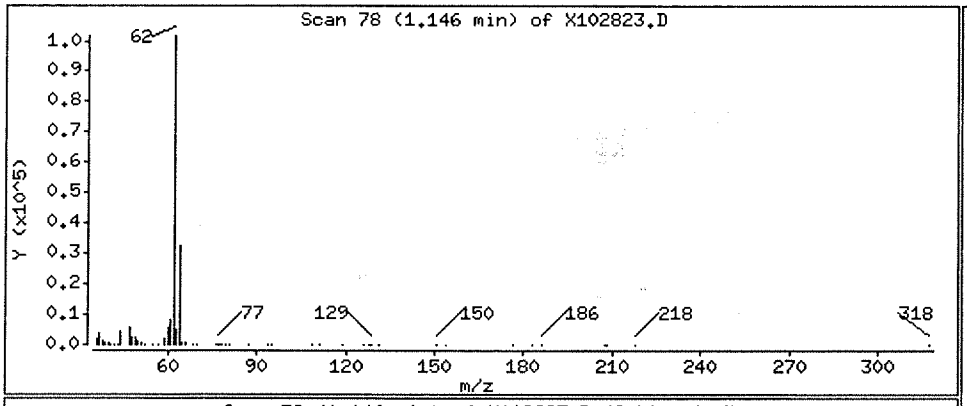
Operator: PC

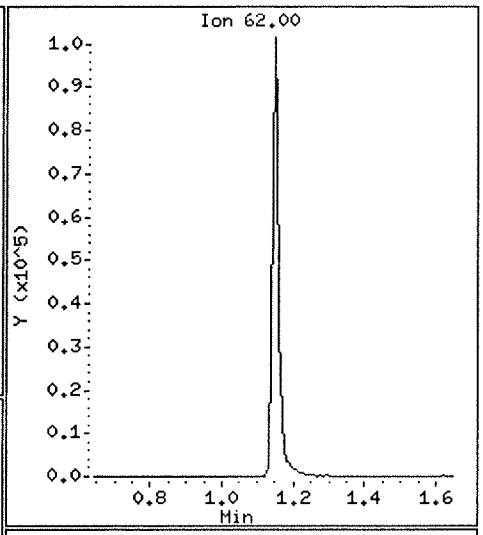
Column phase: DB624

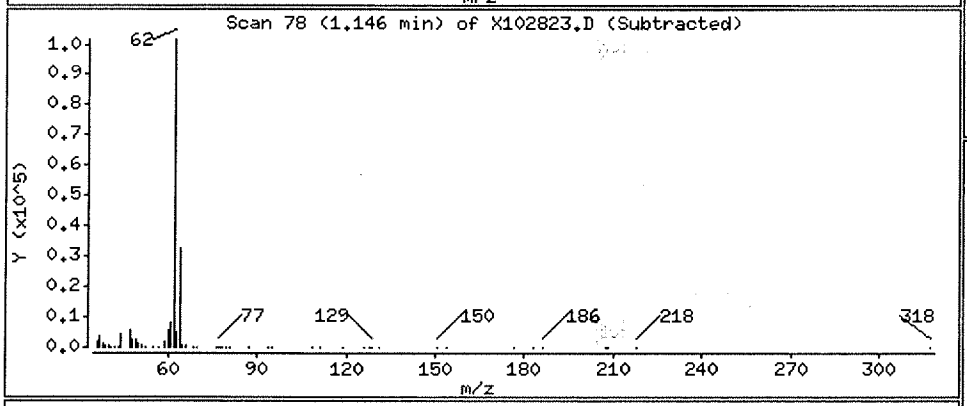
Column diameter: 0.18

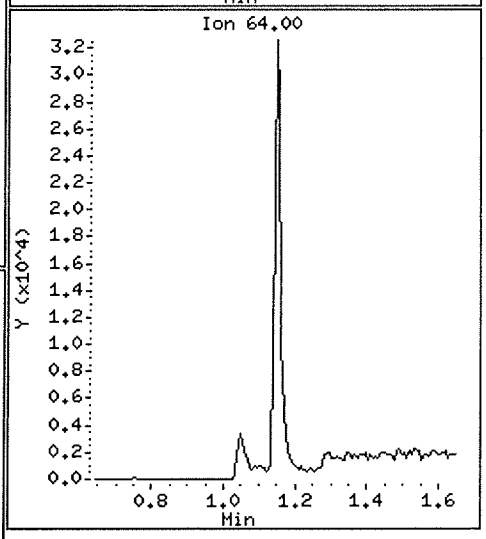
5 Vinyl Chloride

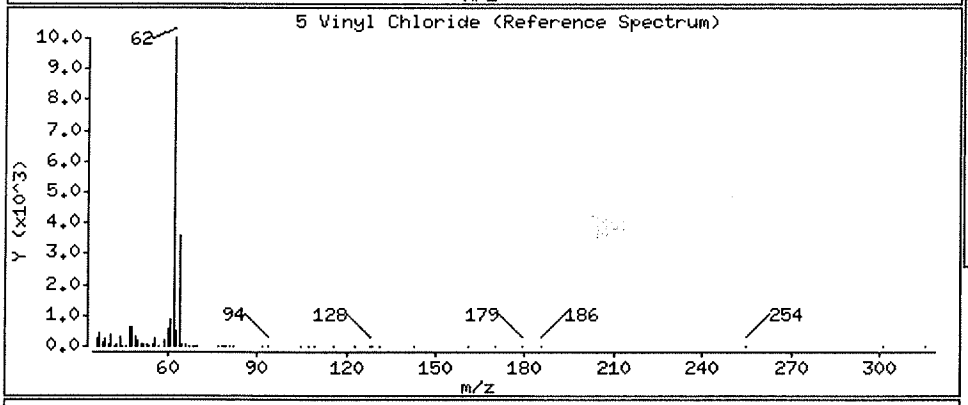
Concentration: 628.46 ug/l

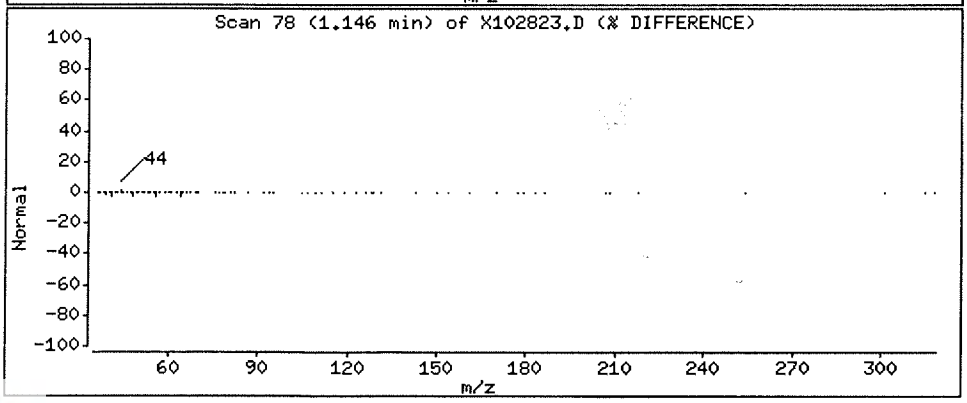












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D Page 1
Report Date: 30-Nov-2020 14:15

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D
Lab Smp Id: HS20101079-01 Client Smp ID: HS20101079-01
Inj Date : 28-OCT-2020 19:48
Operator : PC Inst ID: voa6.i
Smp Info : HS20101079-01;HS20101079-01;;;
Misc Info : HS18090001;WATER;0;250;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:11 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 23
Dil Factor: 250.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	250.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

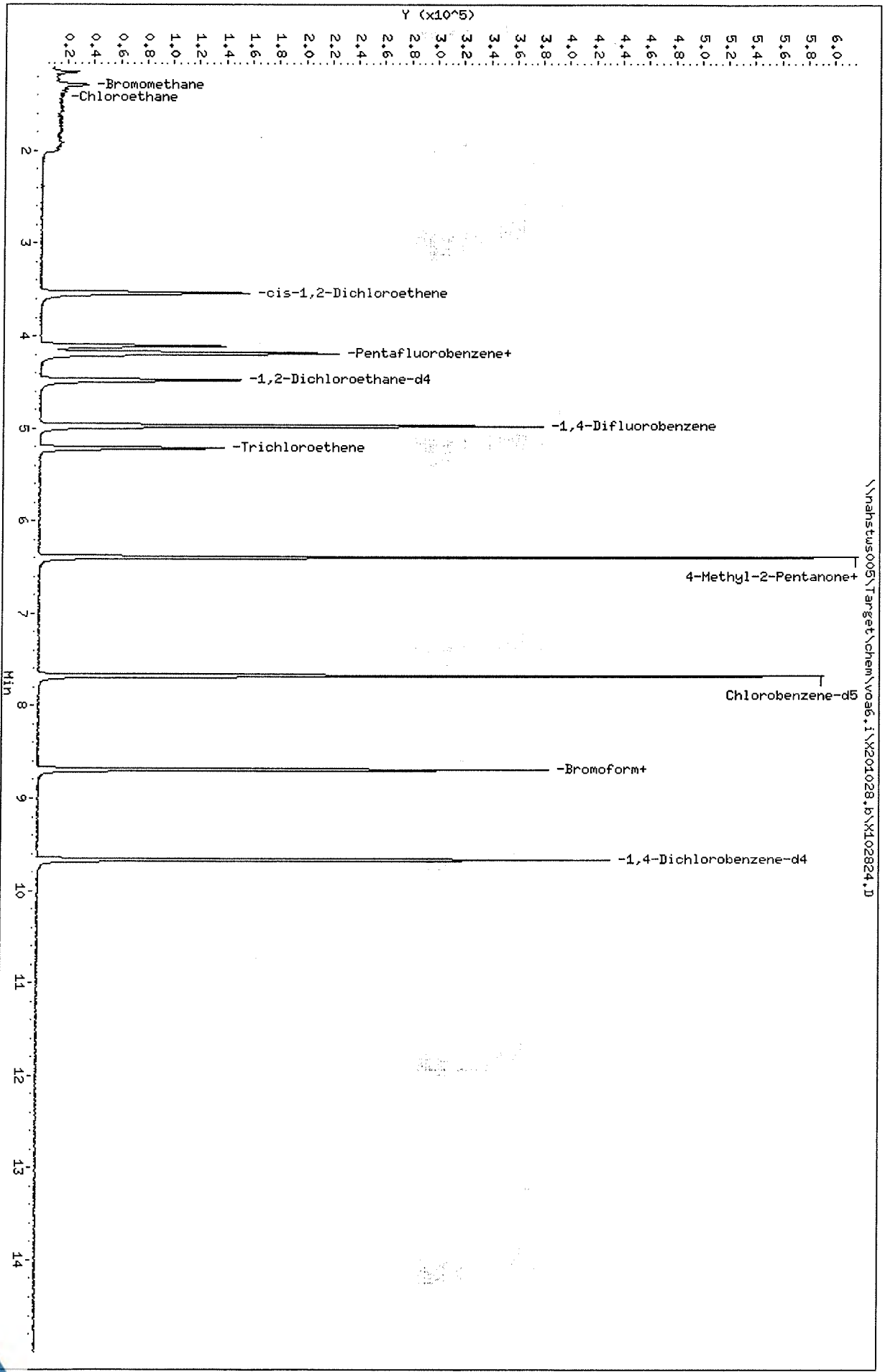
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	155510	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	273166	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	241800	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	88474	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	110255	40.5040	40.50(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	101545	44.1424	44.14
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	89526	41.8192	41.81
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	325574	47.8197	47.81
27 cis-1,2-Dichloroethene	96	3.537	3.538	(0.844)	73534	30.2176	7554.39
38 Trichloroethene	130	5.214	5.214	(1.049)	38817	21.6047	5401.18
5 Vinyl Chloride	62	1.152	1.145	(0.275)	13187	2.75831	689.57(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D
Date : 28-OCT-2020 19:48
Client ID: HS20101079-01
Sample Info: HS20101079-01;HS20101079-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D Page 3

Date : 28-OCT-2020 19:48

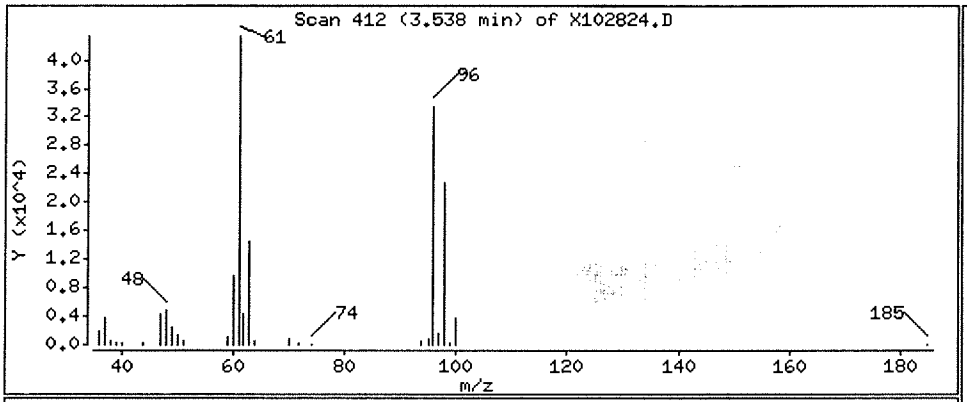
Client ID: HS20101079-01 Instrument: voa6.i

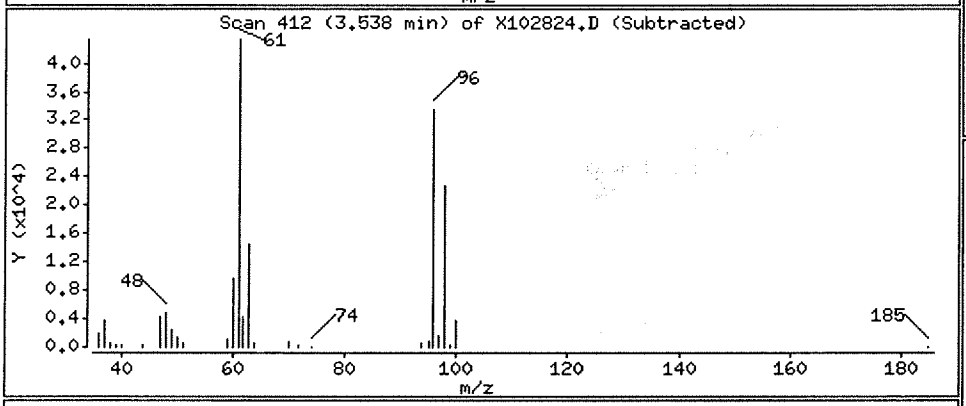
Sample Info: HS20101079-01;HS20101079-01;;;

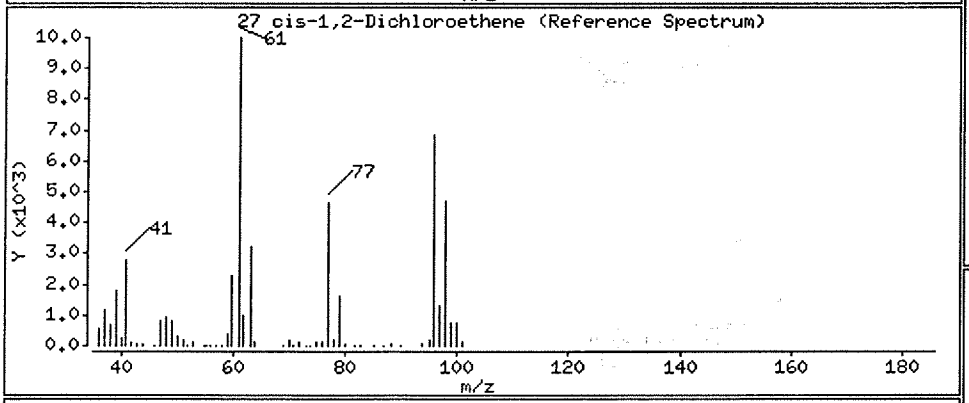
Purge Volume: 5.0 Operator: PC

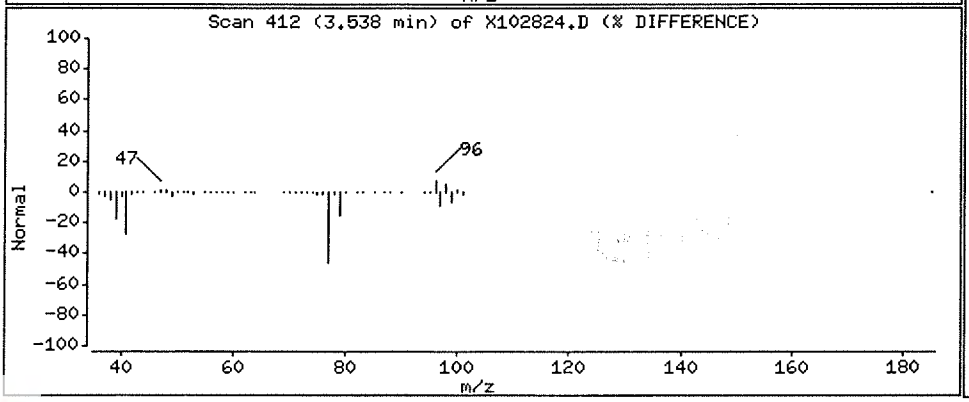
Column phase: DB624 Column diameter: 0.18

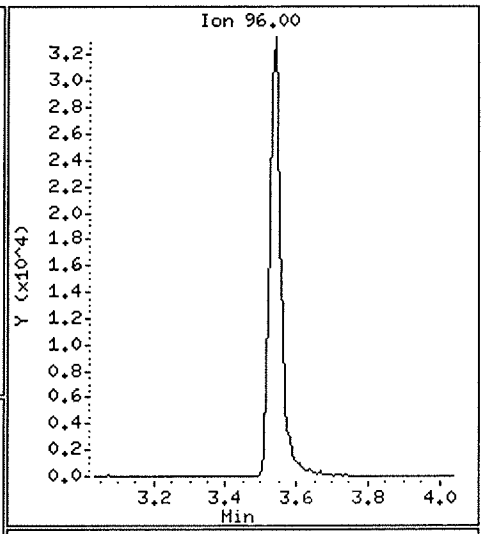
27 cis-1,2-Dichloroethene Concentration: 7554.39 ug/l

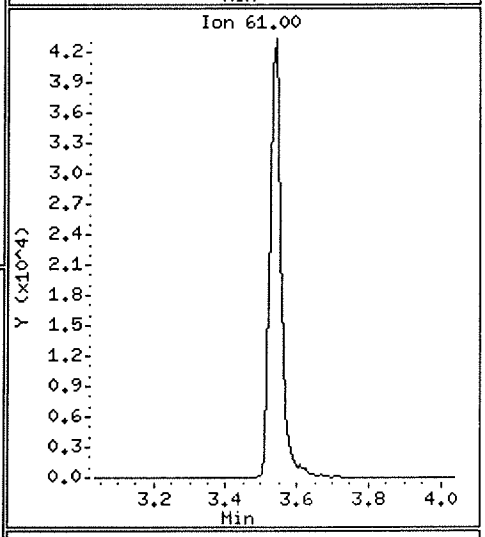


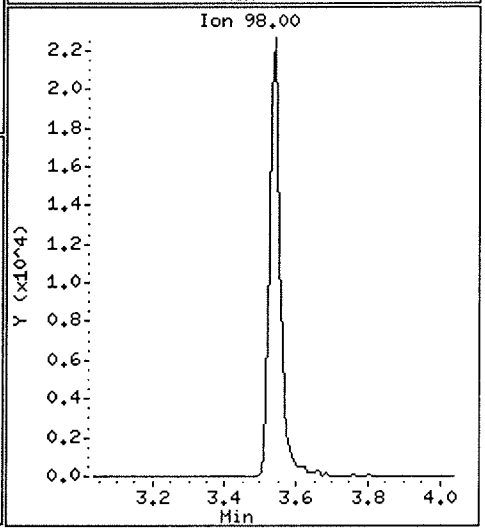












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D

Date : 28-OCT-2020 19:48

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

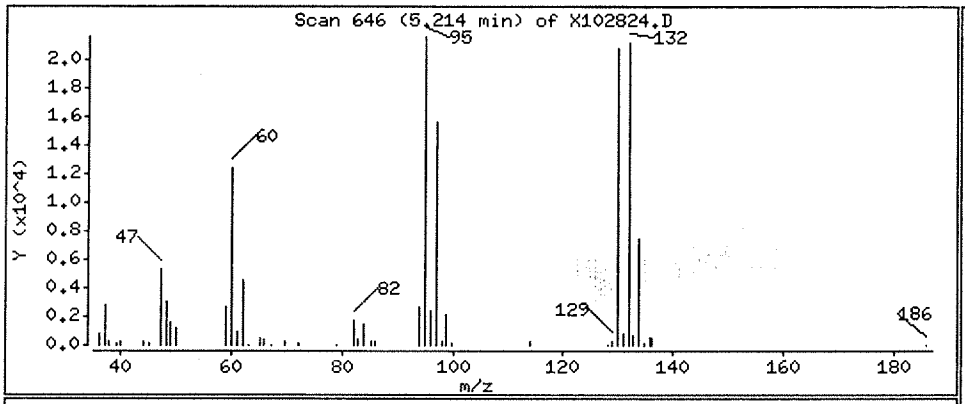
Operator: PC

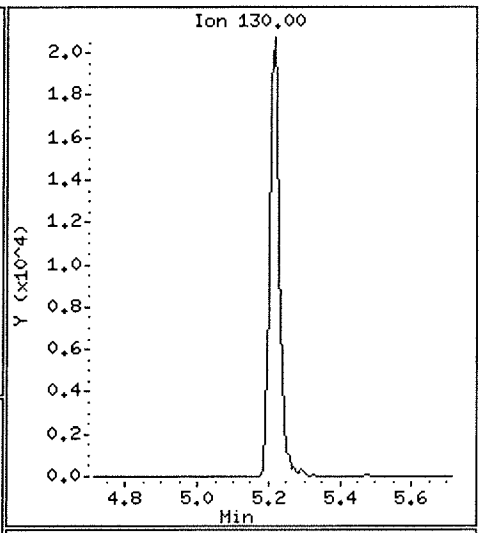
Column phase: DB624

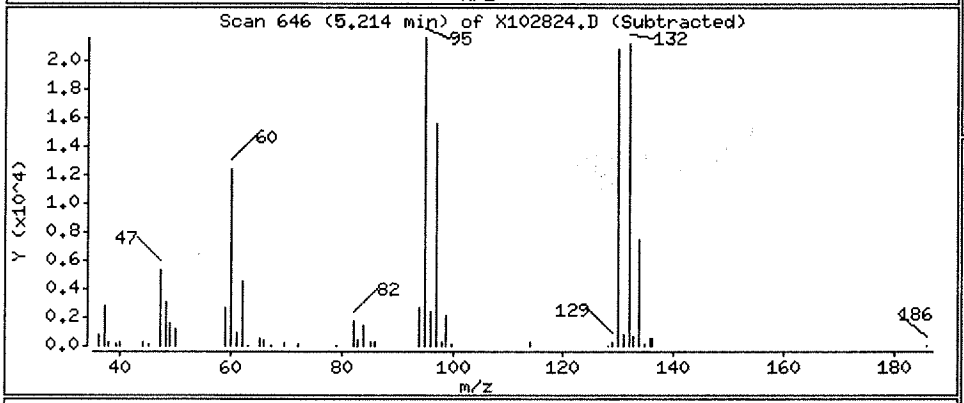
Column diameter: 0.18

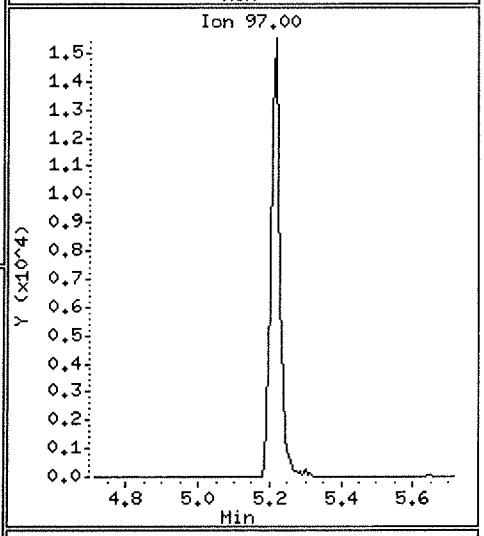
38 Trichloroethene

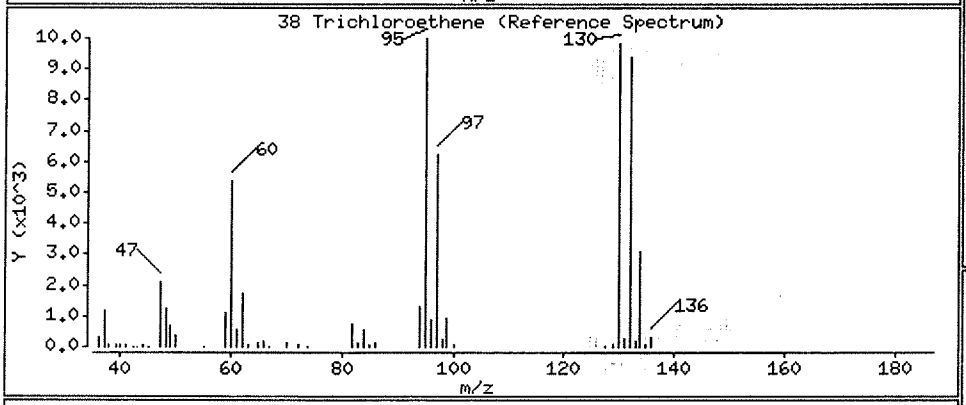
Concentration: 5401.18 ug/l

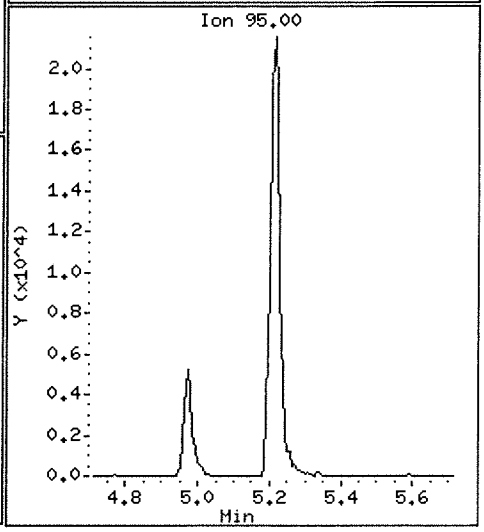


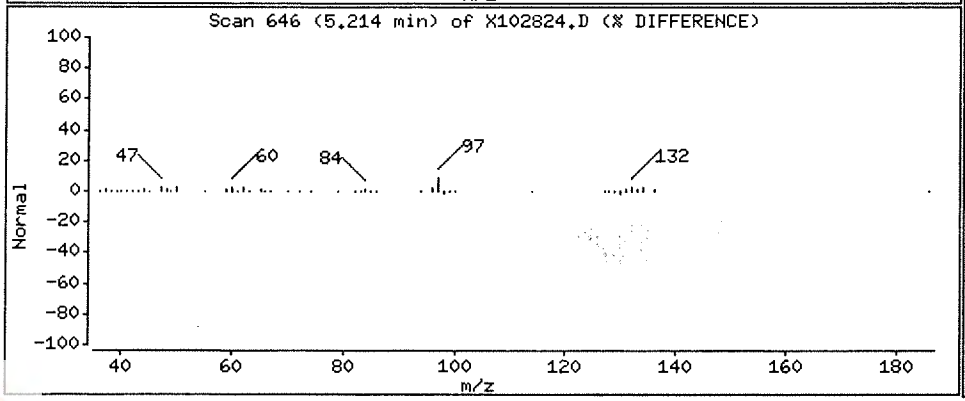












Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102824.D

Date : 28-OCT-2020 19:48

Client ID: HS20101079-01

Instrument: voa6.i

Sample Info: HS20101079-01;HS20101079-01;;;

Purge Volume: 5.0

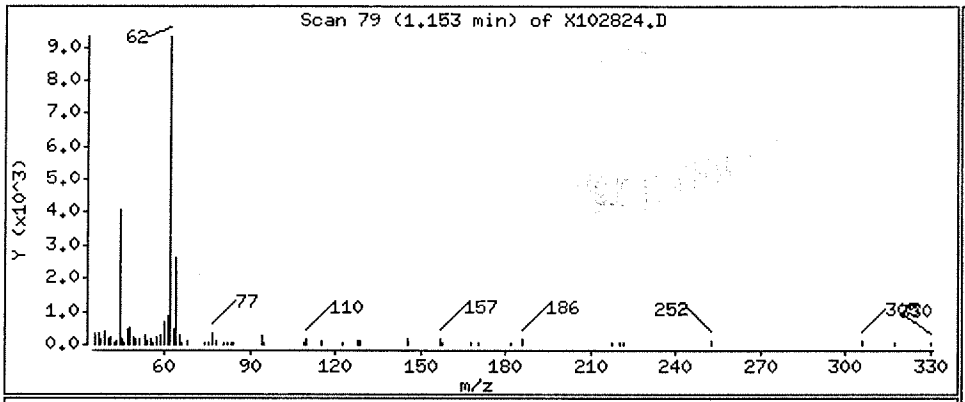
Operator: PC

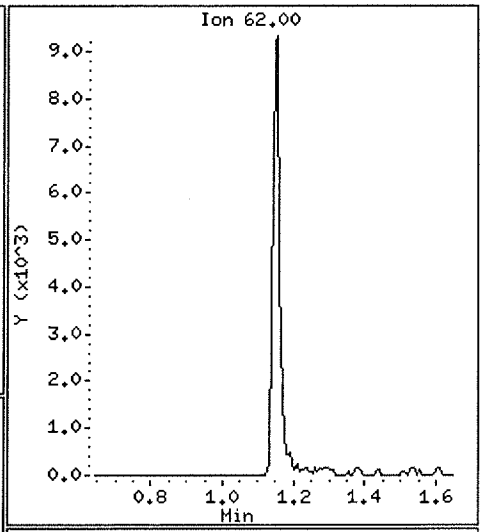
Column phase: DB624

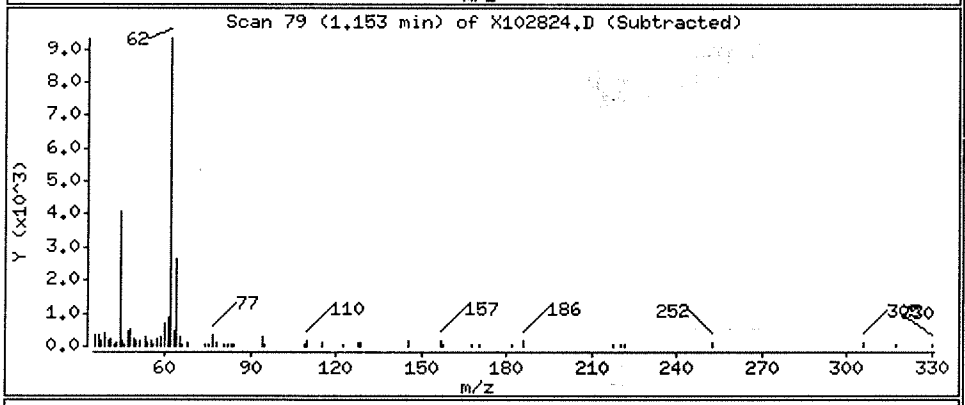
Column diameter: 0.18

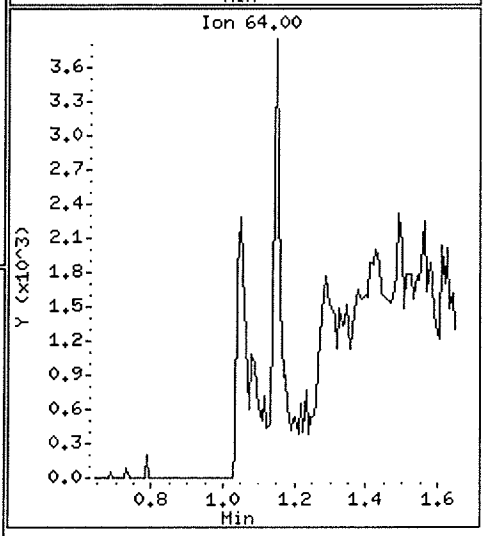
5 Vinyl Chloride

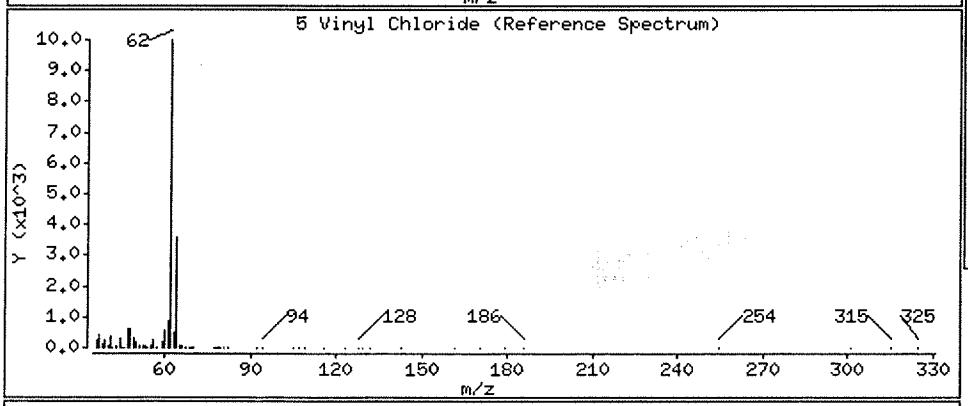
Concentration: 689.57 ug/l

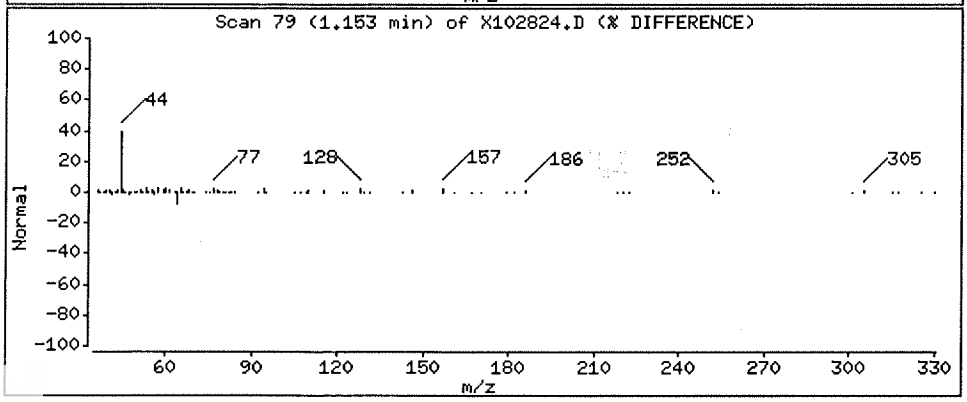






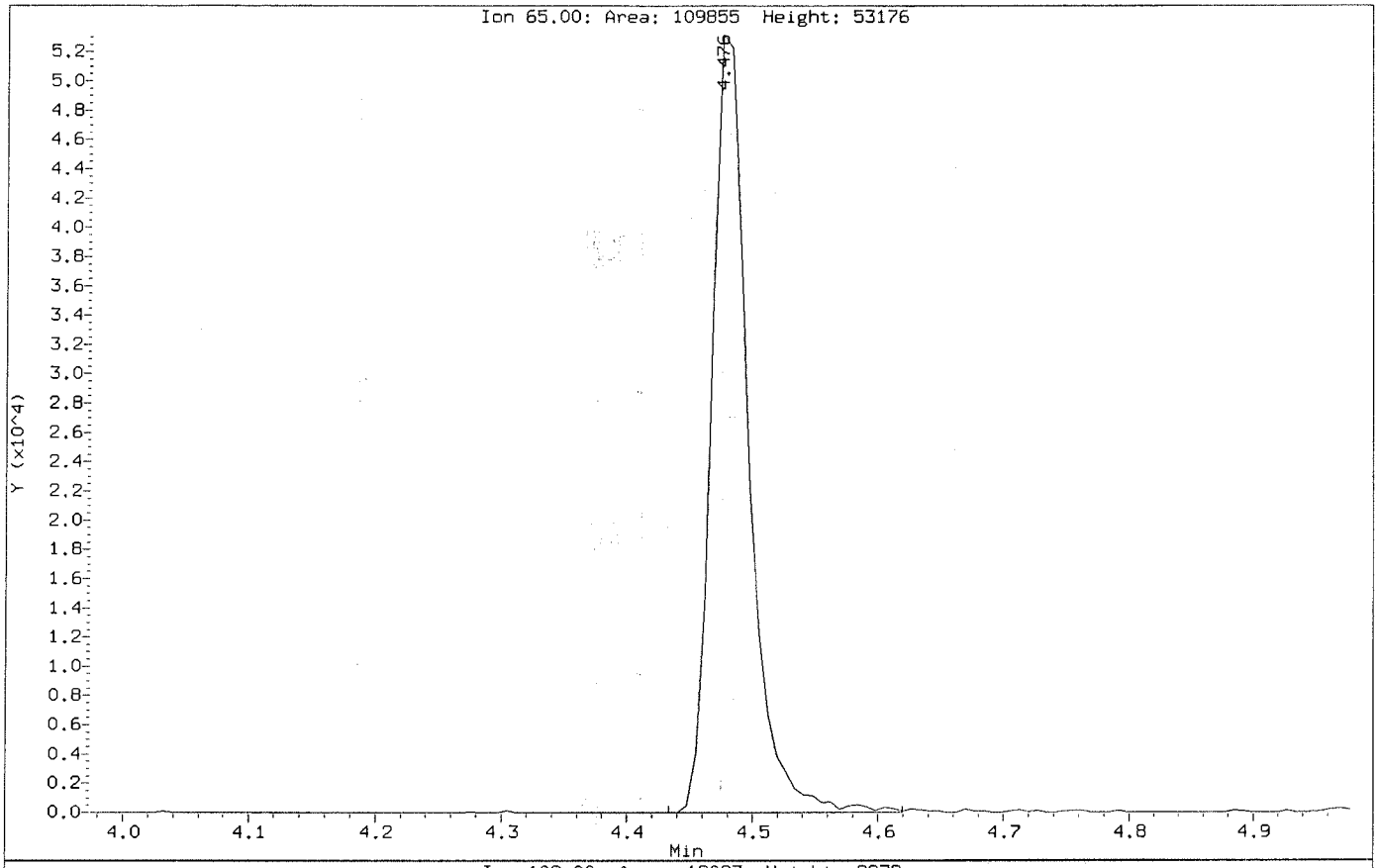


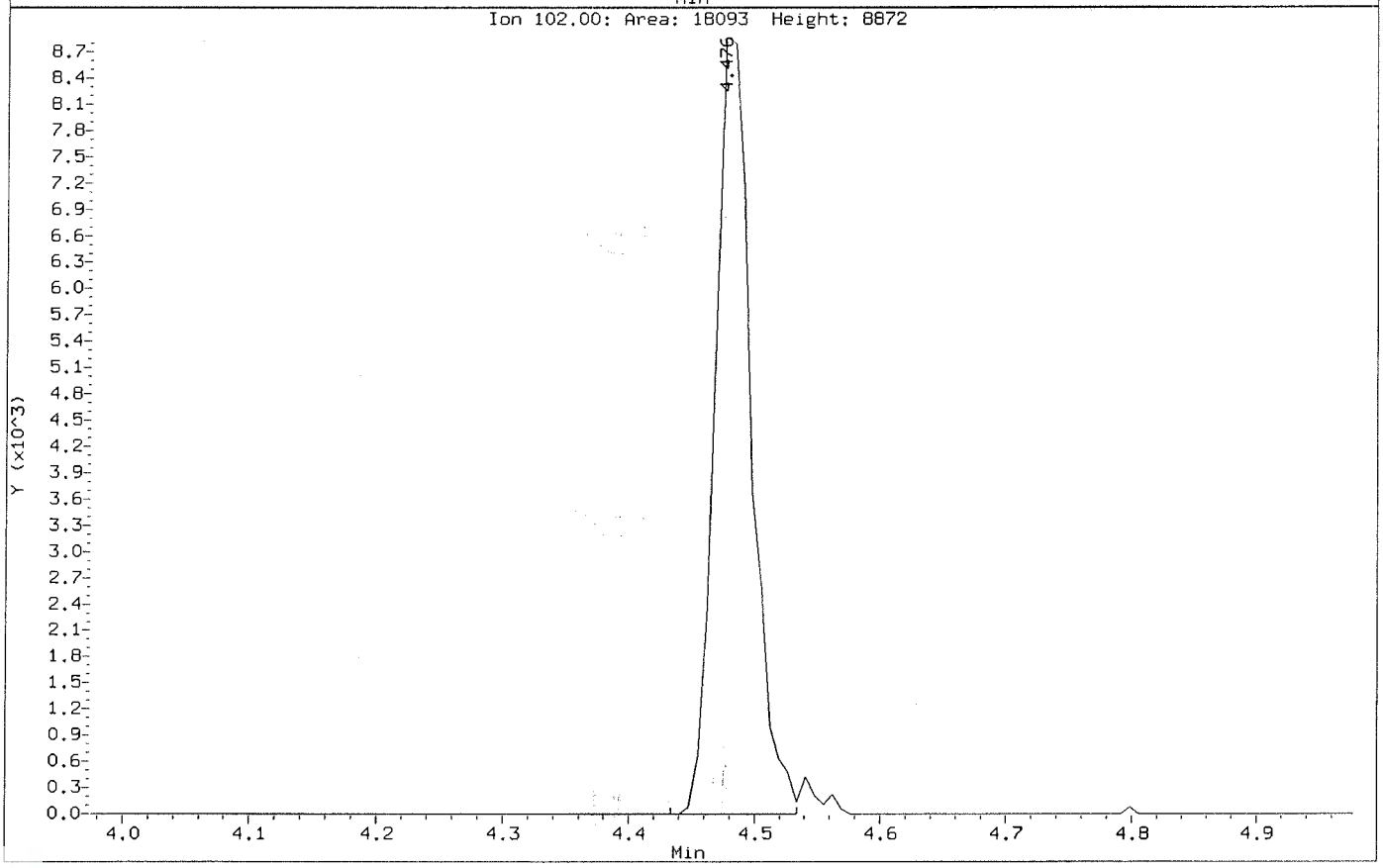




Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\Before\X102824.D
Injection Date: 28-OCT-2020 19:48
Instrument: voa6.i
Client Sample ID: HS20101079-01

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





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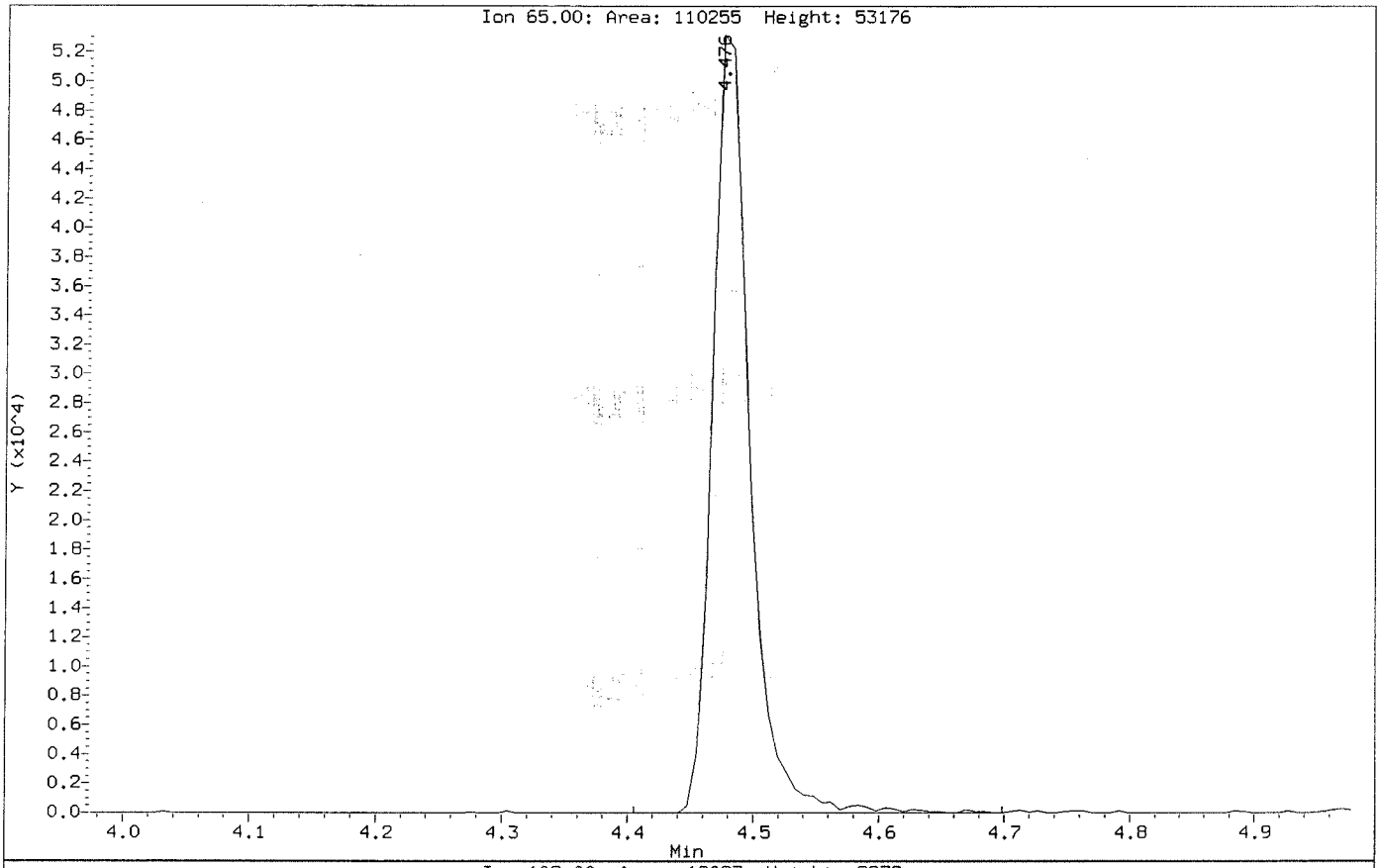
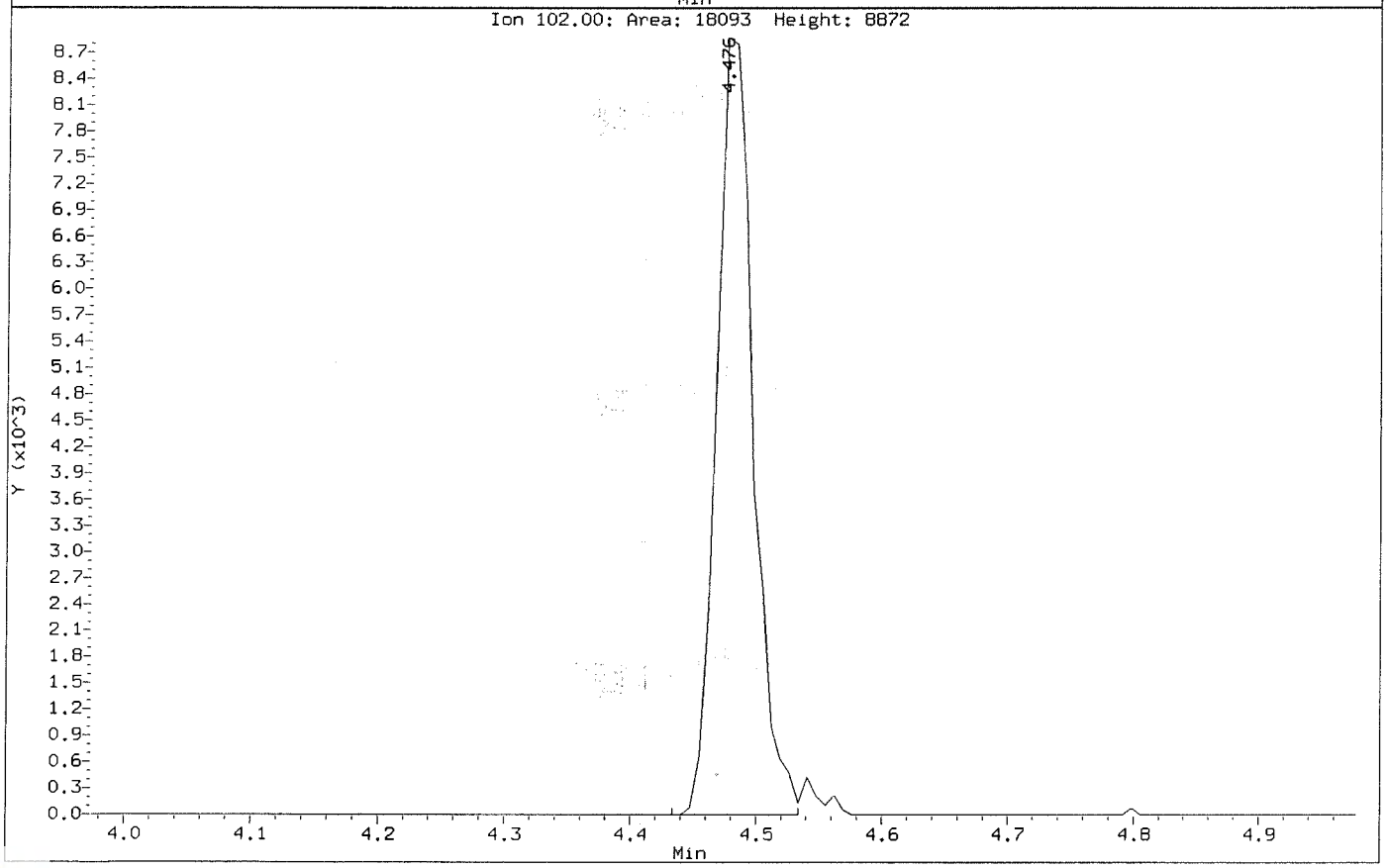
Injection Date: 28-OCT-2020 19:48
Instrument: voa6.i
Client Sample ID: HS20101079-01

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102825.D Page 1
Report Date: 30-Nov-2020 14:10

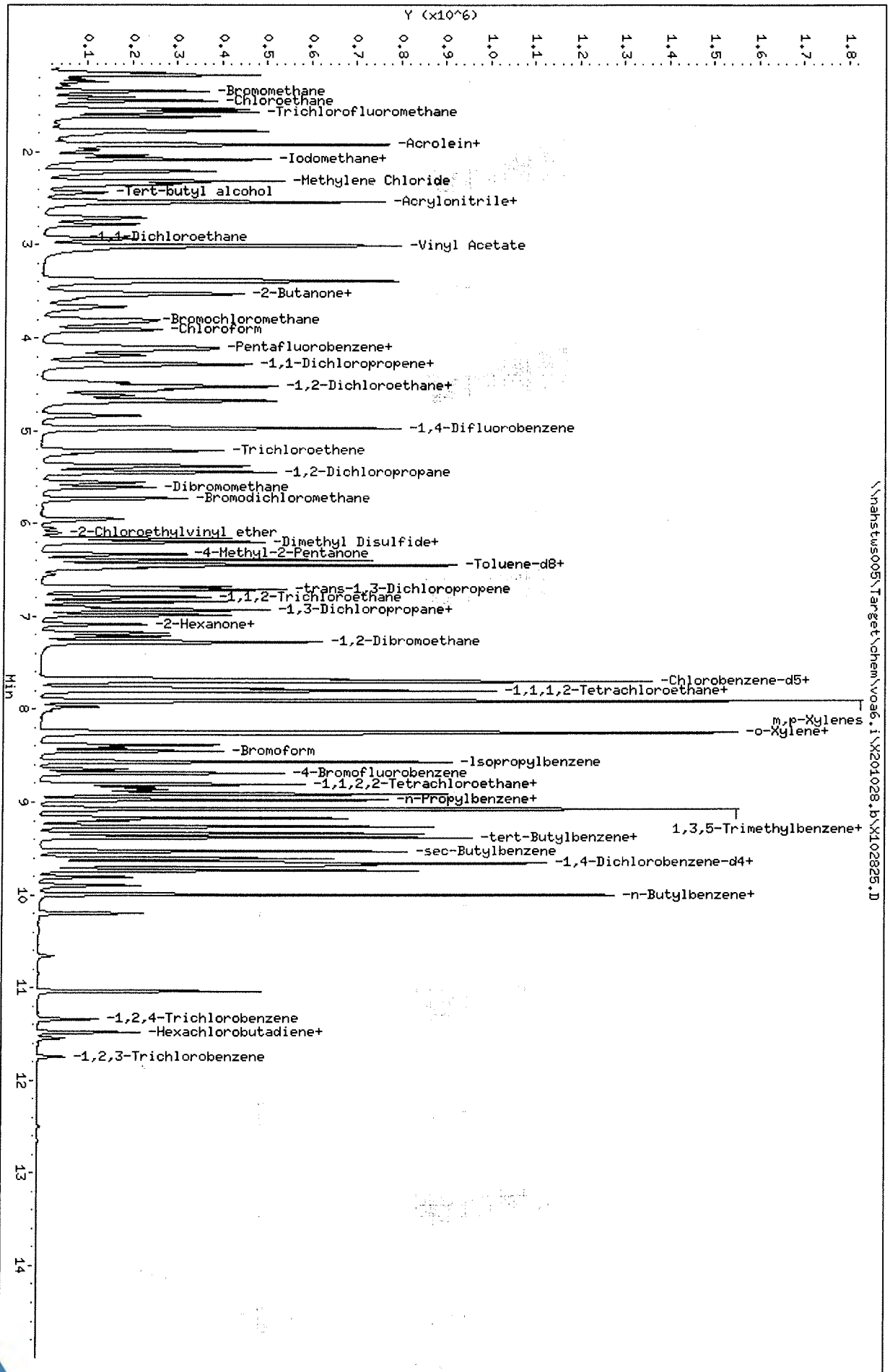
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201028.b\X102825.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 28-OCT-2020 20:09
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201028.b\8260W.m
Meth Date : 30-Nov-2020 14:10 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	157214	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	289302	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	274648	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	115503	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	141257	50.0000	51.32
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	132512	50.0000	50.41
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	109829	50.0000	50.74
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	380151	50.0000	49.10
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	89124	50.0000	49.88
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	143084	50.0000	37.36
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	176398	50.0000	56.45
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.844)	124586	50.0000	50.64
17 Methylene Chloride	84	2.313	2.313	(0.552)	115792	50.0000	46.60
38 Trichloroethene	130	5.214	5.214	(1.049)	111987	50.0000	58.85
5 Vinyl Chloride	62	1.145	1.145	(0.273)	179296	50.0000	37.09



Data File: \\nahstws005\Target\chem\voa6.i\X201028.b\X102825.D
Date : 28-OCT-2020 20:09
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

HS20101079 RSK175 Raw Data

ALS WO# HS20101079

FID04 -Logbook

Batch: 26730 **Analyst:** Nosa Izekor

Date: 01-24-2017 **Reviewer:**

Method: RSK 175 ICAL **Laboratory:** Houston

Comments: Target Sequence 170124

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	ICAL1	CALIB_1	01-24-2017 09:06 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	ICAL2	CALIB_2	01-24-2017 09:30 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	ICAL3	CALIB_3	01-24-2017 09:59 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	ICAL4	CALIB_4	01-24-2017 10:15 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	ICAL5	CALIB_5	01-24-2017 10:39 am	1.00	0.00 mL	0.00 mL	005.D	Liquid	Y	NA
6	ICAL6	CALIB_6	01-24-2017 10:57 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	ICAL7	CALIB_7	01-24-2017 11:13 am	1.00	0.00 mL	0.00 mL	007.D	Liquid	Y	NA
8	ICV	METHSPIKI	01-24-2017 12:05 pm	1.00	0.00 mL	0.00 mL	008.D	Liquid	Y	NA
9	LCS-170124	LCS	01-24-2017 12:24 pm	1.00	0.00 mL	0.00 mL	009.D	Liquid	Y	NA
10	LCSD-170124	LCSD	01-24-2017 12:40 pm	1.00	0.00 mL	0.00 mL	010.D	Liquid	Y	NA
11	MBLK-170124	MBLK	01-24-2017 12:57 pm	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS17010778-01	SAMP	01-24-2017 01:14 pm	1.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS17010779-01	SAMP	01-24-2017 01:31 pm	1.00	0.00 mL	0.00 mL	013.D	Liquid	Y	NA
14	HS17010779-01DUP	SAMP	01-24-2017 01:47 pm	1.00	0.00 mL	0.00 mL	014.D	Liquid	Y	NA
15	CCV	CCV	01-24-2017 02:01 pm	1.00	0.00 mL	0.00 mL	015.D	Liquid	Y	NA

Chemical	Value
ICAL STD ID	30010700217
ICV STD ID	30010700610

FORM 3
WATER GASES METHOD SPIKE RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Matrix Spike - ENG SC Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Ethene	16.800	19.090	114	75-125
Methane	9.647	9.597	99	75-125
Ethane	18.043	19.657	109	75-125
Propane	26.463	27.238	103	75-125
N-Butane	34.955	36.010	103	75-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

_____

FORM III GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

LAB FILE ID: RF10: 001 RF25: 002 RF50: 003
RF100: 004 RF250: 005 RF500: 006

COMPOUND	RF10	RF25	RF50	RF100	RF250	RF500
Ethene	535.608	567.359	564.985	516.024	665.282	425.678
Methane	968.912	978.238	1019.699	880.798	960.713	930.704
Ethane	602.493	670.177	658.908	597.201	808.513	817.630
Propane	500	1279	2602	4785	18294	38286
N-Butane	438	936	2034	3864	18446	42817

FORM VI GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010107

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

RF1000: 007

COMPOUND	RF1000	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MA
Ethene	828.858	AVRG		586.256273		21.932	
Methane	1081.580	AVRG		974.377787		6.550	
Ethane	999.335	AVRG		736.322546		19.885	
Propane	96509	2ORDR	0.97987006	1.529e-003	-4.58e-009	0.9991365	0
N-Butane	114164	2ORDR	2.46870151	1.834e-003	-5.54e-009	0.9980766	0

FORM VI GASES

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Lab Smp Id: ICAL1 Client Smp ID: ICAL1
Inj Date : 24-JAN-2017 09:06
Operator : JA Inst ID: FID-4.i
Smp Info : ICAL1;ICAL1;;;
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:06 Cal File: 001.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	374	0.38600	0.383(a)
2 Ethene	1.553	1.556	-0.003	361	0.67400	0.615(a)
3 Ethane	1.716	1.723	-0.007	435	0.72200	0.590(a)
4 Propane	4.073	4.113	-0.040	500	1.05900	1.743
5 N-Butane	7.640	7.690	-0.050	438	1.39800	3.271

QC Flag Legend

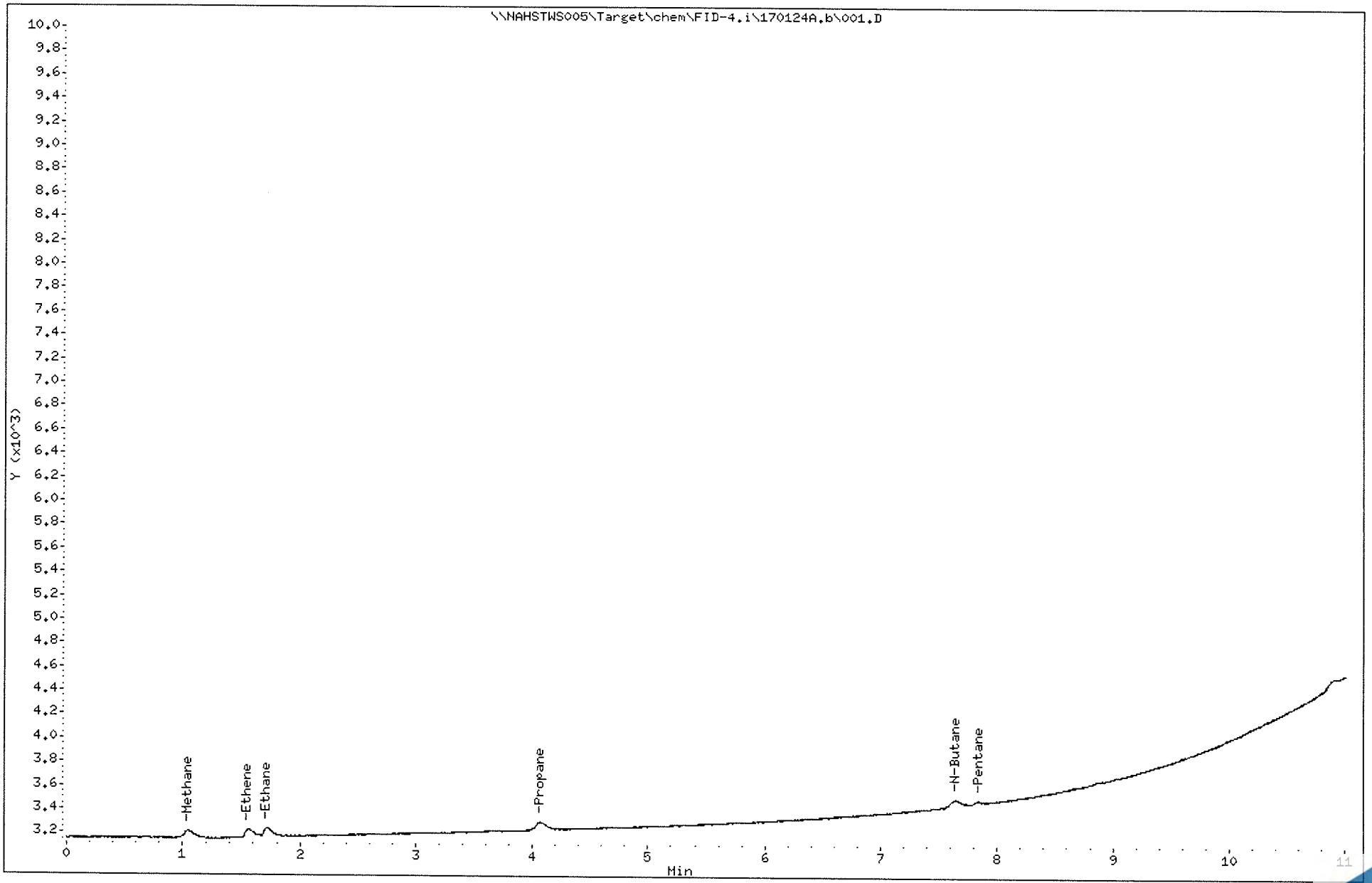
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Date : 24-JAN-2017 09:06
Client ID: ICAL1
Sample Info: ICAL1;ICAL1;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: JA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Lab Smp Id: ICAL2 Client Smp ID: ICAL2
Inj Date : 24-JAN-2017 09:30
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL2;ICAL2;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:59 Cal File: 003.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

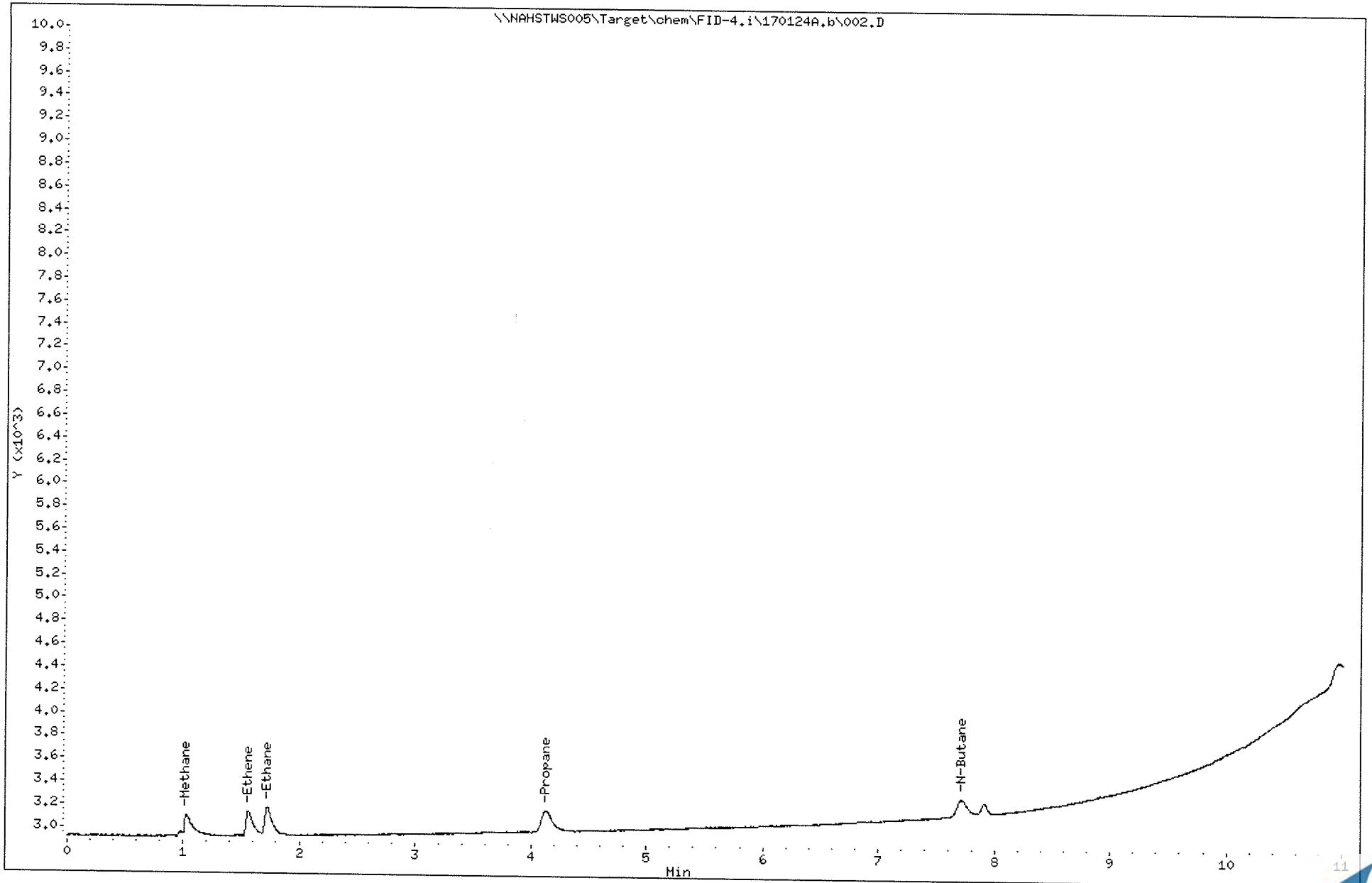
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	944	0.96500	0.968
2 Ethene	1.560	1.556	0.004	956	1.68500	1.630
3 Ethane	1.723	1.723	0.000	1209	1.80400	1.641
4 Propane	4.123	4.113	0.010	1279	2.64600	2.927
5 N-Butane	7.716	7.690	0.026	936	3.49600	4.180

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Date : 24-JAN-2017 09:30
Client ID: ICAL2
Sample Info: ICAL2;ICAL2;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Lab Smp Id: ICAL3 Client Smp ID: ICAL3
Inj Date : 24-JAN-2017 09:59
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL3;ICAL3;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

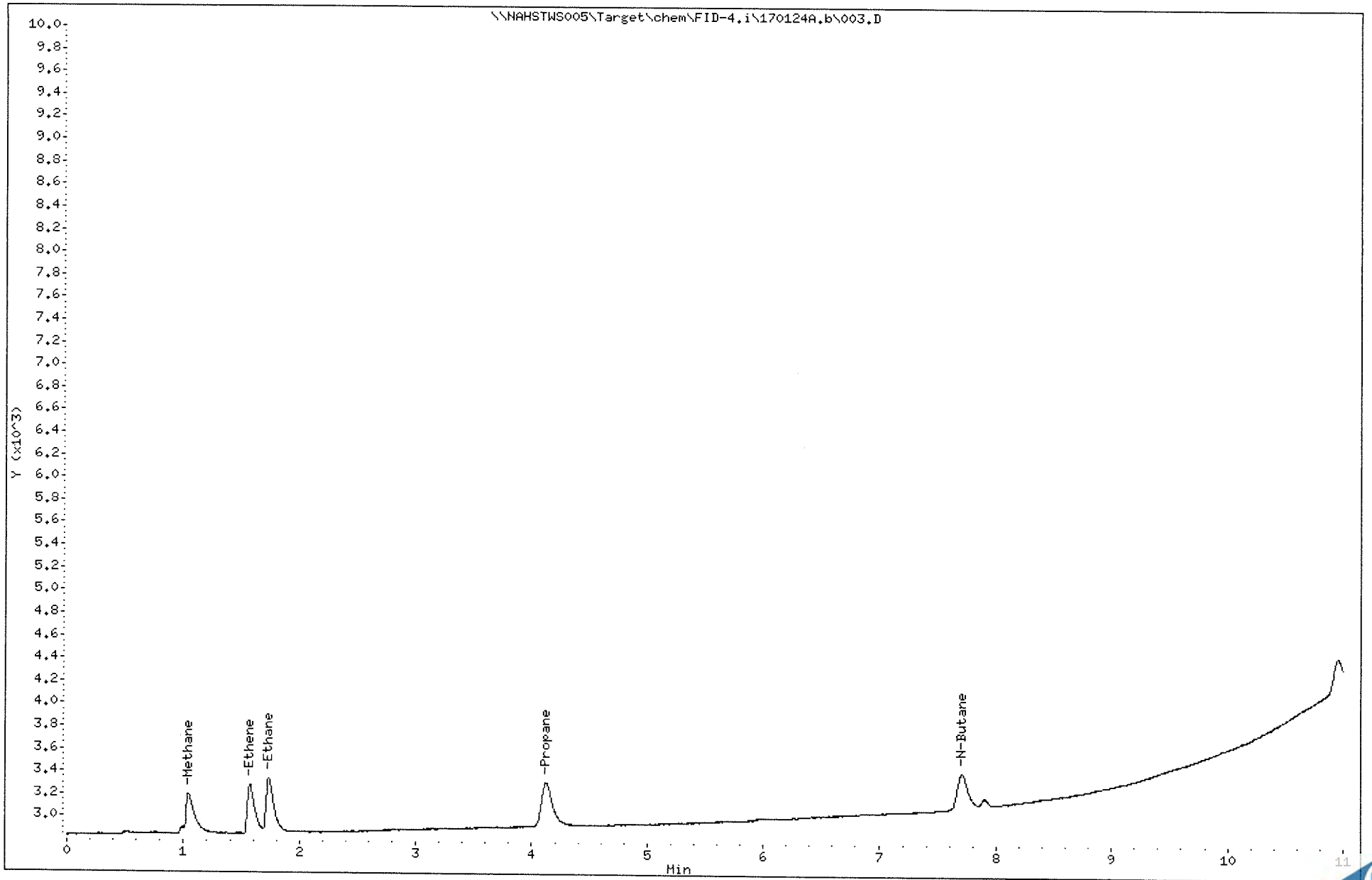
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	1967	1.92900	2.018
2 Ethene	1.570	1.556	0.014	1904	3.37000	3.247
3 Ethane	1.736	1.723	0.013	2378	3.60900	3.229
4 Propane	4.123	4.113	0.010	2602	5.29300	4.926
5 N-Butane	7.703	7.690	0.013	2034	6.99100	6.176

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Date : 24-JAN-2017 09:59
Client ID: ICAL3
Sample Info: ICAL3;ICAL3;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Lab Smp Id: ICAL4 Client Smp ID: ICAL4
Inj Date : 24-JAN-2017 10:15
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL4;ICAL4;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:30 Cal File: 002.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Methane	1.033	1.030	0.003	3399	3.85900	3.488
2 Ethene	1.563	1.556	0.007	3478	6.74000	5.932
3 Ethane	1.726	1.723	0.003	4310	7.21700	5.853
4 Propane	4.120	4.113	0.007	4785	10.5850	8.190
5 N-Butane	7.703	7.690	0.013	3864	13.9820	9.473(M)

QC Flag Legend

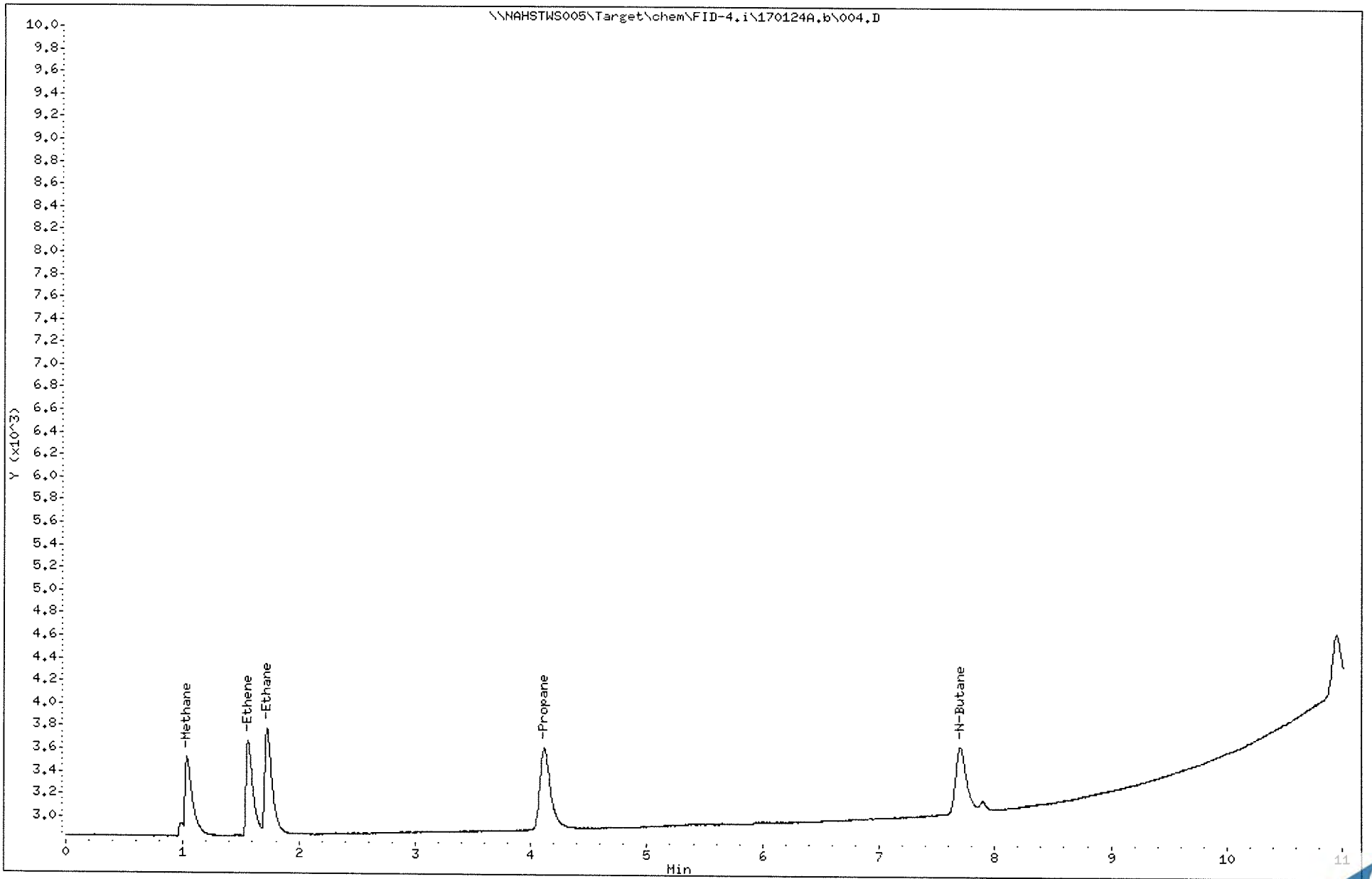
M - Compound response manually integrated.

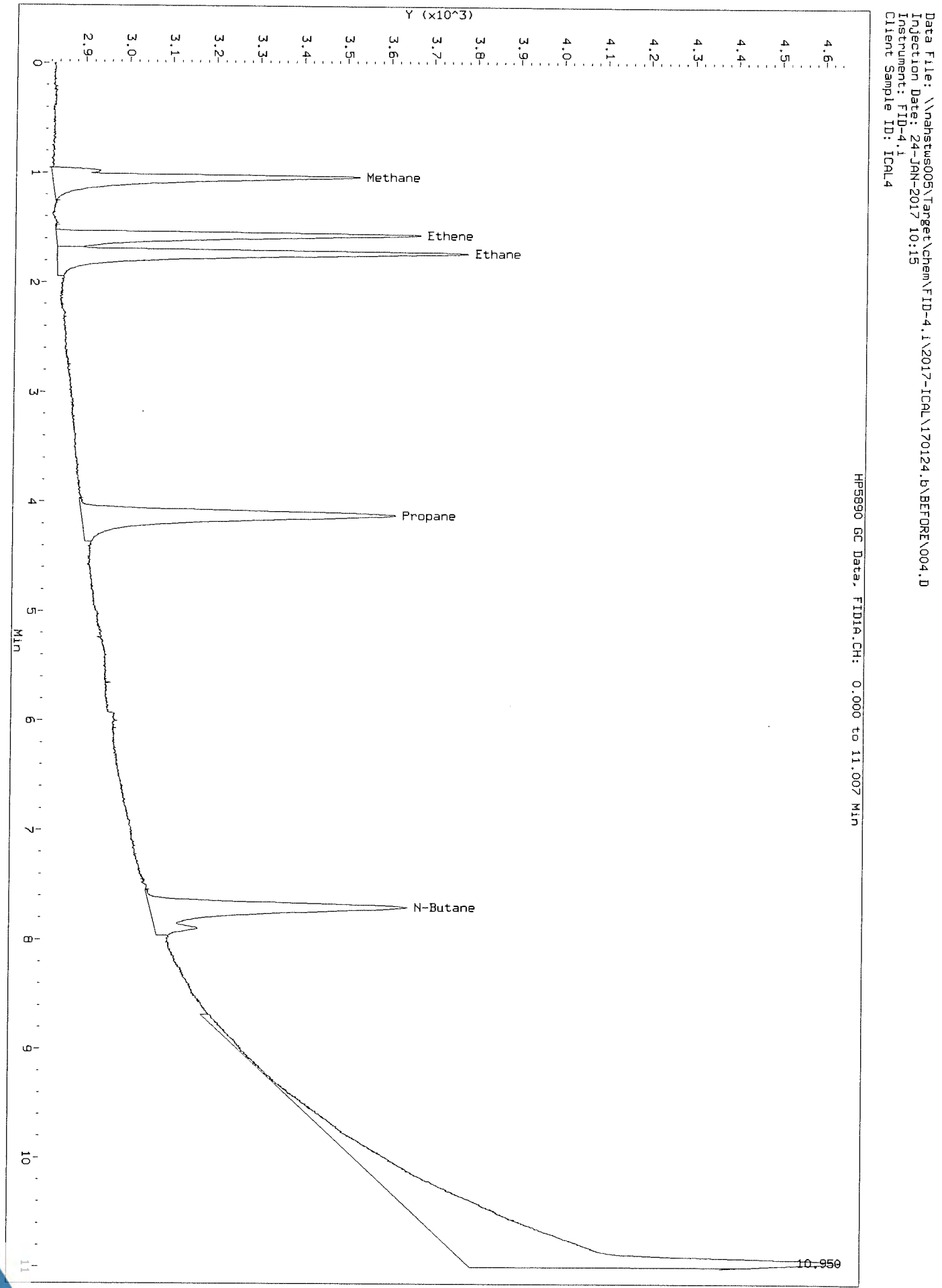
Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Date : 24-JAN-2017 10:15
Client ID: ICAL4
Sample Info: ICAL4;ICAL4;;;

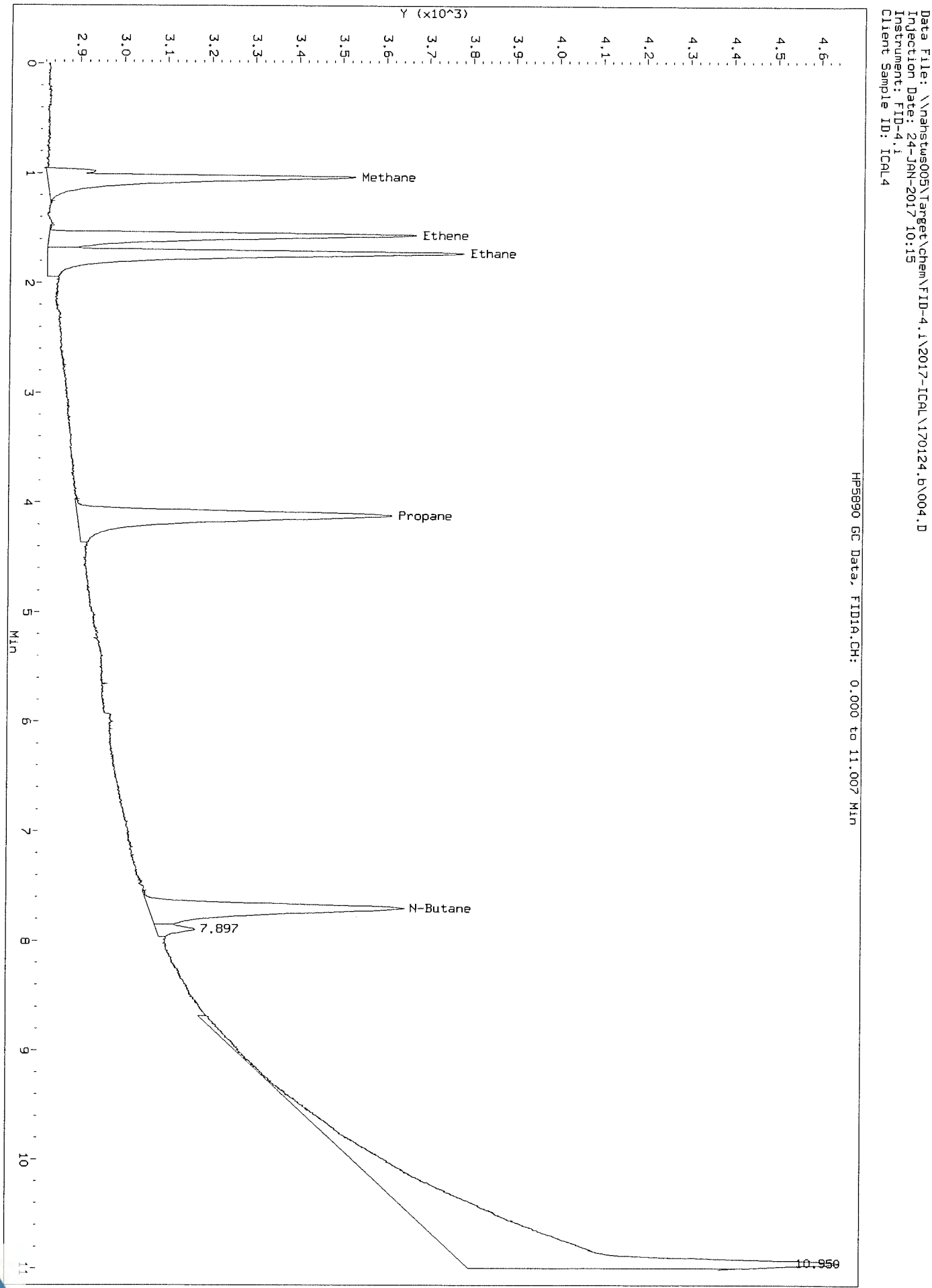
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\BEFORE\004.D
Injection Date: 24-JAN-2017 10:15
Instrument: FID-4.i
Client Sample ID: ICAL4
HP5890 GC Data, FID1A.CH: 0.000 to 11.007 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
N-Butane
10.950


Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\004.D
Injection Date: 24-JAN-2017 10:15
Instrument: FID-4.i
Client Sample ID: ICAL4
HP5890 GC Data, FIDiA.CH: 0.000 to 11.007 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
N-Butane
7.897
10.950

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Lab Smp Id: ICAL5 Client Smp ID: ICAL5
Inj Date : 24-JAN-2017 10:39
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL5;ICAL5;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	9268	9.64700	9.511
2 Ethene	1.570	1.556	0.014	11210	16.8500	19.121
3 Ethane	1.733	1.723	0.010	14588	18.0430	19.811
4 Propane	4.120	4.113	0.007	18294	26.4630	27.415
5 N-Butane	7.700	7.690	0.010	18446	34.9550	34.419(M)

QC Flag Legend

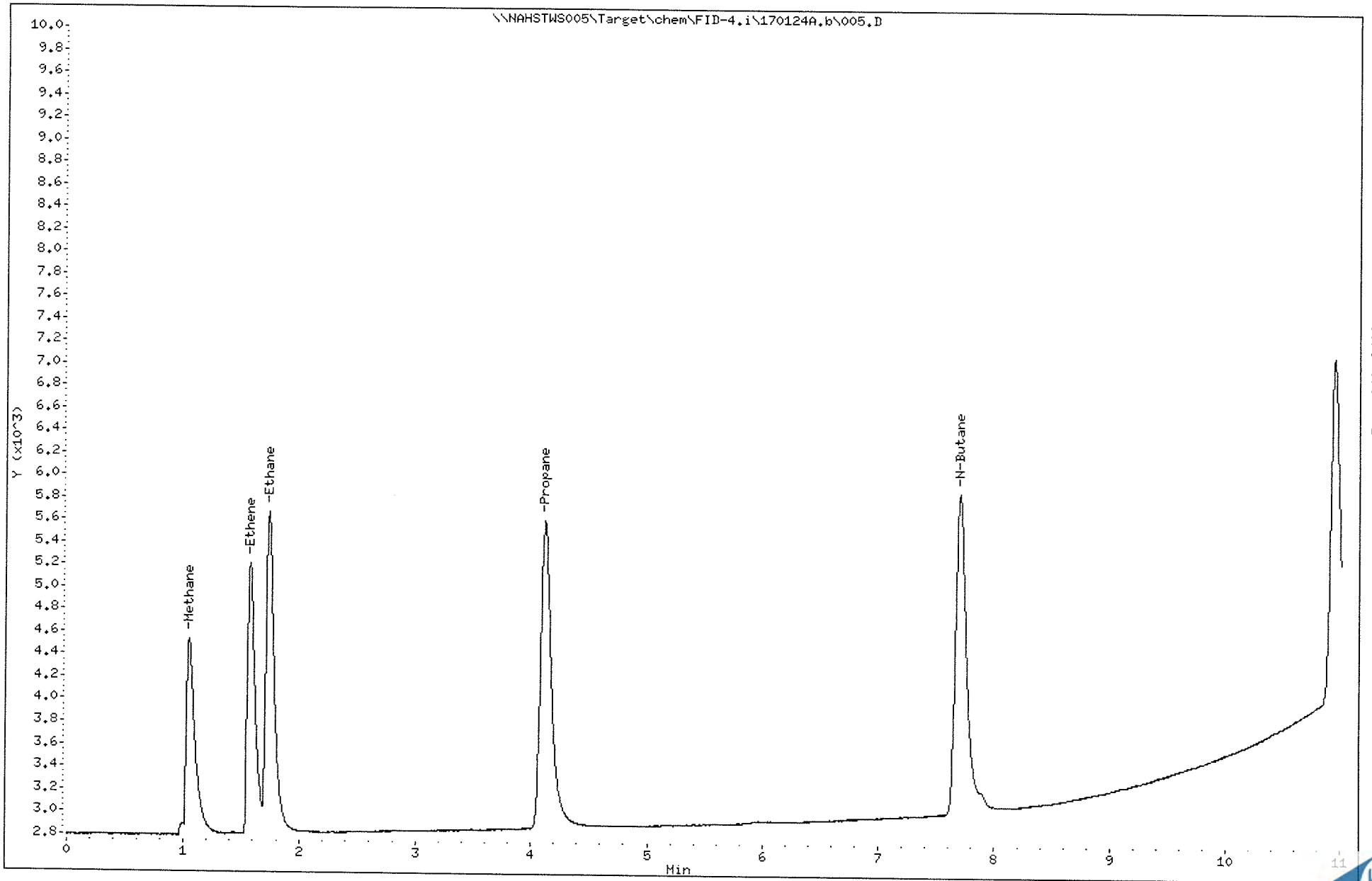
M - Compound response manually integrated.

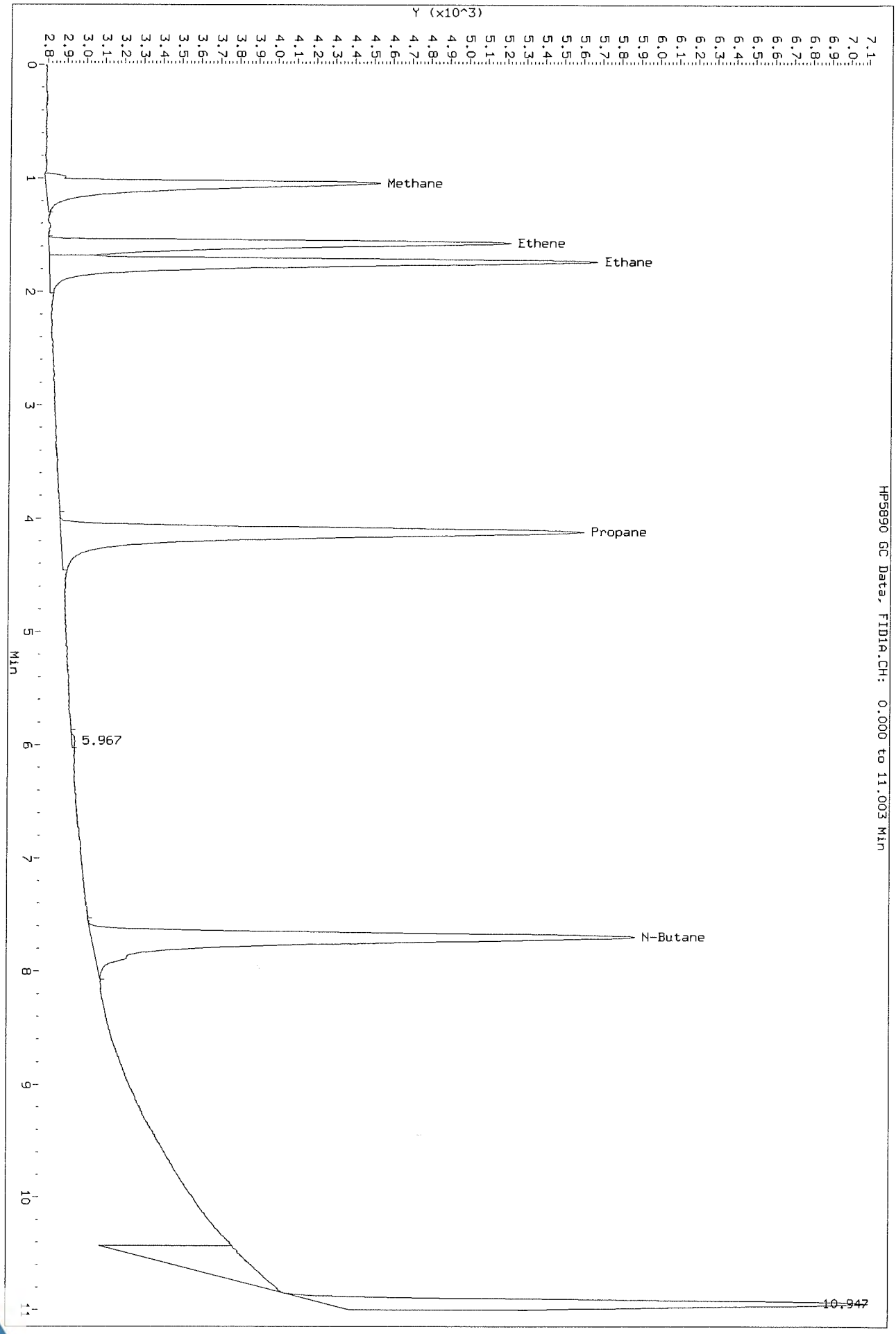
Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Date : 24-JAN-2017 10:39
Client ID: ICAL5
Sample Info: ICAL5;ICAL5;;;

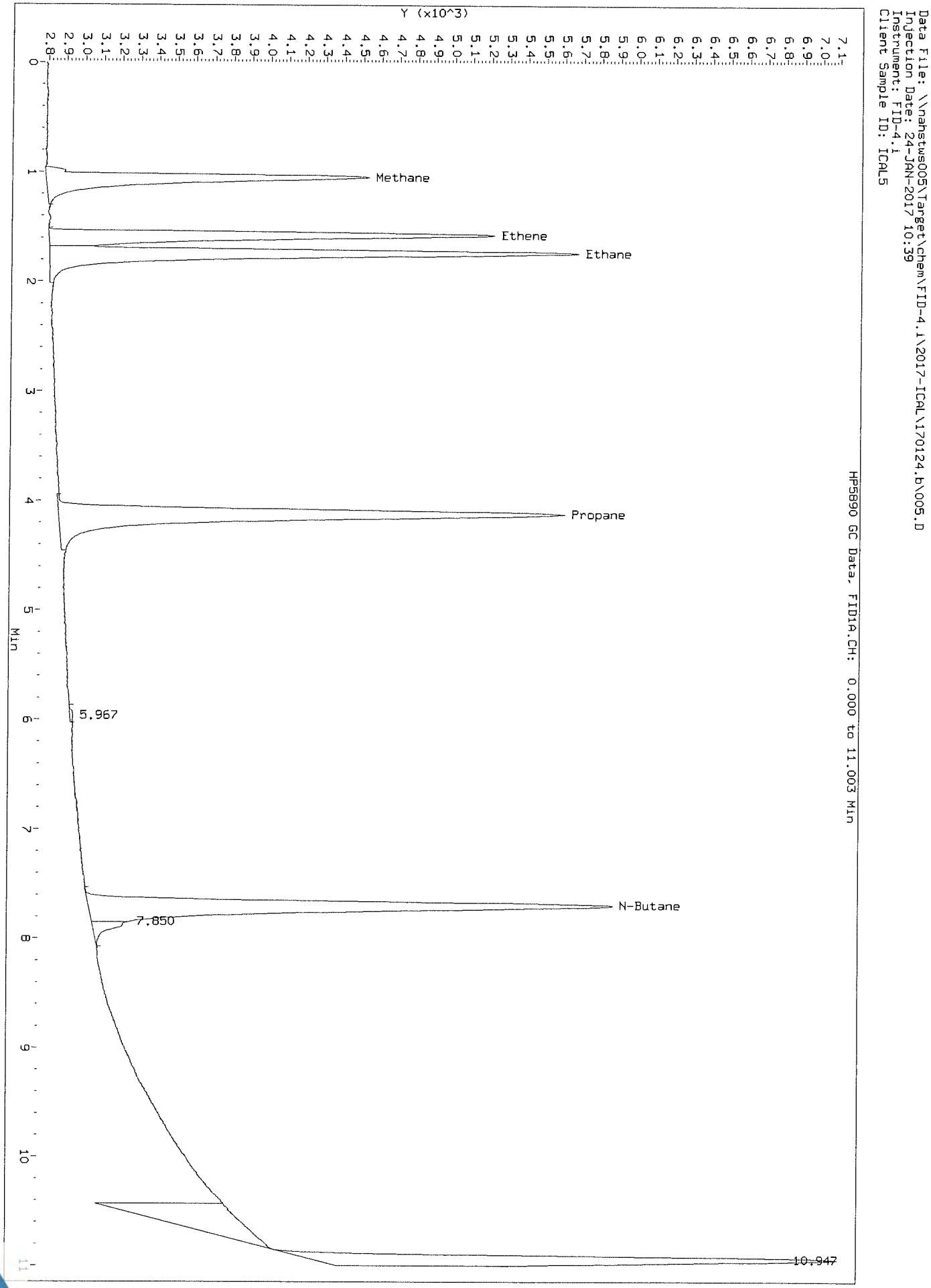
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\BEFORE\005.D
Injection Date: 24-JAN-2017 10:39
Instrument: FID-4.i
Client Sample ID: ICAL5
HP5890 GC Data, FID1A.CH: 0.000 to 11.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
5.967
N-Butane
10.947


Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\005.D
Injection Date: 24-JAN-2017 10:39
Instrument: FID-4.i
Client Sample ID: ICAL5
HP5890 GC Data, FID1A.CH: 0.000 to 11.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
5.967
N-Butane
7.850
10.947

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Lab Smp Id: ICAL6 Client Smp ID: ICAL6
Inj Date : 24-JAN-2017 10:57
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL6;ICAL6;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

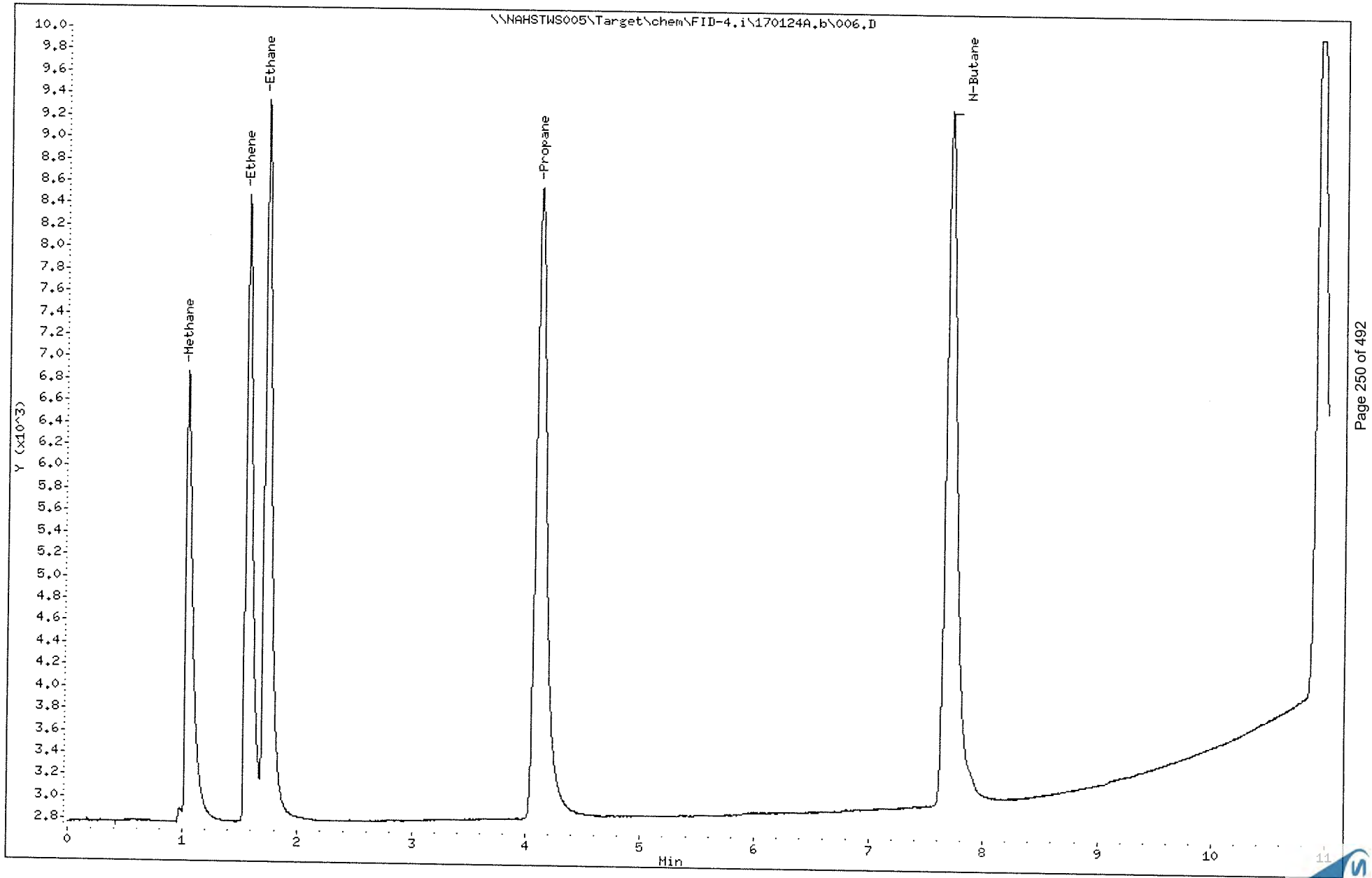
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	17957	19.2940	18.429
2 Ethene	1.550	1.556	-0.006	22910	53.8200	39.078
3 Ethane	1.716	1.723	-0.007	29505	36.0860	40.070
4 Propane	4.110	4.113	-0.003	38286	52.9260	52.796
5 N-Butane	7.696	7.690	0.006	42817	69.9110	70.855

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Date : 24-JAN-2017 10:57
Client ID: ICAL6
Sample Info: ICAL6;ICAL6;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Lab Smp Id: ICAL7 Client Smp ID: ICAL7
Inj Date : 24-JAN-2017 11:13
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL7;ICAL7;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:57 Cal File: 006.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.030	1.030	0.000	41736	38.5880	42.833(A)
2 Ethene	1.556	1.556	0.000	55865	67.4000	95.291(A)
3 Ethane	1.723	1.723	0.000	72124	72.1720	97.951(A)
4 Propane	4.113	4.113	0.000	96509	105.852	105.844
5 N-Butane	7.690	7.690	0.000	114164	139.821	139.707

QC Flag Legend

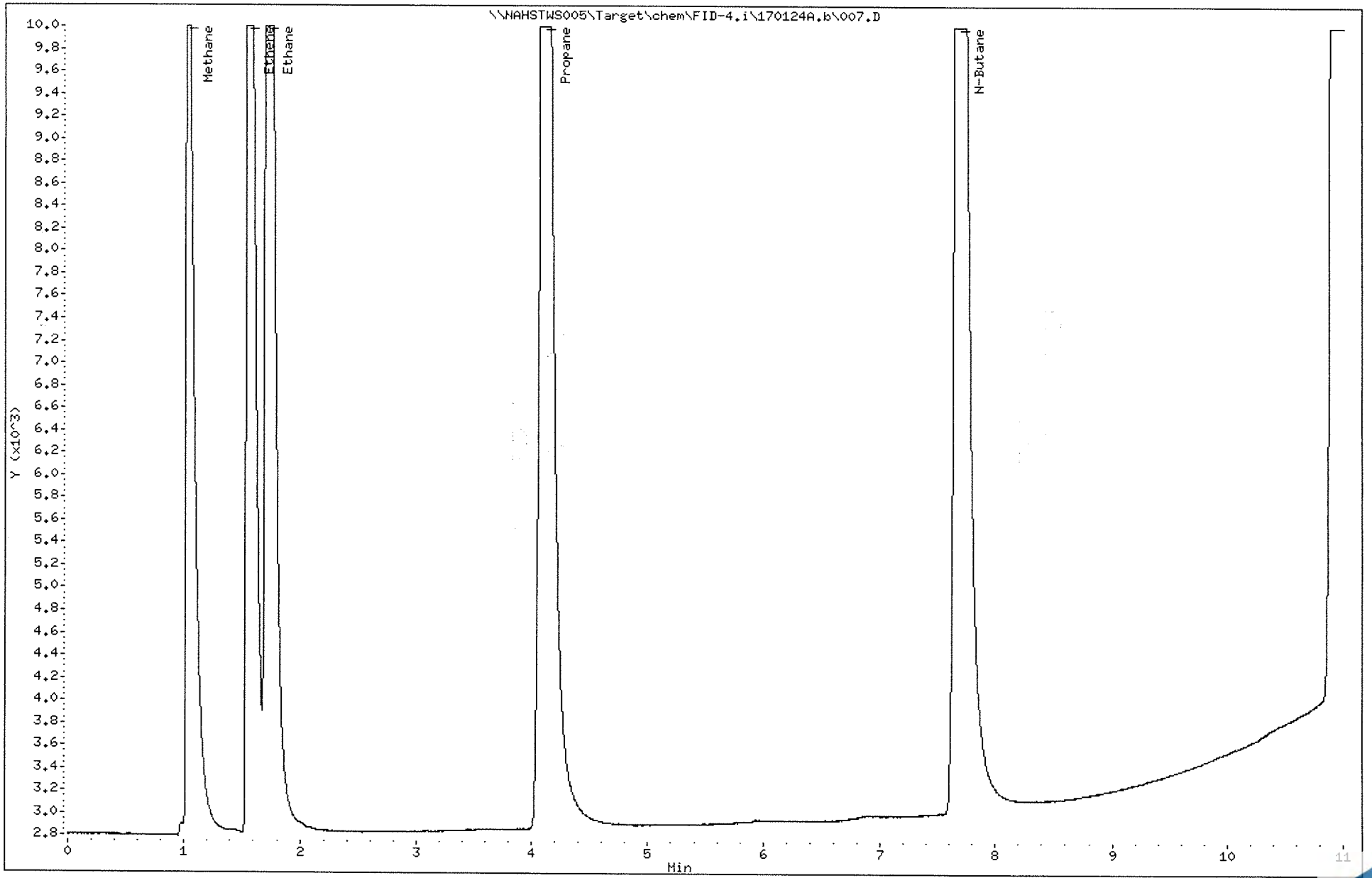
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Date : 24-JAN-2017 11:13
Client ID: ICAL7
Sample Info: ICAL7;ICAL7;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

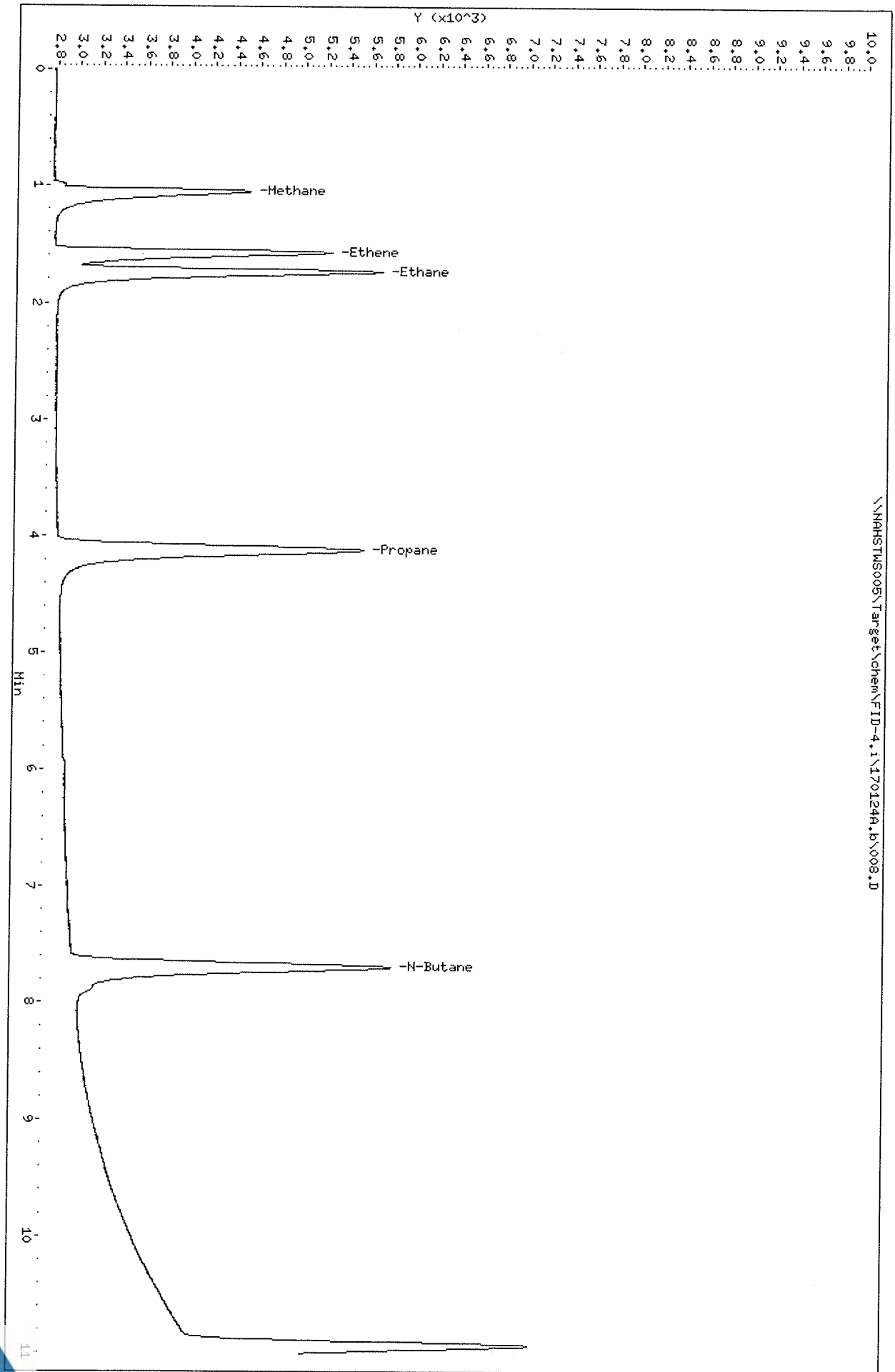
Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 24-JAN-2017 12:05
Operator : MA Inst ID: FID-4.i
Smp Info : ICV;ICV;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 8 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	1.046	1.030	0.016	9352	9.59792	9.597
2 Ethene	1.573	1.556	0.017	11192	19.0906	19.090
3 Ethane	1.736	1.723	0.013	14474	19.6571	19.657
4 Propane	4.116	4.113	0.003	18164	27.2381	27.238
5 N-Butane	7.696	7.690	0.006	19425	36.0103	36.010

Data File: \\NAHSTWS005\Target\chem\FID-4,i\170124A,b\008.D
Date : 24-JAN-2017 12:05
Client ID: ICV
Sample Info: ICV;ICV;;;
Column phase: Rtx-PLOT

Instrument: FID-4,i
Operator: HA
Column diameter: 0.53



FID04 -Logbook

Batch: 42550 **Analyst:** Devak Giga

Date: 10-26-2020 **Reviewer:**

Method: RSK **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	RSK-CCV	CCV	10-26-2020 09:50 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	MBLK-201026	MBLK	10-26-2020 10:00 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	LCS-201026	LCS	10-26-2020 10:08 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	LCSD-201026	LCSD	10-26-2020 10:19 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	HS20101242-02	SAMP	10-26-2020 10:30 am	1.00	0.00 mL	0.00 mL	005.D	Liquid	Y	NA
6	HS20101242-03	SAMP	10-26-2020 10:40 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	HS20101242-04	SAMP	10-26-2020 10:48 am	1.00	0.00 mL	0.00 mL	007.D	Liquid	Y	NA
8	HS20101242-05	SAMP	10-26-2020 10:55 am	1.00	0.00 mL	0.00 mL	008.D	Liquid	Y	NA
9	HS20101242-07	SAMP	10-26-2020 11:04 am	1.00	0.00 mL	0.00 mL	009.D	Liquid	Y	NA
10	HS20101242-08	SAMP	10-26-2020 11:19 am	1.00	0.00 mL	0.00 mL	010.D	Liquid	Y	NA
11	RSK-CCV	CCV	10-26-2020 11:27 am	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS20101242-09	SAMP	10-26-2020 11:47 am	1.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS20101242-02	SAMP	10-26-2020 12:08 pm	100.0(	0.00 mL	0.00 mL	013.D	Liquid	Y	NA
14	HS20101242-05	SAMP	10-26-2020 12:17 pm	100.0(	0.00 mL	0.00 mL	014.D	Liquid	Y	NA
15	HS20101242-07	SAMP	10-26-2020 12:24 pm	20.00	0.00 mL	0.00 mL	015.D	Liquid	Y	NA
16	HS20101242-08	SAMP	10-26-2020 12:36 pm	50.00	0.00 mL	0.00 mL	016.D	Liquid	Y	NA
17	HS20101242-09	SAMP	10-26-2020 12:45 pm	200.0(	0.00 mL	0.00 mL	017.D	Liquid	Y	NA
18	HS20101079-01	SAMP	10-26-2020 12:57 pm	1.00	0.00 mL	0.00 mL	018.D	Liquid	Y	NA
19	HS20101079-03	SAMP	10-26-2020 01:05 pm	1.00	0.00 mL	0.00 mL	019.D	Liquid	Y	NA
20	HS20101079-03MS	MS	10-26-2020 01:16 pm	1.00	0.00 mL	0.00 mL	020.D	Liquid	Y	NA
21	HS20101079-03MSD	MSD	10-26-2020 01:34 pm	1.00	0.00 mL	0.00 mL	021.D	Liquid	Y	NA
22	RSK-CCV	CCV	10-26-2020 01:42 pm	1.00	0.00 mL	0.00 mL	022.D	Liquid	Y	NA
23	HS20101079-01	SAMP	10-26-2020 02:15 pm	10.00	0.00 mL	0.00 mL	023.D	Liquid	Y	NA
24	HS20101123-01	SAMP	10-26-2020 02:23 pm	1.00	0.00 mL	0.00 mL	024.D	Liquid	Y	NA
25	HS20101123-01MS	MS	10-26-2020 02:31 pm	1.00	0.00 mL	0.00 mL	025.D	Liquid	Y	NA
26	HS20101123-01MSD	MSD	10-26-2020 02:49 pm	1.00	0.00 mL	0.00 mL	026.D	Liquid	Y	NA
27	HS20101123-04	SAMP	10-26-2020 03:03 pm	1.00	0.00 mL	0.00 mL	027.D	Liquid	Y	NA
28	HS20101123-09	SAMP	10-26-2020 03:12 pm	1.00	0.00 mL	0.00 mL	028.D	Liquid	Y	NA
29	HS20101123-04	SAMP	10-26-2020 03:21 pm	100.0(	0.00 mL	0.00 mL	029.D	Liquid	Y	NA
30	RSK-CCV	CCV	10-26-2020 03:32 pm	1.00	0.00 mL	0.00 mL	030.D	Liquid	Y	NA

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 0950

Lab File ID: 001 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	681.70482	0.01	5.25	20.00	AVRG
Methane	974.99200	865.24308	0.01	11.26	20.00	AVRG
Ethene	585.76000	522.13650	0.01	10.86	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1127

Lab File ID: 011 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	778.14111	0.01	-8.15	20.00	AVRG
Methane	974.99200	919.87146	0.01	5.65	20.00	AVRG
Ethene	585.76000	617.21068	0.01	-5.37	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1342

Lab File ID: 022 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	751.98138	0.01	-4.52	20.00	AVRG
Methane	974.99200	889.91396	0.01	8.73	20.00	AVRG
Ethene	585.76000	584.51039	0.01	0.21	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101079

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1532

Lab File ID: 030 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	734.30139	0.01	-2.06	20.00	AVRG
Methane	974.99200	918.52389	0.01	5.79	20.00	AVRG
Ethene	585.76000	590.38576	0.01	-0.79	20.00	AVRG

FORM VII GASES

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\001.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\001.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 09:50
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.466	0.466	0.000	8347	9.64700	8.561
2 Ethene	0.703	0.703	0.000	8798	16.8500	15.019
3 Ethane	0.783	0.783	0.000	12300	18.0430	17.095

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\001.D

Date : 26-OCT-2020 09:50

Client ID: RSK-CCV

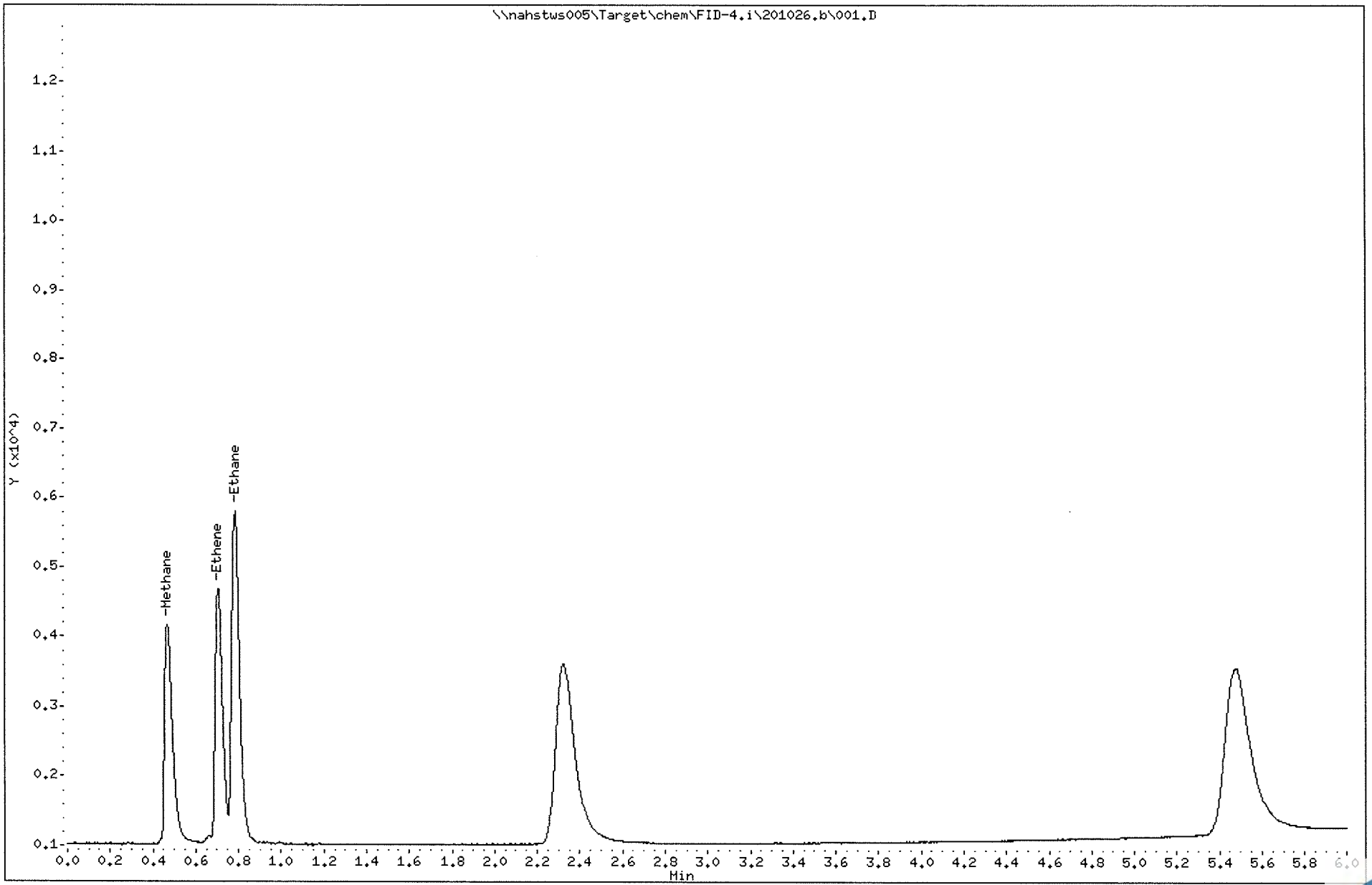
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL

Column diameter: 0.53



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\002.D
Lab Smp Id: MBLK-201026 Client Smp ID: MBLK-201026
Inj Date : 26-OCT-2020 10:00
Operator : PL Inst ID: FID-4.i
Smp Info : MBLK-201026;MBLK-201026;3;;BLANK
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 2 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

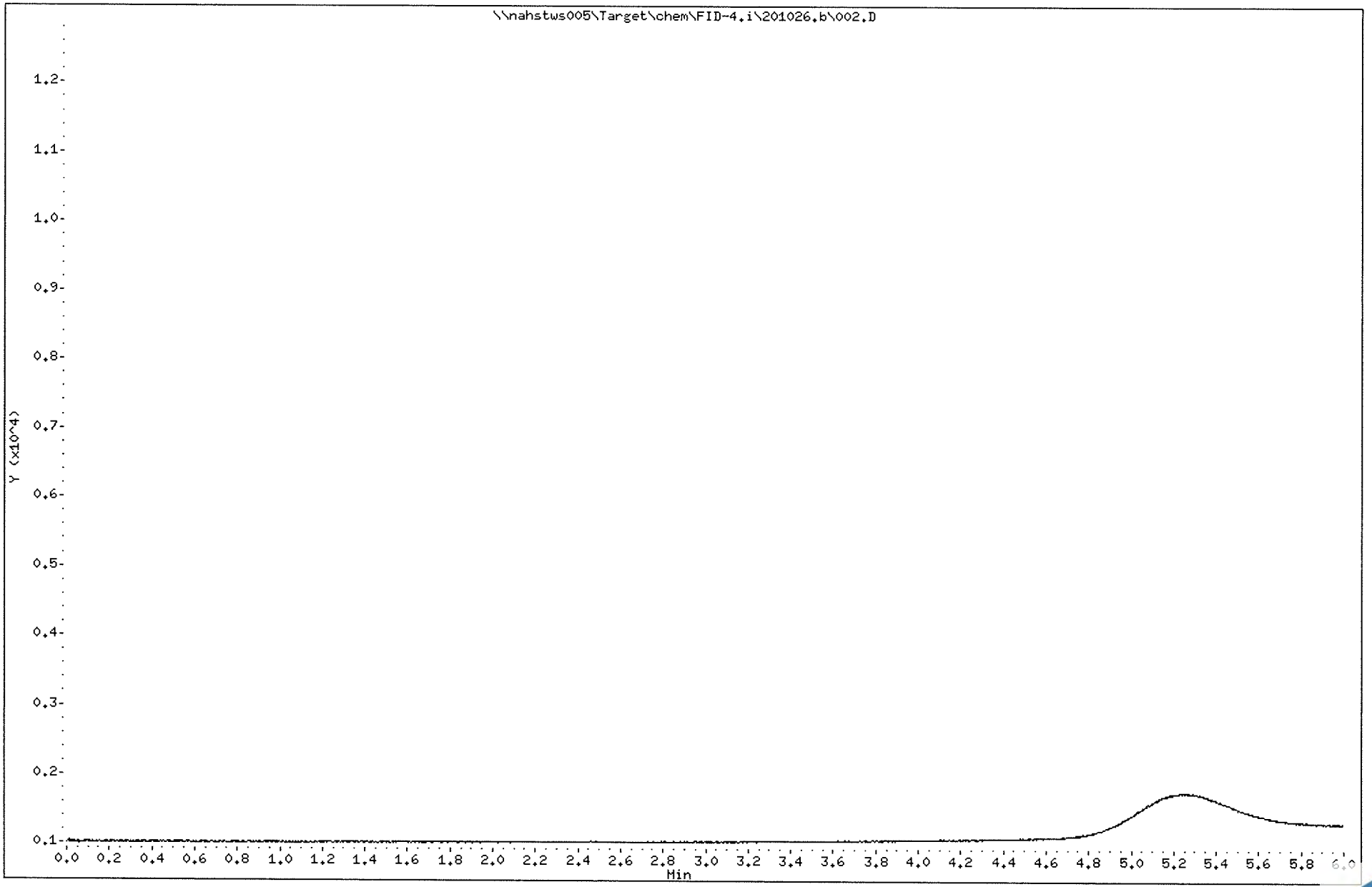
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\002.D
Date : 26-OCT-2020 10:00
Client ID: MBLK-201026
Sample Info: MBLK-201026;MBLK-201026;3;;BLANK

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\003.D
Lab Smp Id: LCS-201026 Client Smp ID: LCS-201026
Inj Date : 26-OCT-2020 10:08
Operator : PL Inst ID: FID-4.i
Smp Info : LCS-201026;LCS-201026;3;;LCS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.463	0.466	-0.003	9115	9.34879	9.348
2 Ethene	0.700	0.703	-0.003	10888	18.5878	18.587
3 Ethane	0.780	0.783	-0.003	14653	20.3658	20.365(M)

QC Flag Legend

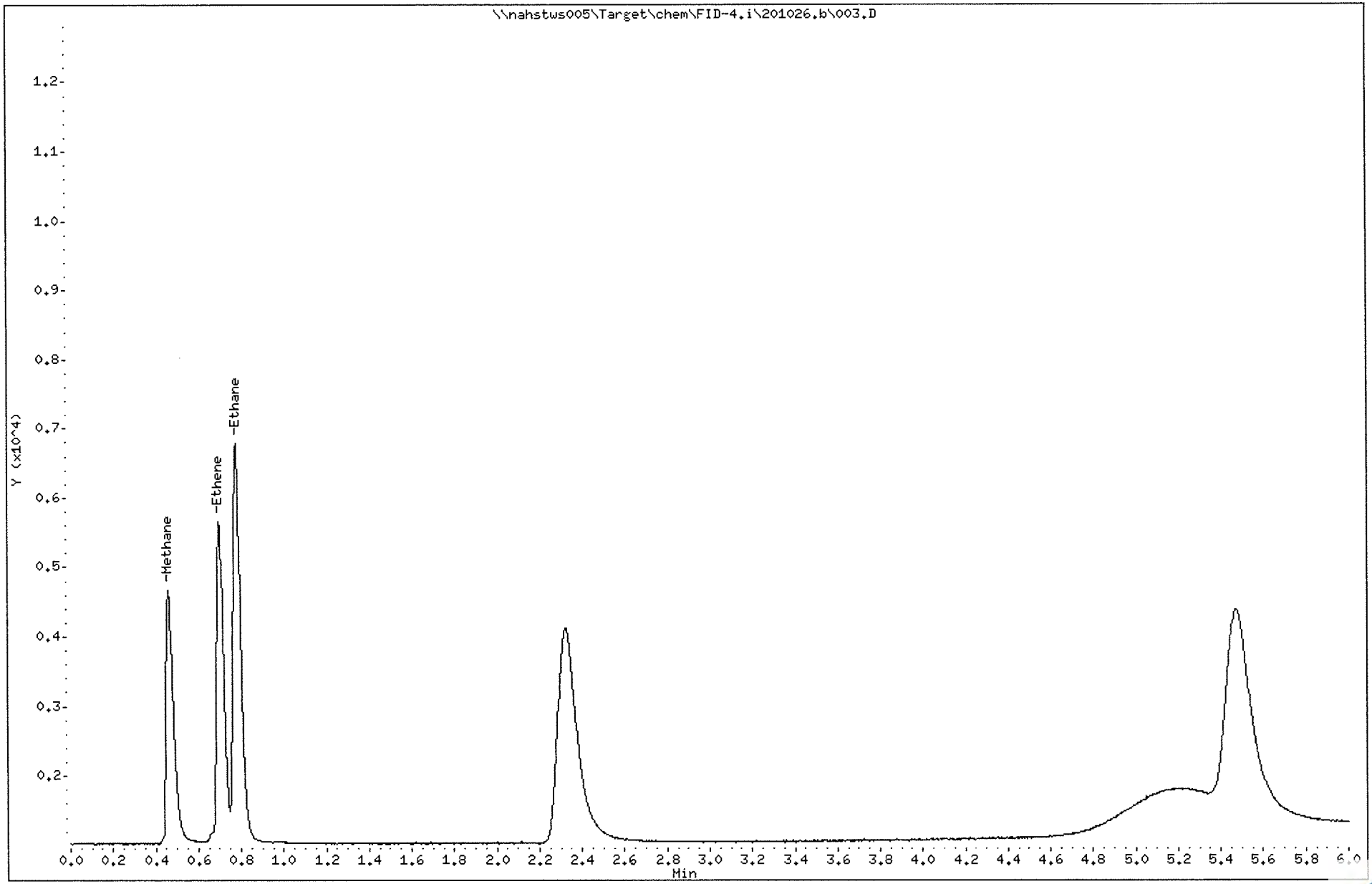
M - Compound response manually integrated.

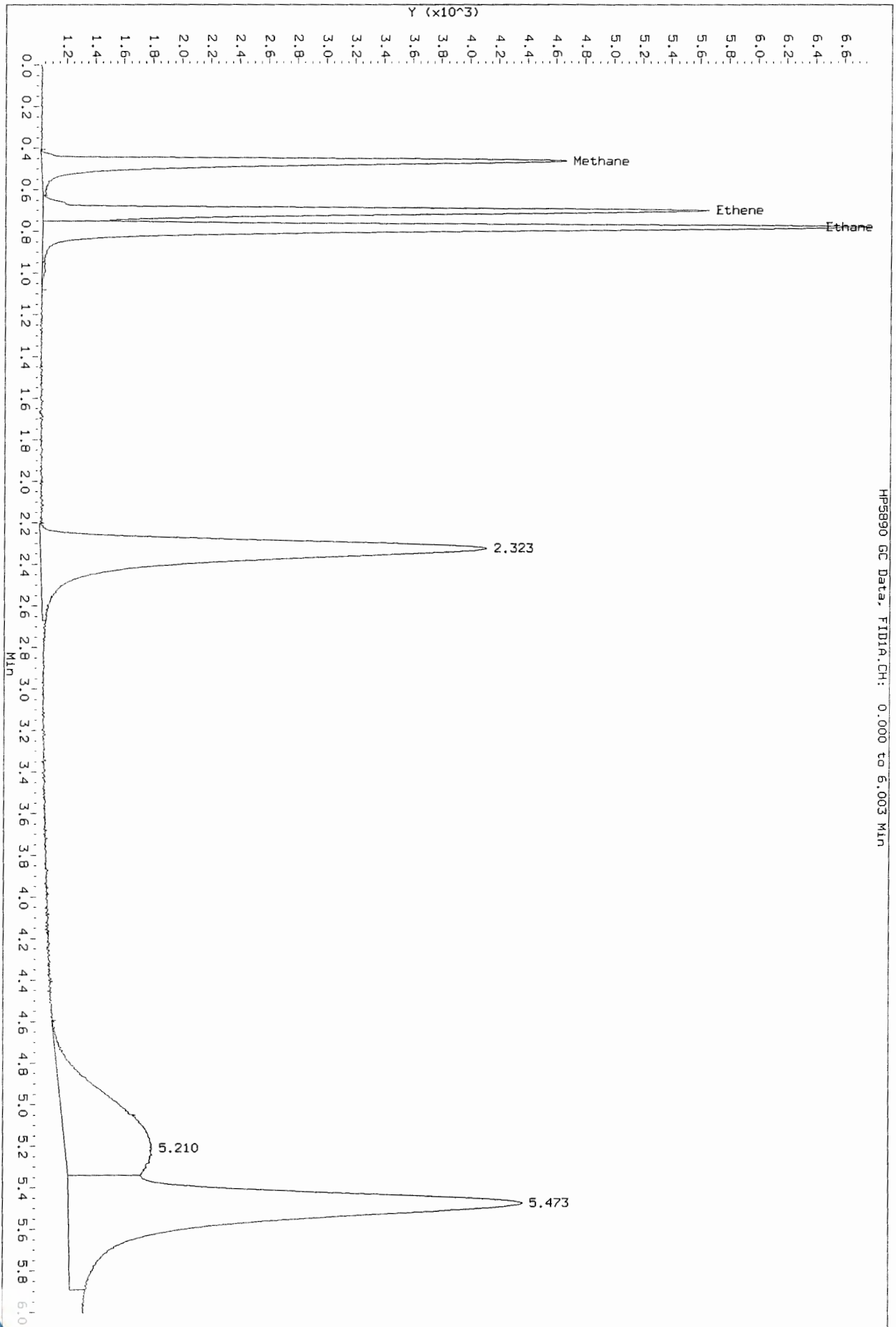
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D
Date : 26-OCT-2020 10:08
Client ID: LCS-201026
Sample Info: LCS-201026;LCS-201026;3;;LCS

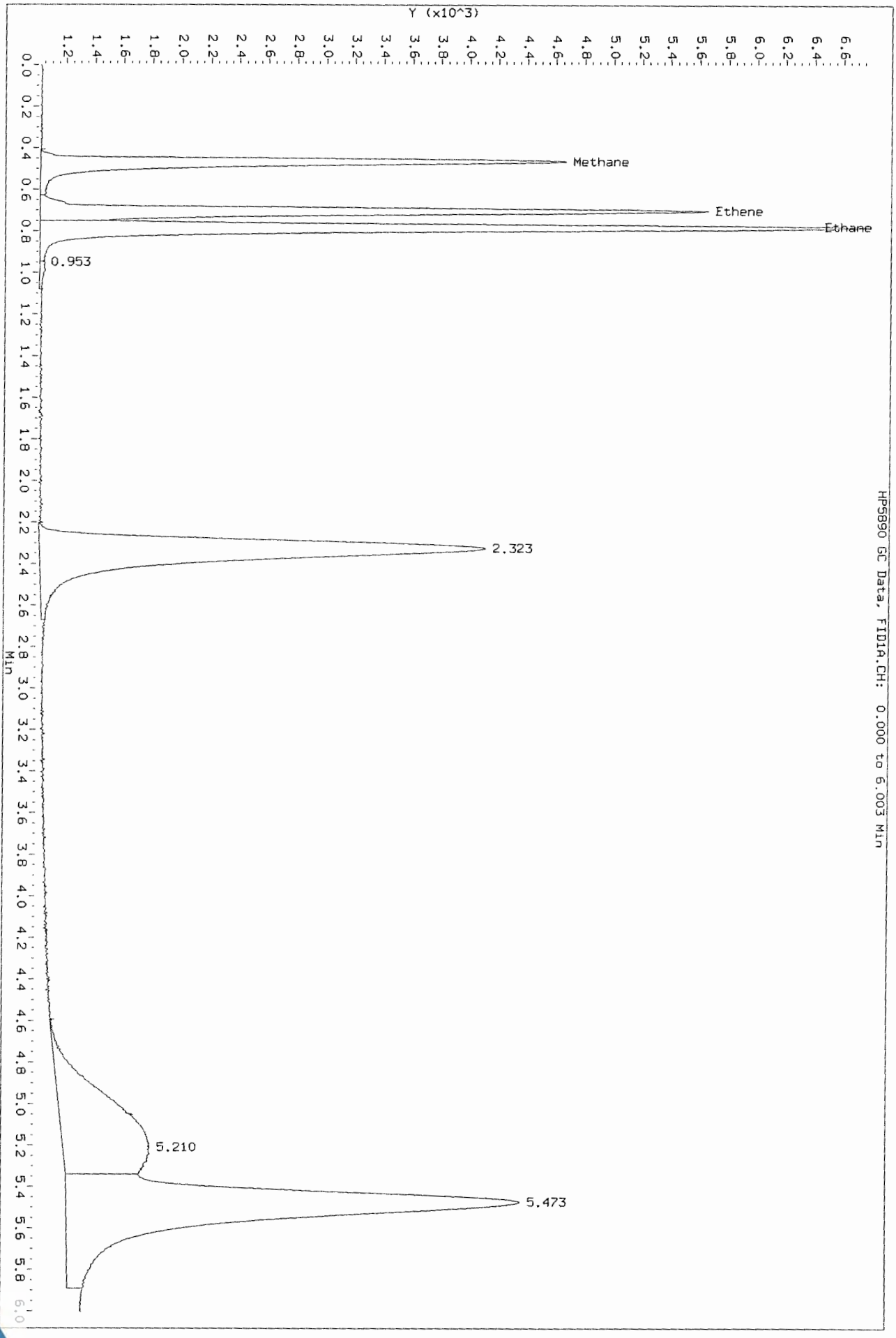
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\003.D
Injection Date: 26-OCT-2020 10:08
Instrument: FID-4.i
Client Sample ID: LCS-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.323
5.210
5.473


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D
Injection Date: 26-OCT-2020 10:08
Instrument: FID-4.i
Client Sample ID: LCS-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
0.953
2.323
5.210
5.473

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\004.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\004.D
Lab Smp Id: LCSD-201026 Client Smp ID: LCSD-201026
Inj Date : 26-OCT-2020 10:19
Operator : PL Inst ID: FID-4.i
Smp Info : LCSD-201026;LCSD-201026;3;;LCSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 4 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.456	0.466	-0.010	10261	10.5242	10.524
2 Ethene	0.693	0.703	-0.010	10497	17.9203	17.920
3 Ethane	0.773	0.783	-0.010	14406	20.0225	20.022(M)

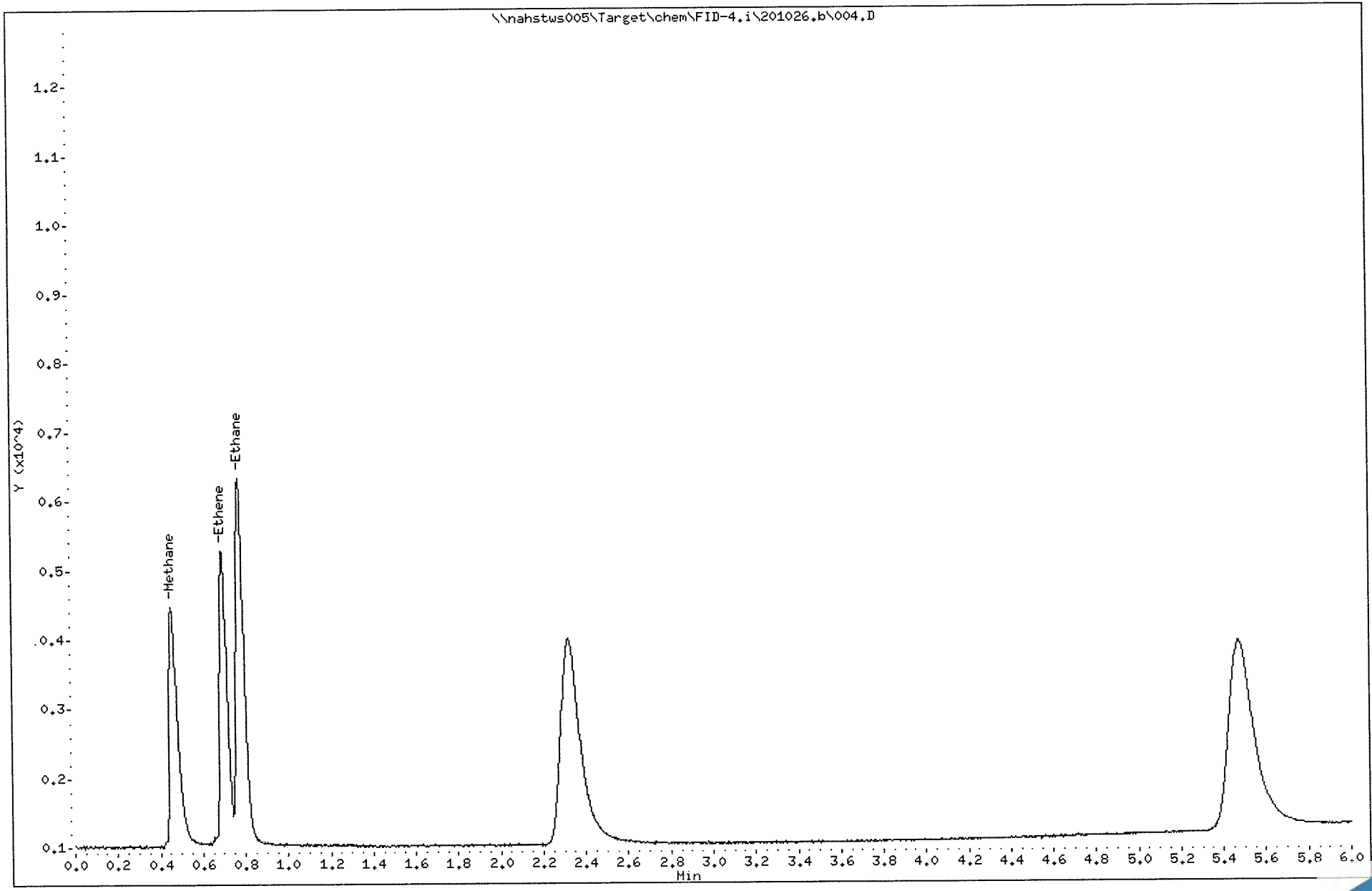
QC Flag Legend

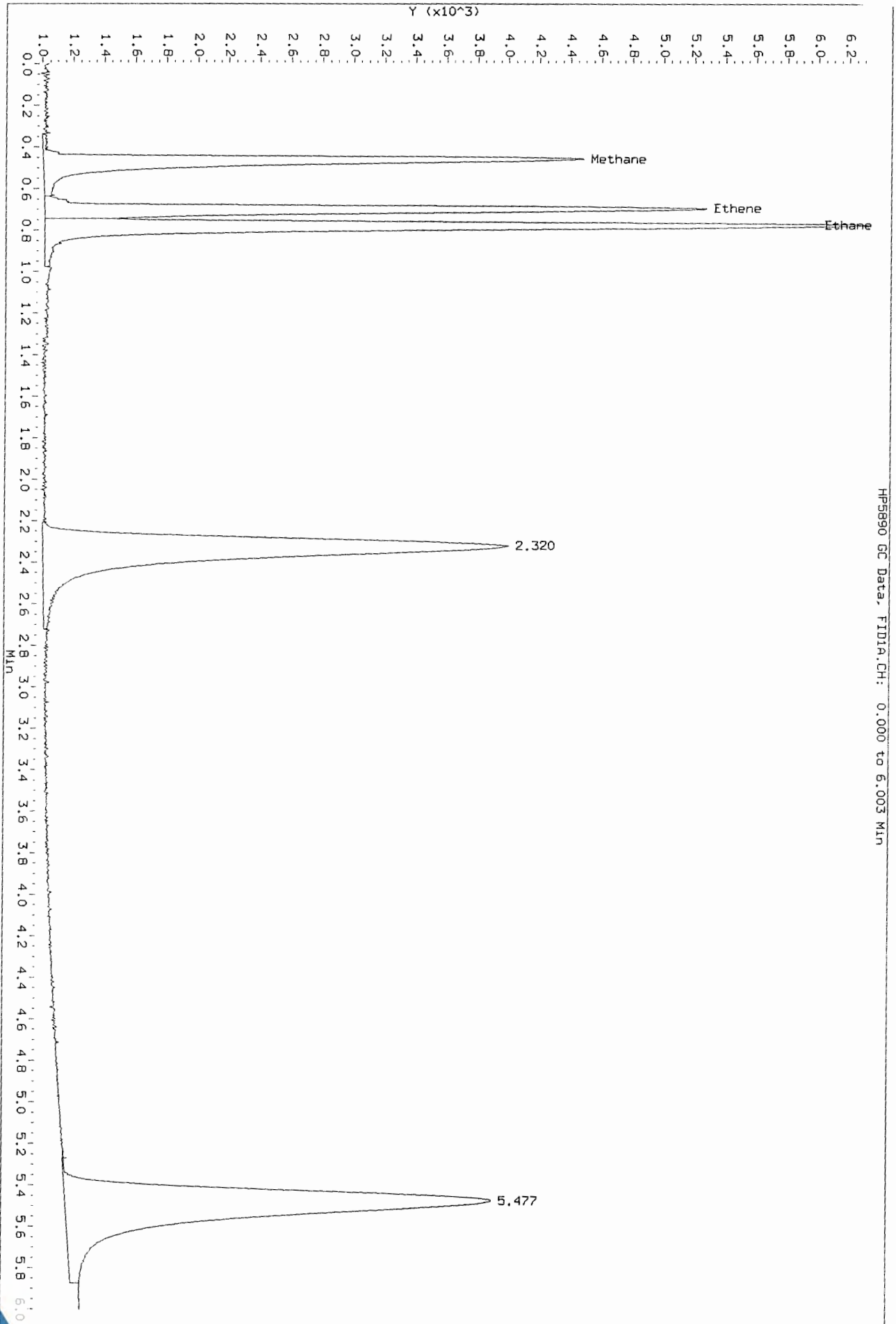
M - Compound response manually integrated.

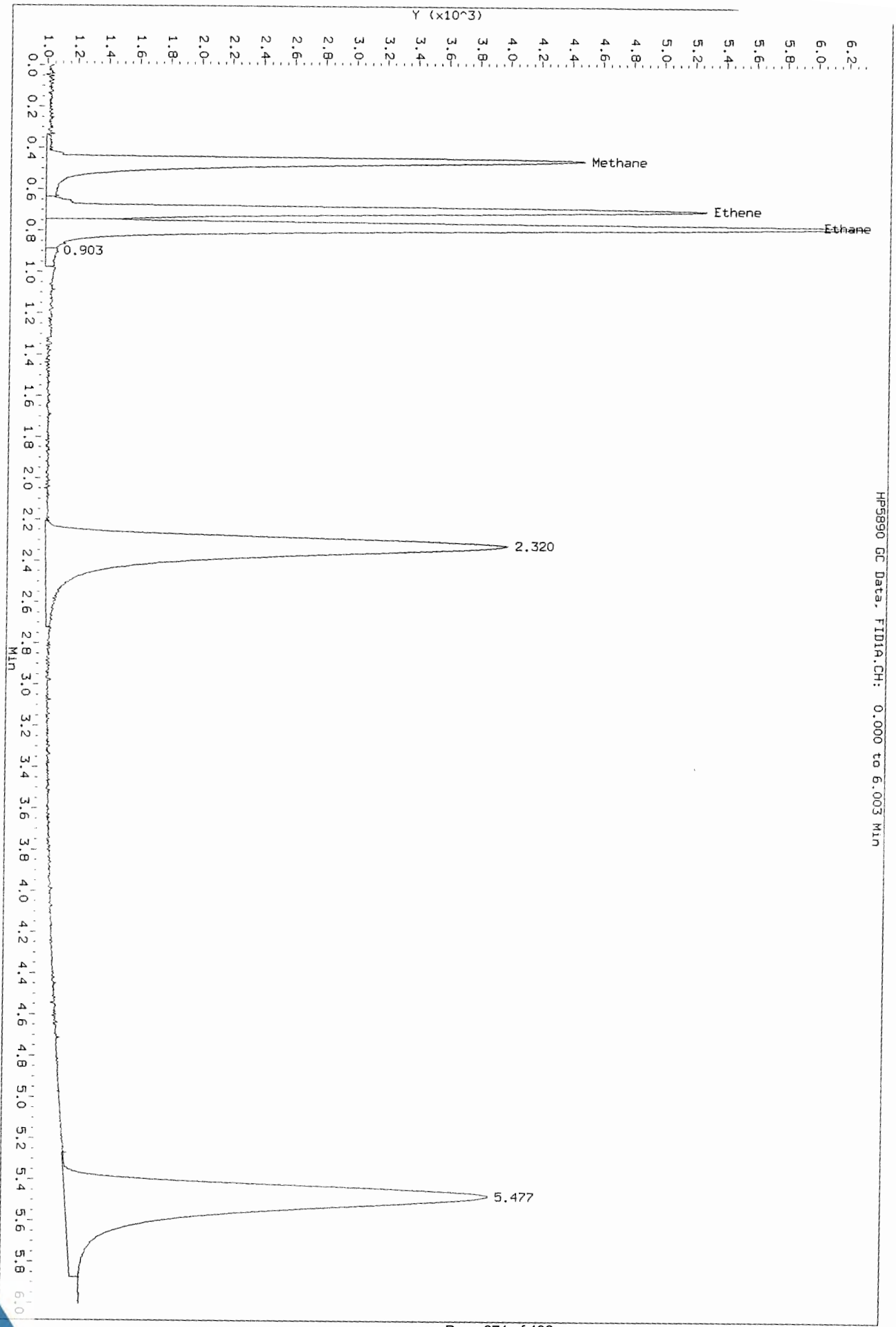
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\004.D
Date : 26-OCT-2020 10:19
Client ID: LCSD-201026
Sample Info: LCSD-201026;LCSD-201026;3;;LCSD

Instrument: FID-4.i
Operator: PL
Column diameter: 0.53

Column phase: Rtx-PLOT




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\004.D
Injection Date: 26-OCT-2020 10:19
Instrument: FID-4.i
Client Sample ID: LCSD-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.320
5.477


ta File: \\nahstws005\Target\chem\FID-4.i\201026.b\004.D
jection Date: 26-OCT-2020 10:19
strument: FID-4.i
ient Sample ID: LCSD-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Methane
Ethene
Ethane
0.903
2.320
5.477
Min

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\011.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\011.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 11:27
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

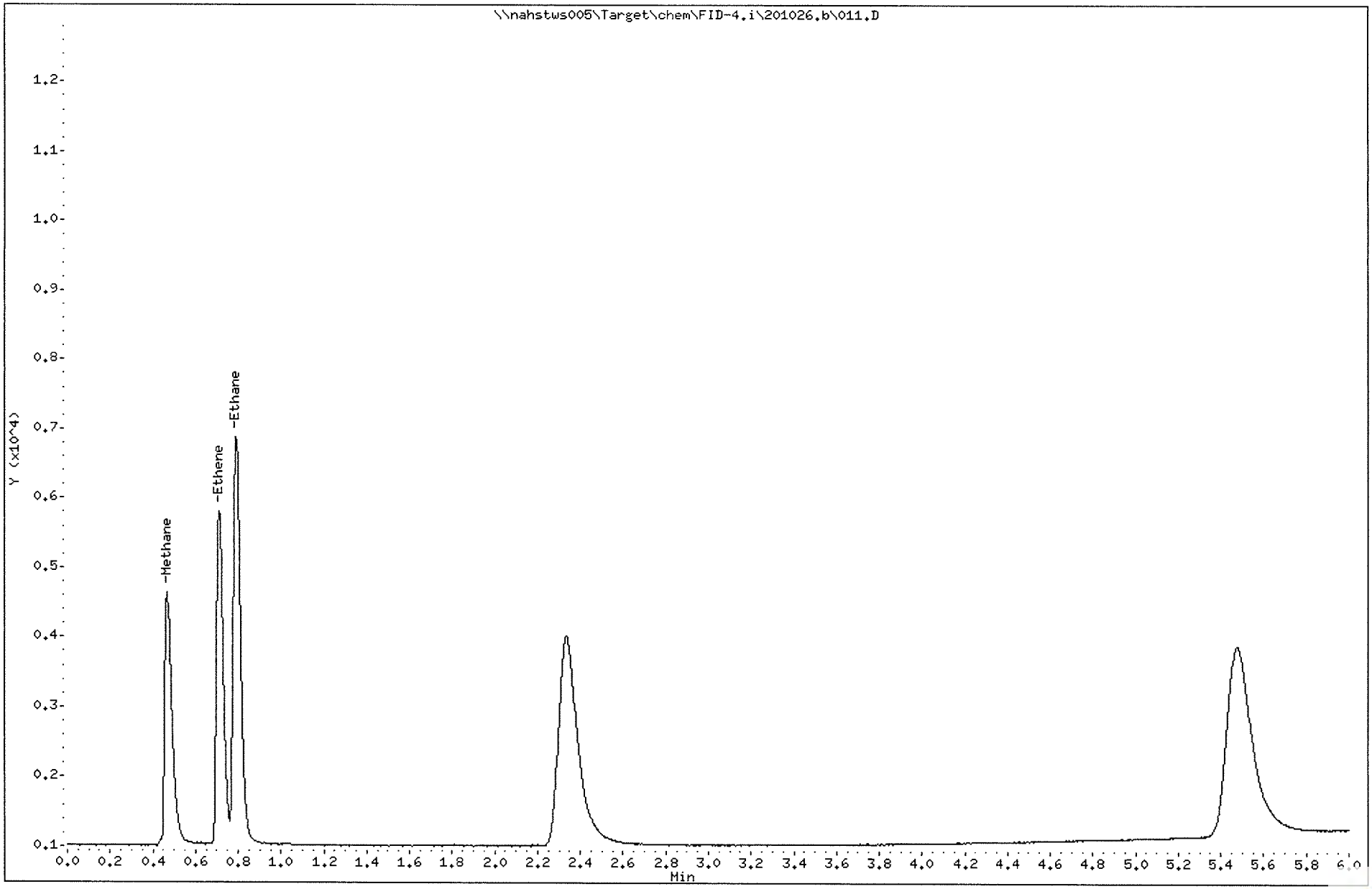
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	0.466	0.466	0.000	8874	9.64700	9.101
2 Ethene	0.710	0.710	0.000	10400	16.8500	17.754
3 Ethane	0.790	0.790	0.000	14040	18.0430	19.513

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\011.D
Date : 26-OCT-2020 11:27
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\018.D
Lab Smp Id: HS20101079-01 Client Smp ID: HS20101079-01
Inj Date : 26-OCT-2020 12:57
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-01;HS20101079-01
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.463	0.466	-0.003	188627	193.465	193.465(A)
2 Ethene	0.696	0.710	-0.014	69263	118.245	118.244(AM)

QC Flag Legend

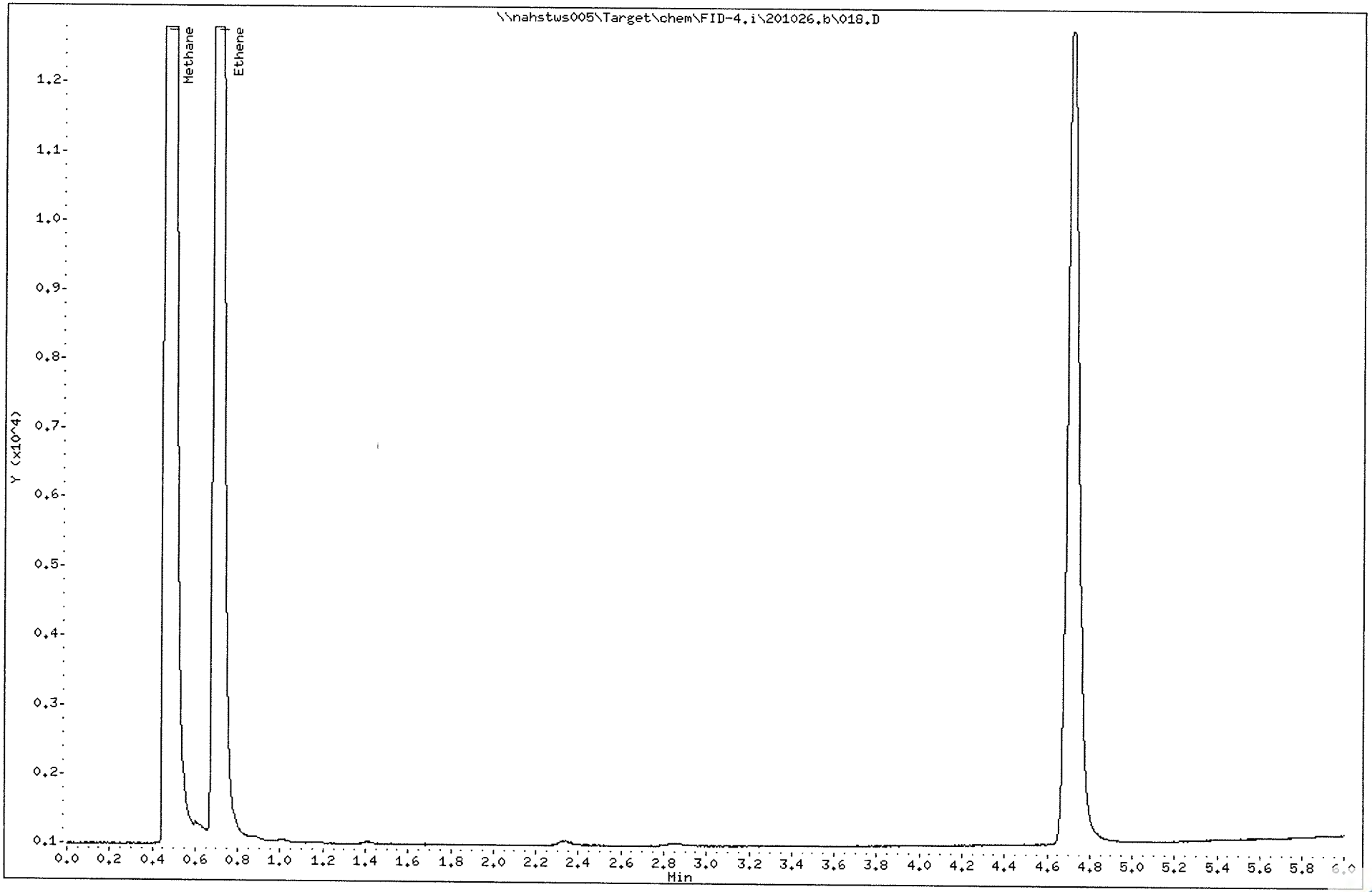
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

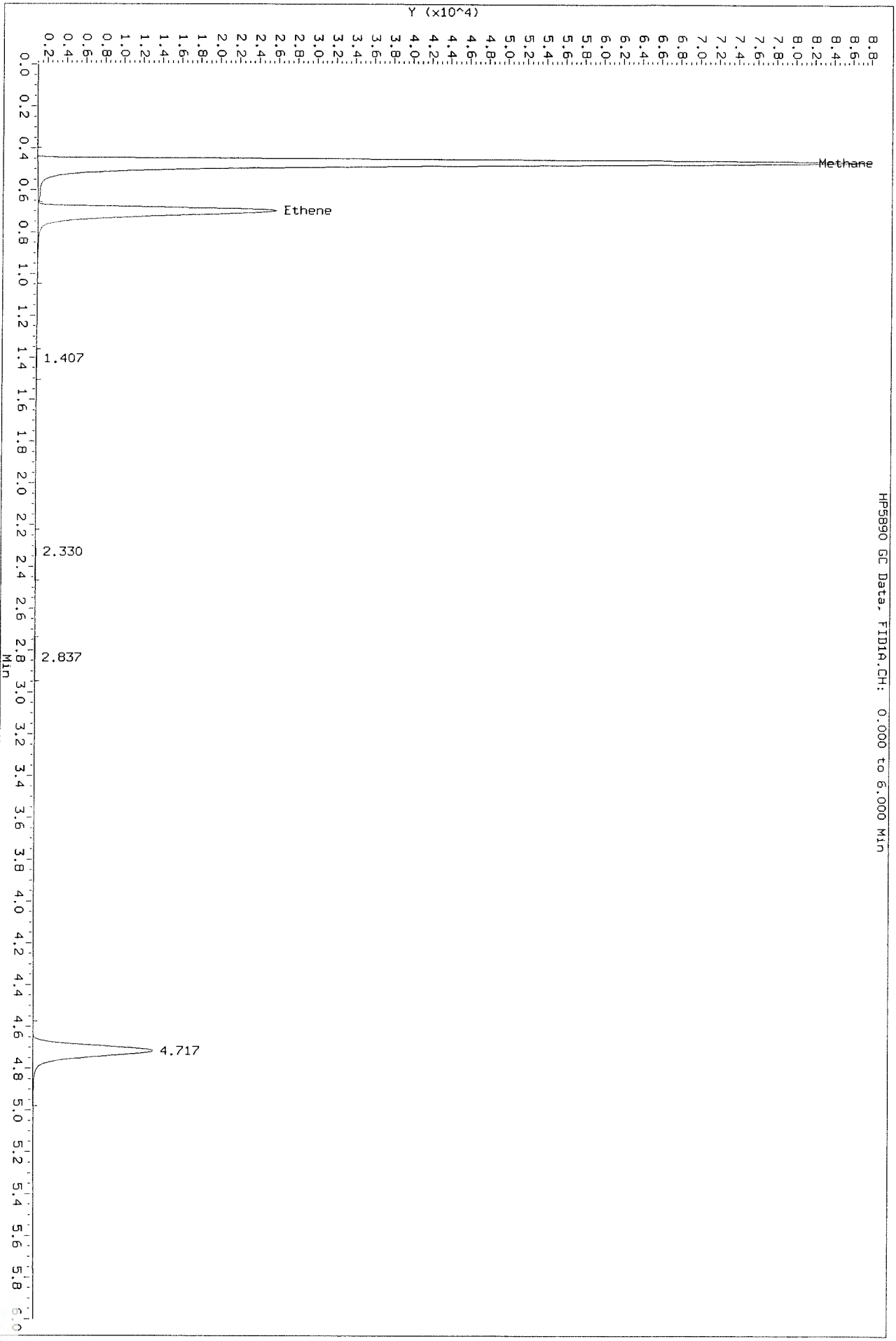
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\018.D
Date : 26-OCT-2020 12:57
Client ID: HS20101079-01
Sample Info: HS20101079-01;HS20101079-01

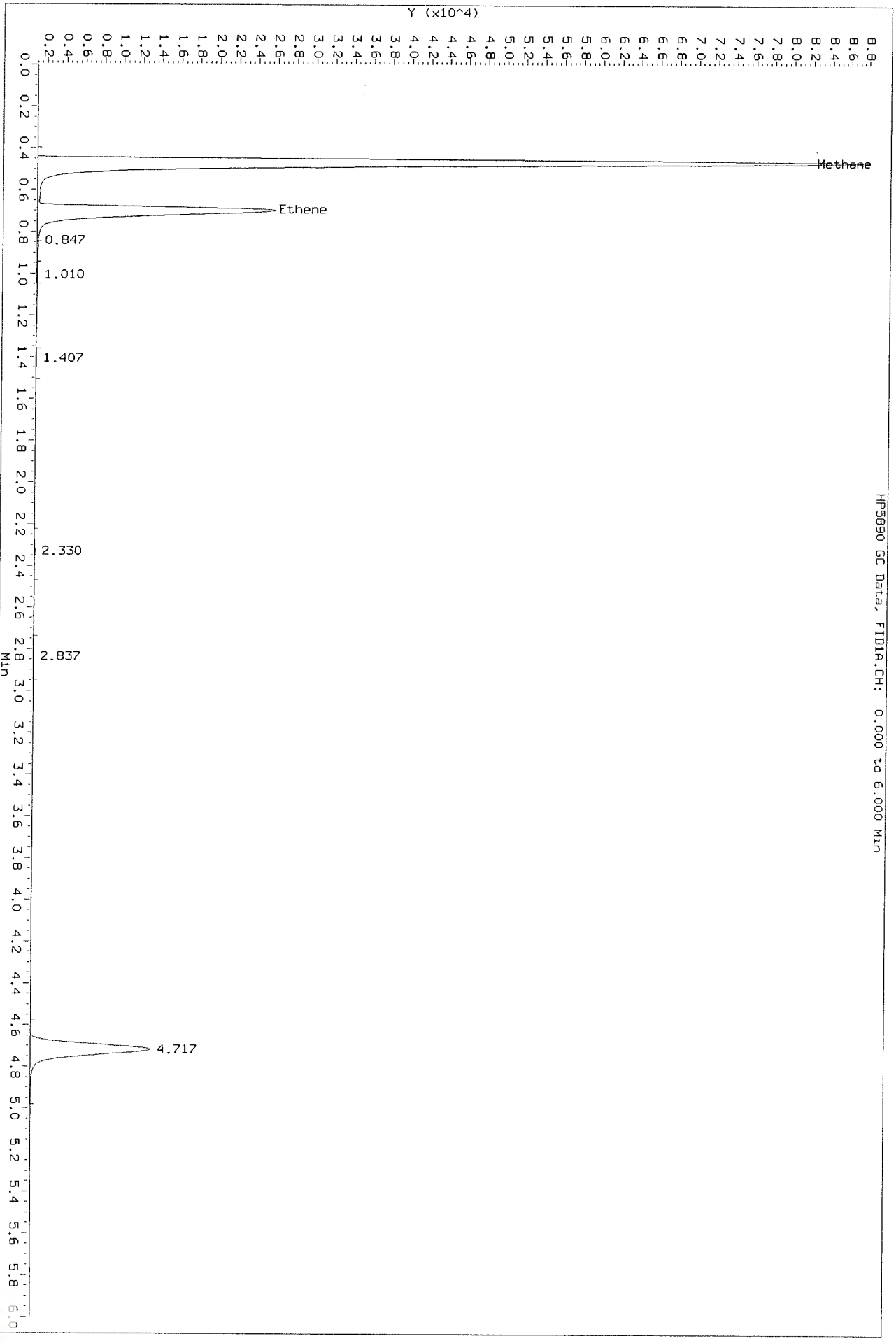
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\018.D
Injection Date: 26-OCT-2020 12:57
Instrument: FID-4.i
Client Sample ID: HS20101079-01
HP5890 GC Data. FIDiA.CH: 0.000 to 6.000 Min
Y (x10^4)
Min
Methane
Ethene
1.407
2.330
2.837
4.717


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\018.D
Injection Date: 26-OCT-2020 12:57
Instrument: FID-4.i
Client Sample ID: HS20101079-01
HP5890 GC Data, FIDiA.CH: 0.000 to 6.000 Min
Y (x10^4)
Min
Methane
Ethene
0.847
1.010
1.407
2.330
2.837
4.717

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\019.D
Lab Smp Id: HS20101079-03 Client Smp ID: HS20101079-03
Inj Date : 26-OCT-2020 13:05
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-03;HS20101079-03
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.480	0.466	0.014	3439	3.52721	3.527
2 Ethene	0.706	0.710	-0.004	718	1.22576	1.225(M)

QC Flag Legend

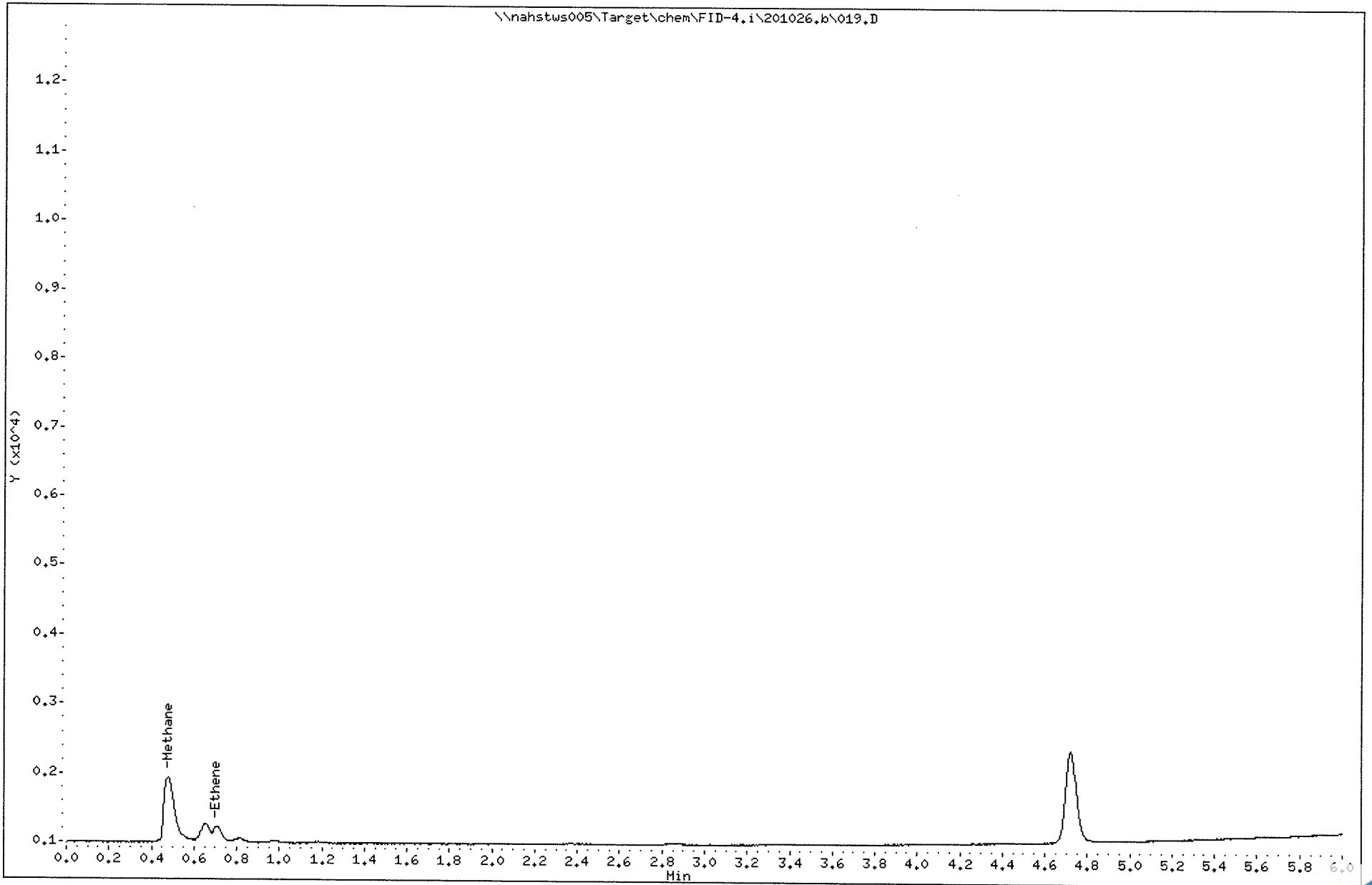
M - Compound response manually integrated.

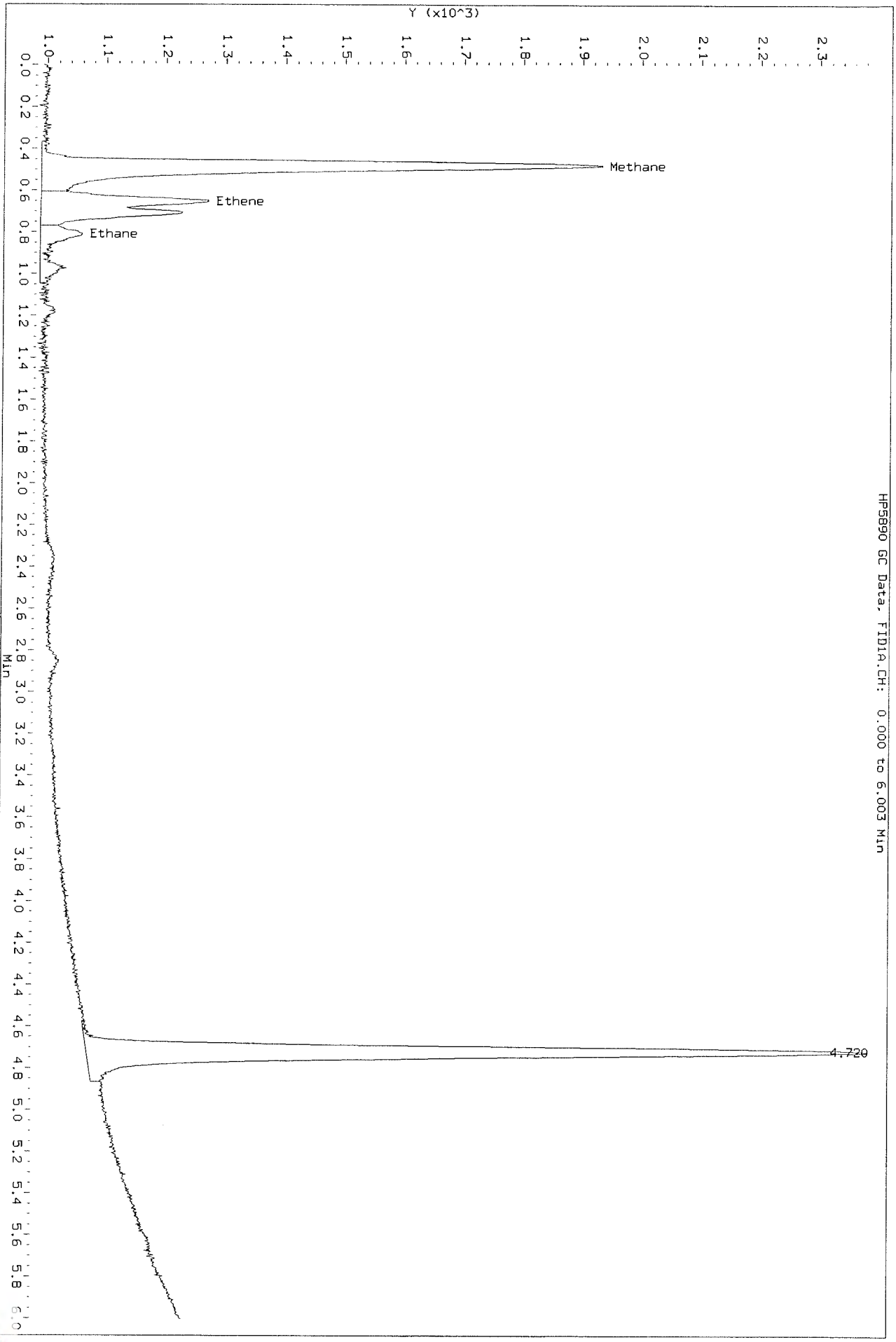
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\019.D
Date : 26-OCT-2020 13:05
Client ID: HS20101079-03
Sample Info: HS20101079-03;HS20101079-03

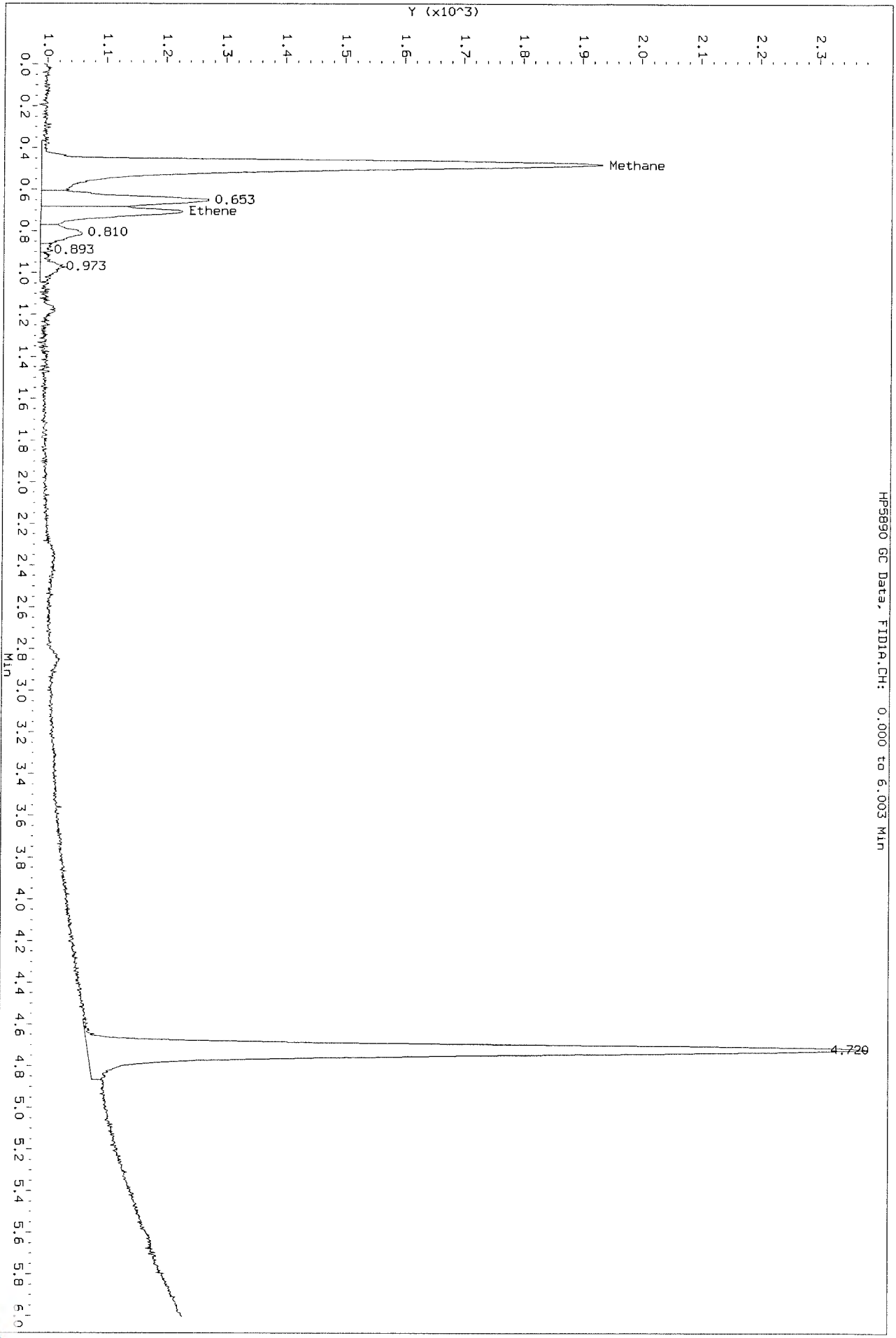
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\019.D
Injection Date: 26-OCT-2020 13:05
Instrument: FID-4.i
Client Sample ID: HS20101079-03
Y (x10^3)
Methane
Ethene
Ethane
4.720
HP5890 GC Data, FIDiA.CH: 0.000 to 6.003 Min
Min


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\019.D
Injection Date: 26-OCT-2020 13:05
Instrument: FID-4.i
Client Sample ID: HS20101079-03
HP5890 GC Data, FIDiA.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
0.653
Ethene
0.810
0.893
0.973
4.720

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\020.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\020.D
Lab Smp Id: HS20101079-03MS Client Smp ID: HS20101079-03MS
Inj Date : 26-OCT-2020 13:16
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-03MS;HS20101079-03MS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 20 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.466	0.466	0.000	6736	6.90877	6.908(R)
2 Ethene	0.703	0.710	-0.007	7284	12.4351	12.435(RM)
3 Ethane	0.783	0.790	-0.007	7976	11.0856	11.085(RM)

QC Flag Legend

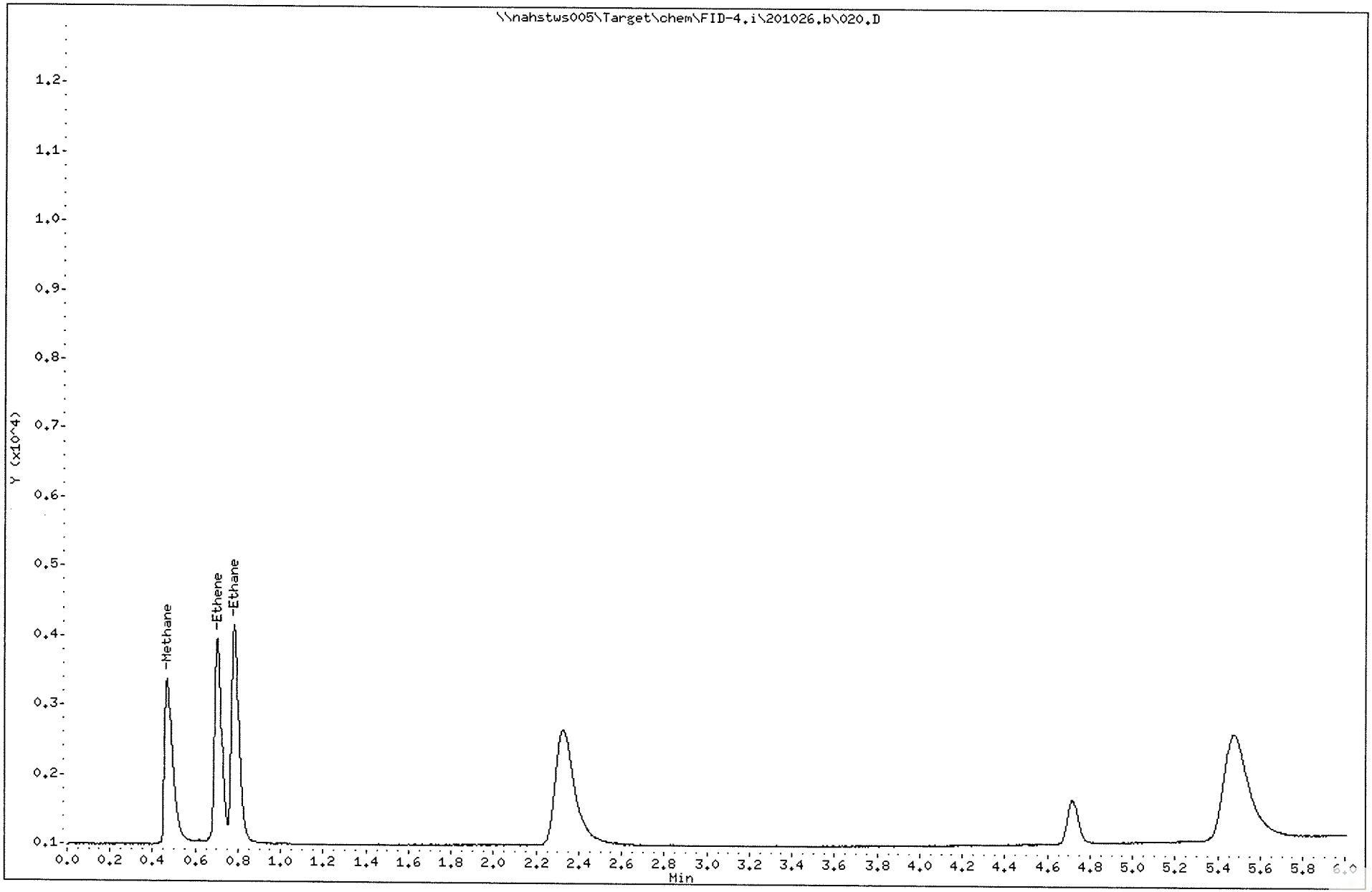
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

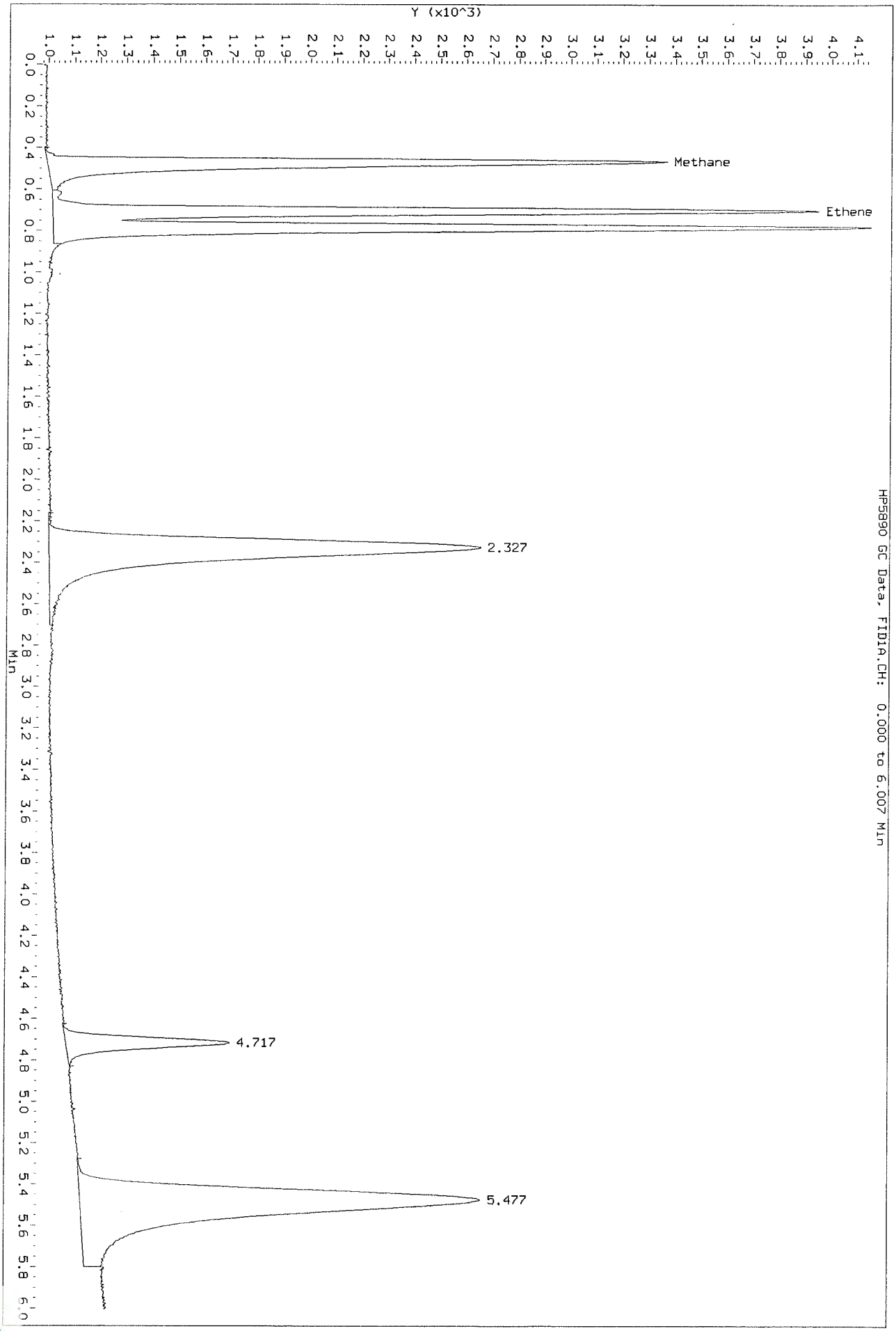
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\020.D
Date : 26-OCT-2020 13:16
Client ID: HS20101079-03MS
Sample Info: HS20101079-03MS;HS20101079-03MS

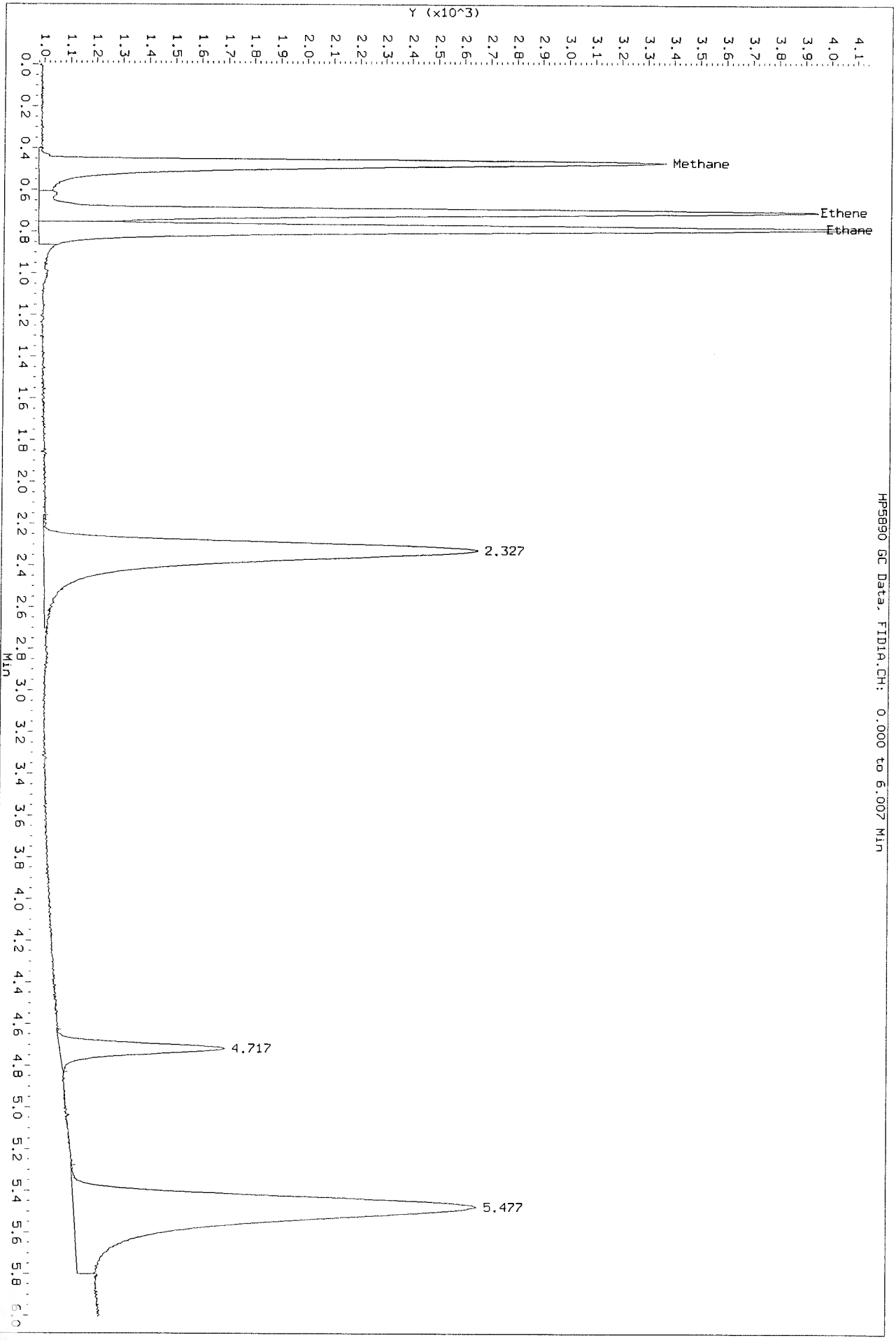
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\020.D
Injection Date: 26-OCT-2020 13:16
Instrument: FID-4.i
Client Sample ID: HS20101079-03MS
HP5890 GC Data, FID1A.CH: 0.000 to 6.007 Min
Y (x10^3)
Min
Methane
Ethene
2.327
4.717
5.477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Injection Date: 26-OCT-2020 13:16
Instrument: FID-4.i
Client Sample ID: HS20101079-03MS
Y (x10^3)
Methane
Ethene
Ethane
2.327
4.717
5.477
Min
HP5890 GC Data, FIDiA.CH: 0.000 to 6.007 Min

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\021.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\021.D
Lab Smp Id: HS20101079-03MSD Client Smp ID: HS20101079-03MSD
Inj Date : 26-OCT-2020 13:34
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-03MSD;HS20101079-03MSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 21 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.460	0.466	-0.006	13001	13.3345	13.334 (R)
2 Ethene	0.696	0.710	-0.014	15298	26.1165	26.116 (RM)
3 Ethane	0.776	0.790	-0.014	18749	26.0587	26.058 (RM)

QC Flag Legend

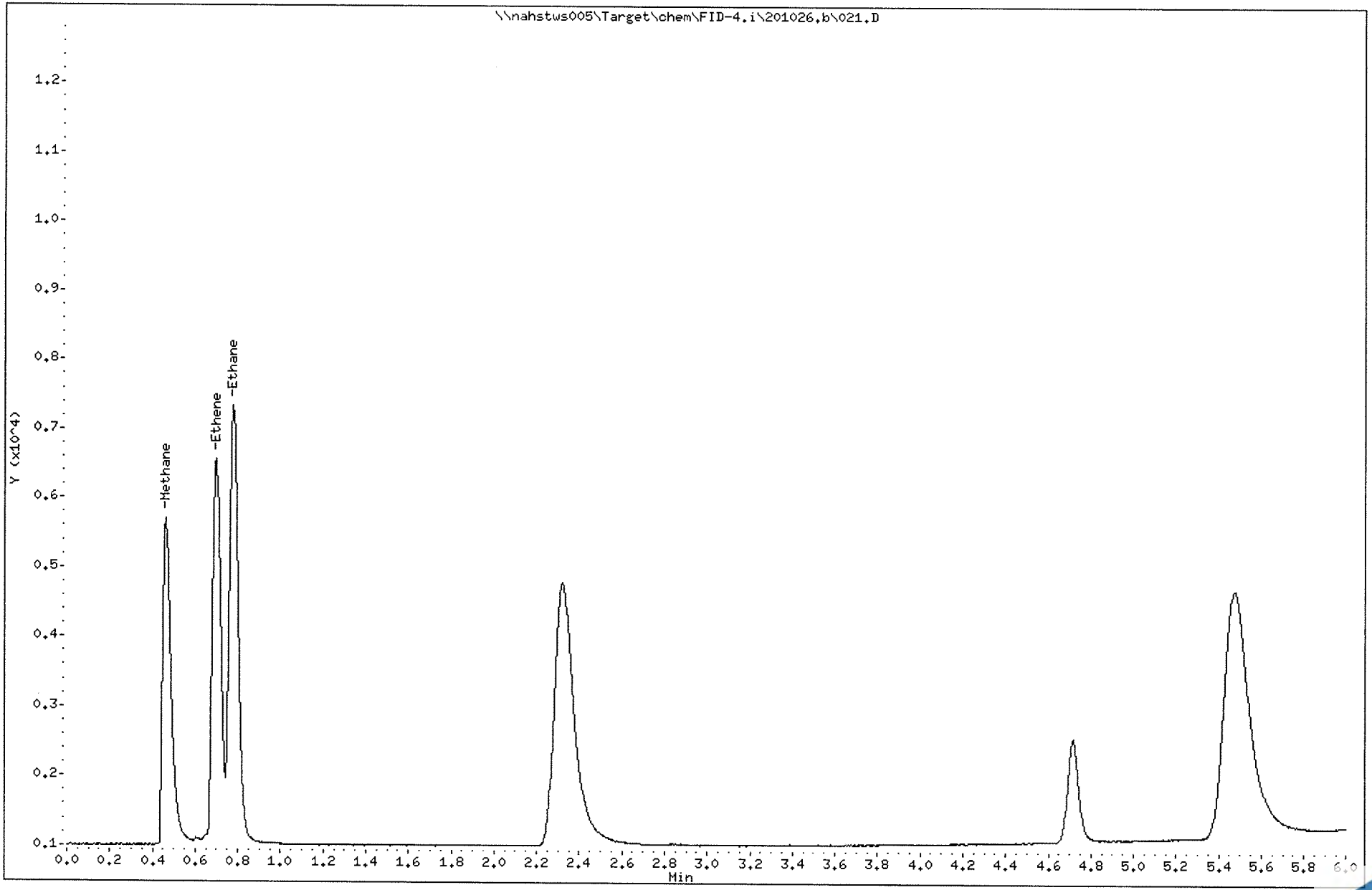
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

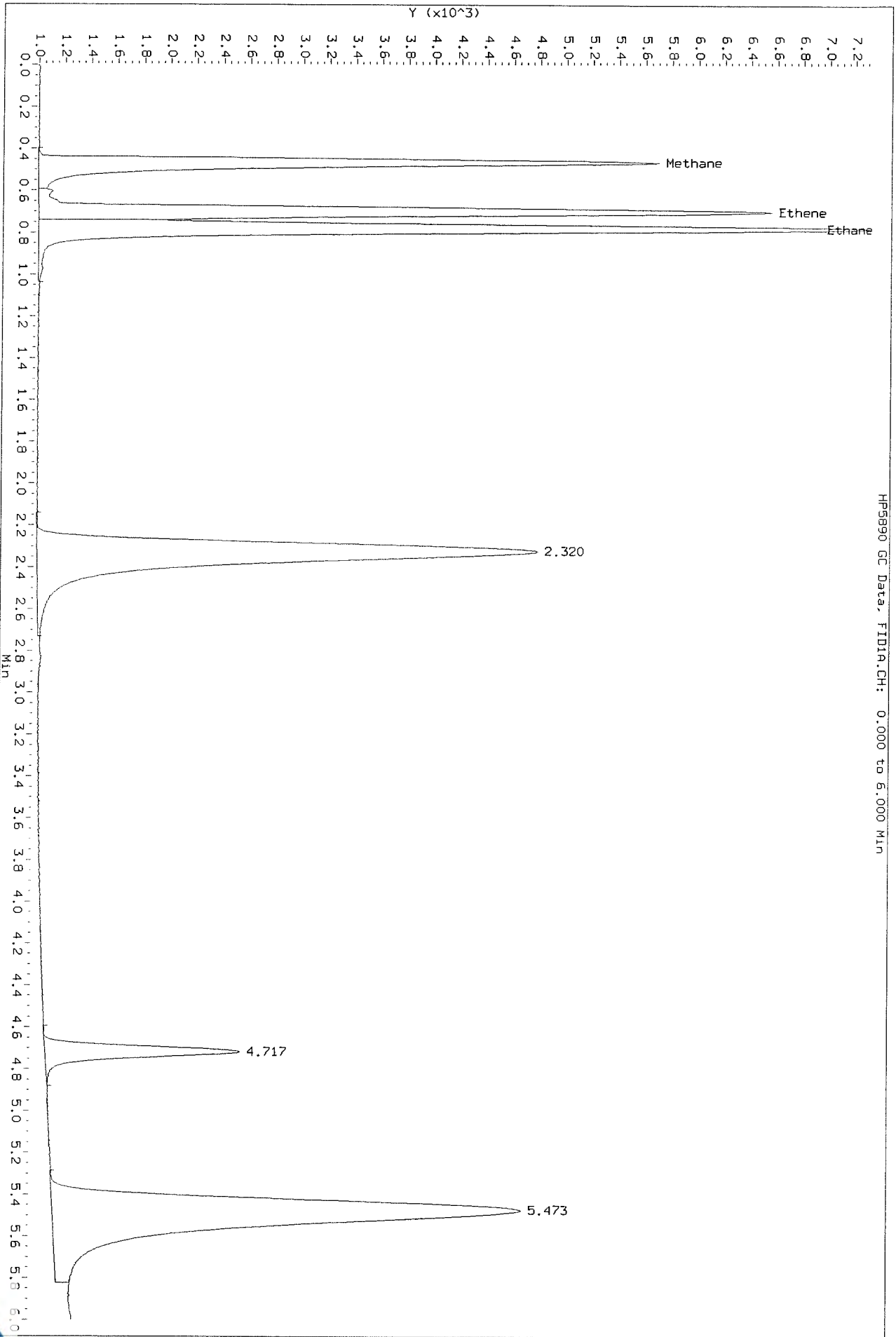
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\021.D
Date : 26-OCT-2020 13:34
Client ID: HS20101079-03MSD
Sample Info: HS20101079-03MSD;HS20101079-03MSD

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53

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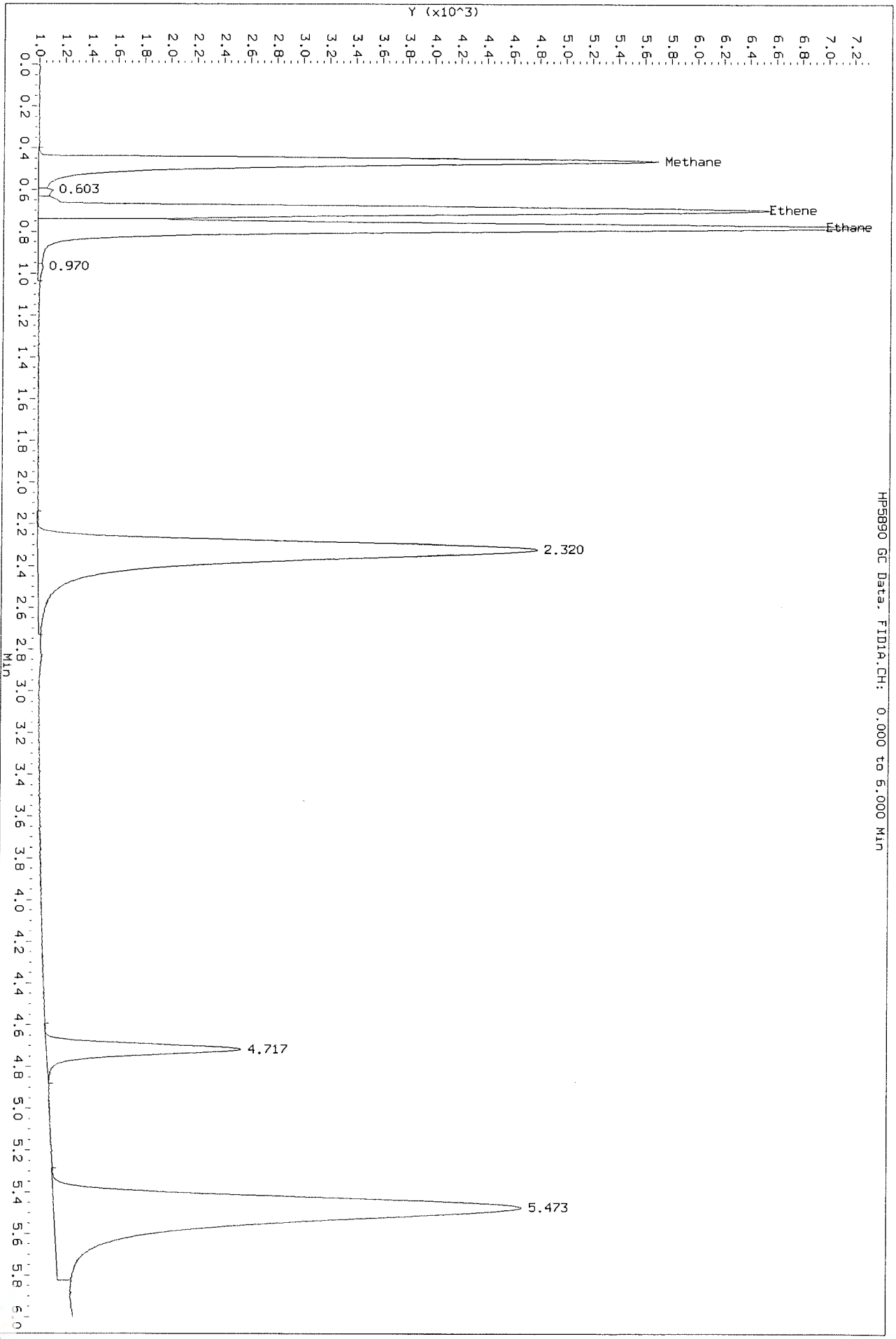
Injection Date: 26-OCT-2020 13:34
Instrument: FID-4.i
Client Sample ID: HS20101079-03MSD
HP5890 GC Data, FIDiA.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.320
4.717
5.473


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\021.D
Injection Date: 26-OCT-2020 13:34
Instrument: FID-4.i
Client Sample ID: HS20101079-03MSD
HP5890 GC Data. FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
0.603
Ethene
Ethane
0.970
2.320
4.717
5.473

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\022.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\022.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 13:42
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 22 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.463	0.463	0.000	8585	9.64700	8.805
2 Ethene	0.703	0.703	0.000	9849	16.8500	16.814
3 Ethane	0.783	0.783	0.000	13568	18.0430	18.857(M)

QC Flag Legend

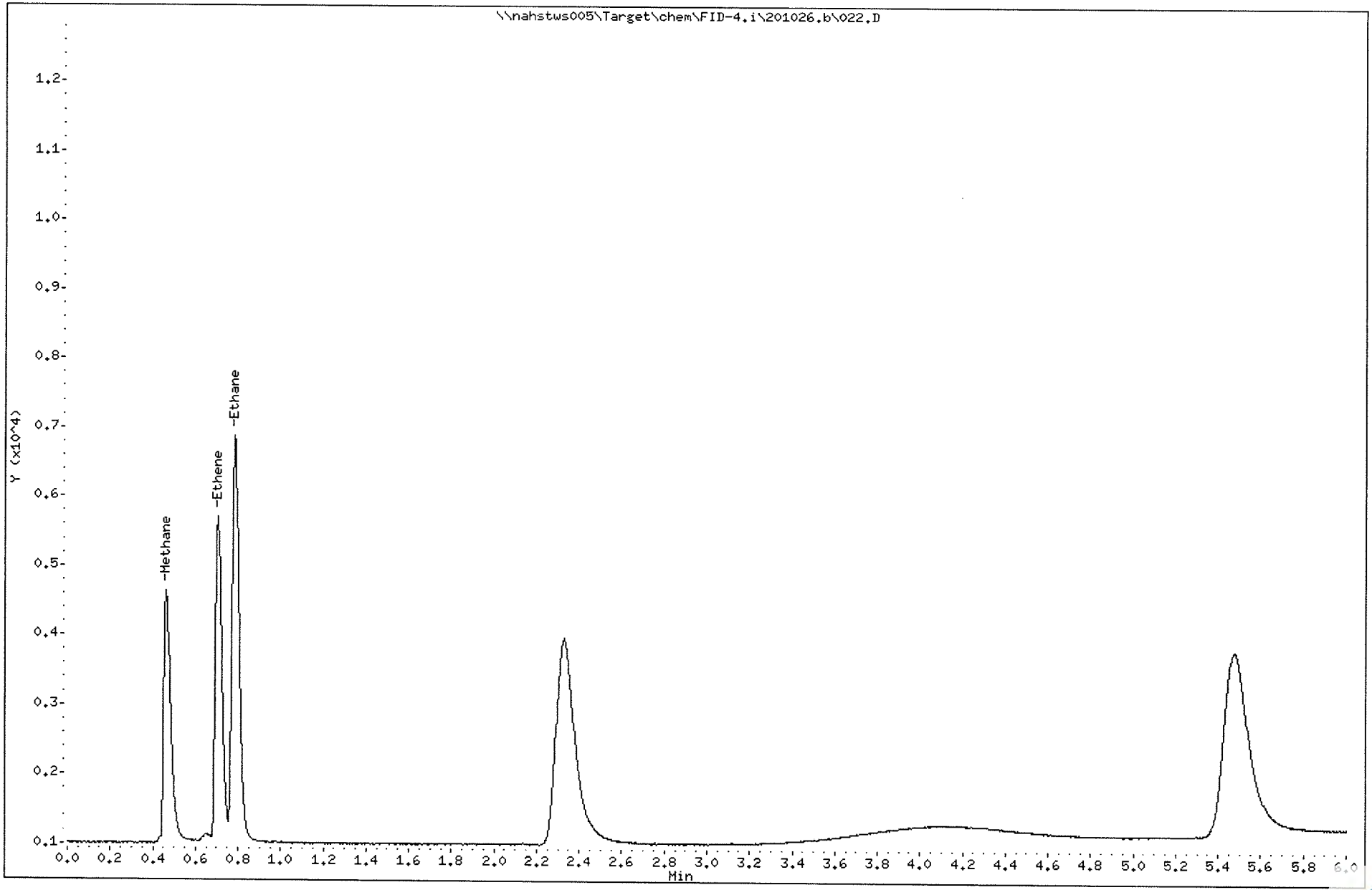
M - Compound response manually integrated.

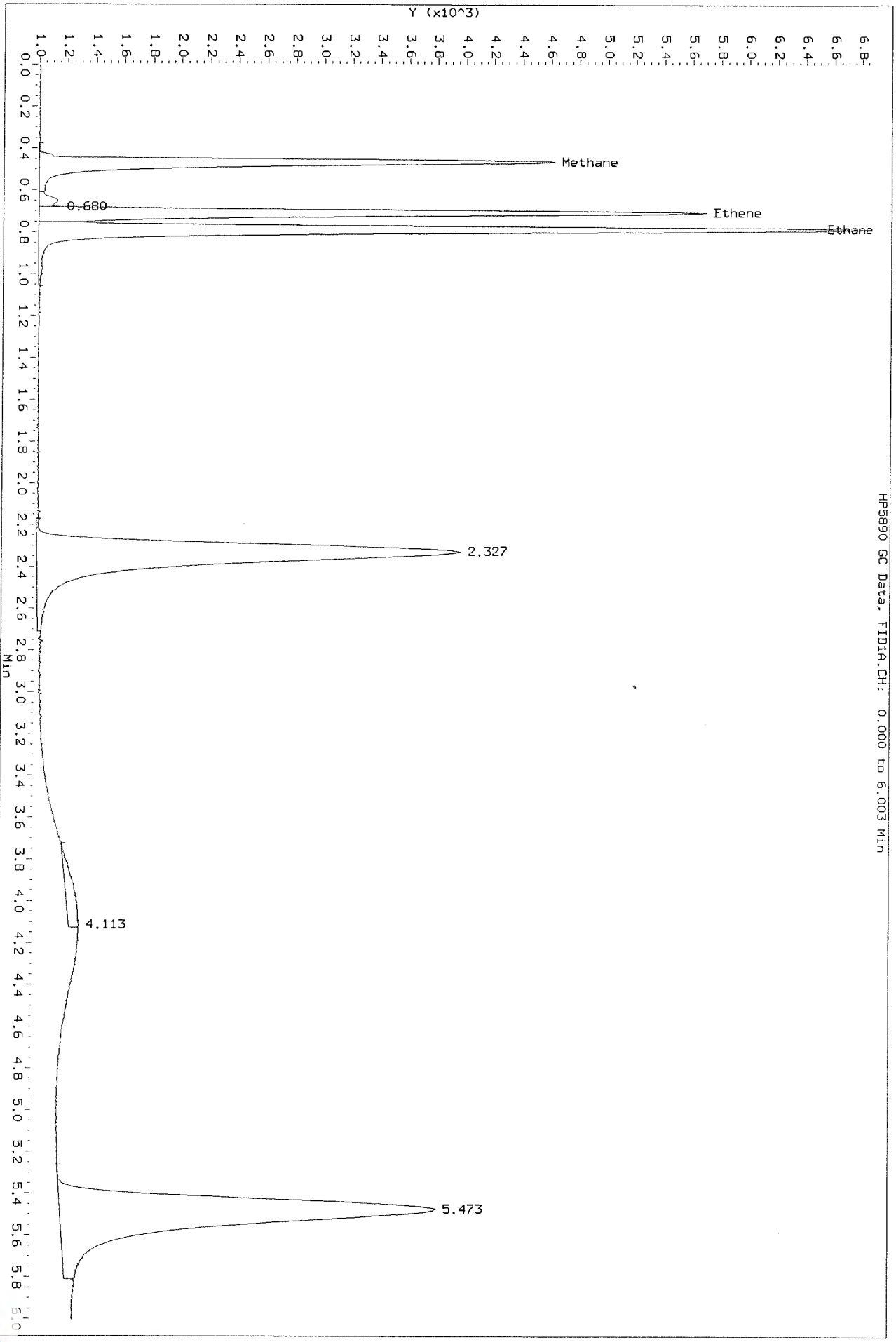
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\022.D
Date : 26-OCT-2020 13:42
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53

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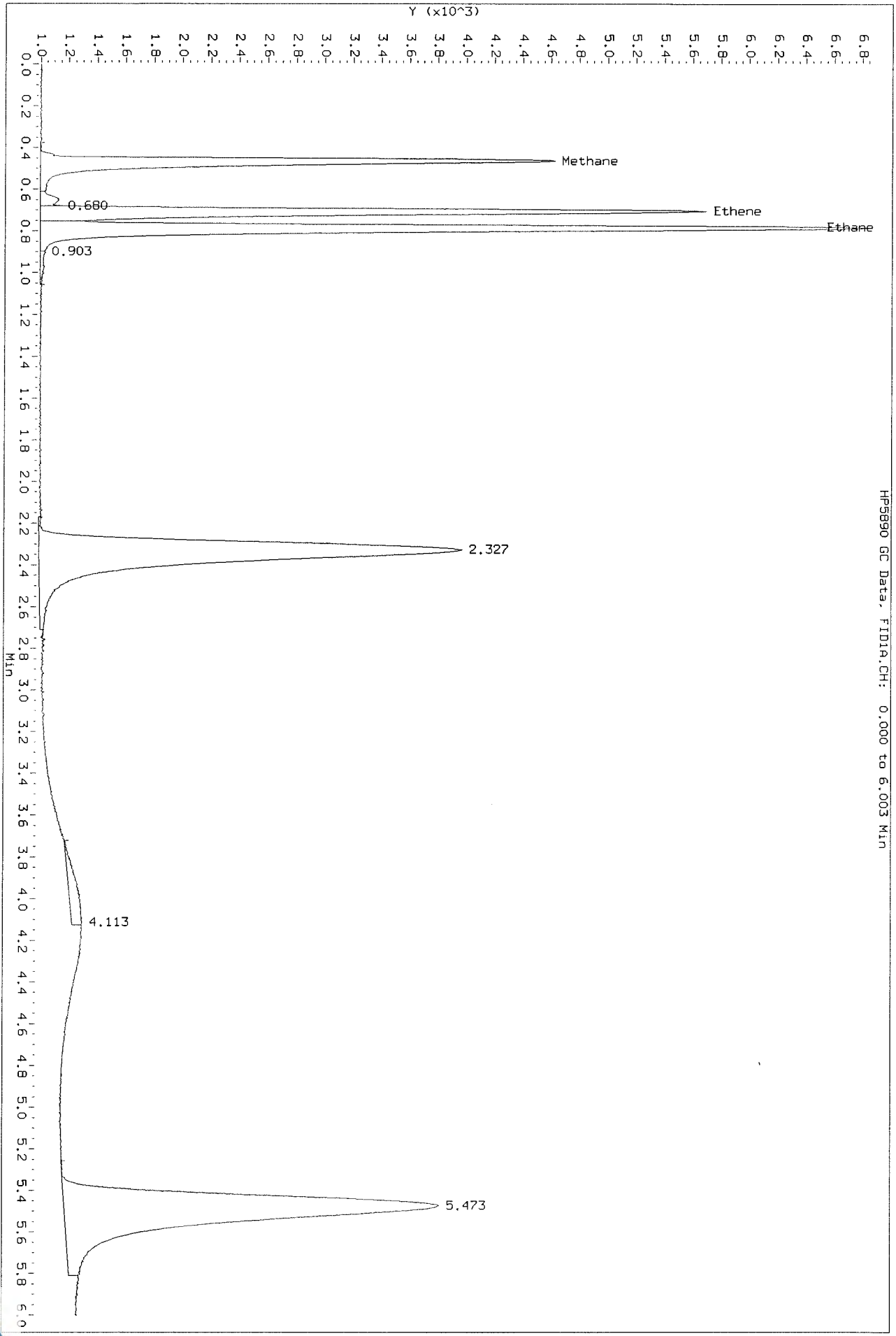
Injection Date: 26-OCT-2020 13:42
Instrument: FID-4.i
Client Sample ID: RSK-CCV
Y (x10^3)
Methane
0.680
Ethene
Ethane
2.327
4.113
5.473
Min
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min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Injection Date: 26-OCT-2020 13:42
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
0.680
Ethene
Ethane
0.903
2.327
4.113
5.473

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\023.D Page 1
Report Date: 01-Dec-2020 12:24

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\023.D
Lab Smp Id: HS20101079-01 Client Smp ID: HS20101079-01
Inj Date : 26-OCT-2020 14:15
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-01;HS20101079-01
Misc Info : ;1;0;10
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 23
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

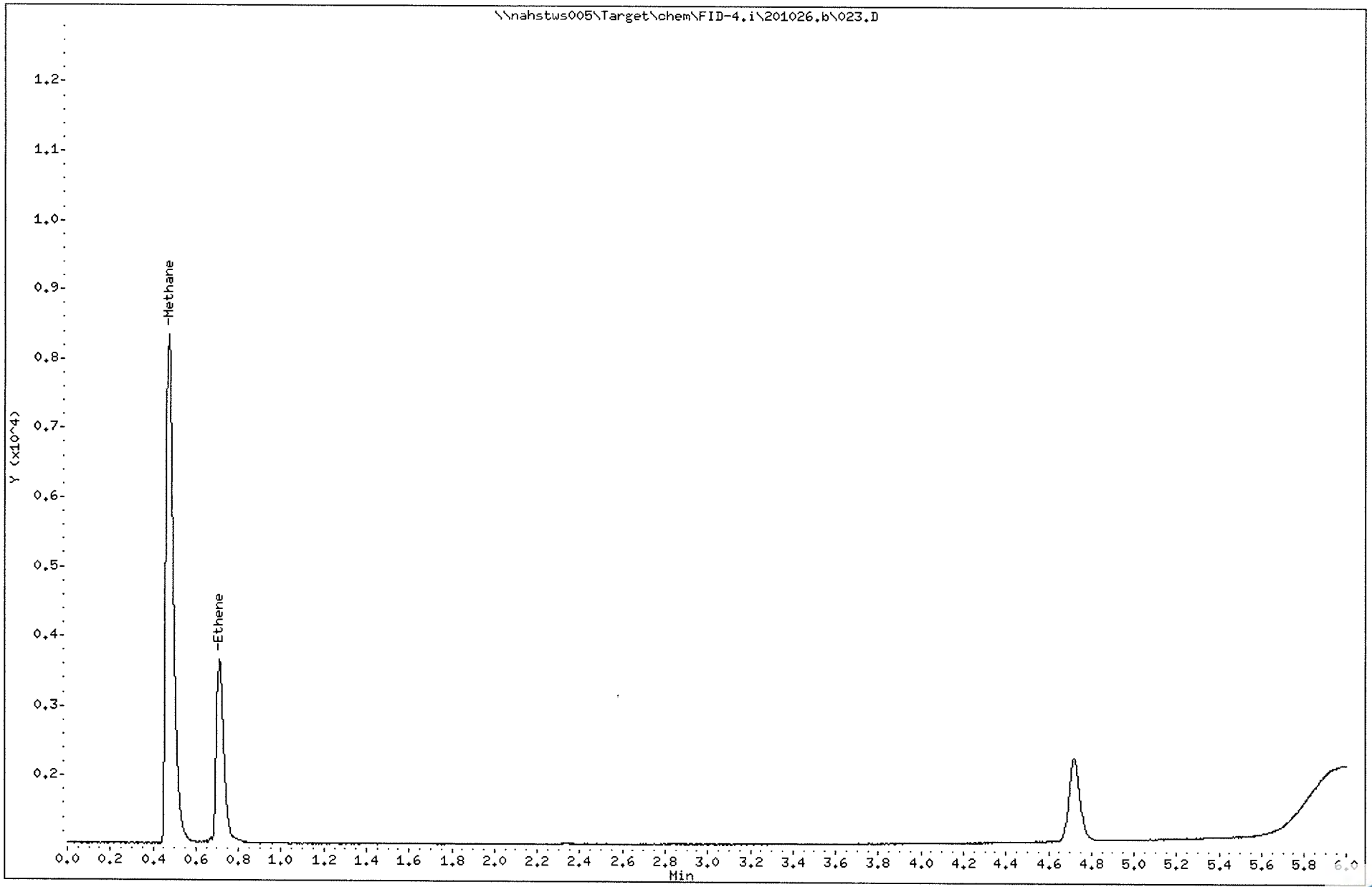
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.470	0.463	0.007	17742	18.1971	181.970
2 Ethene	0.710	0.703	0.007	6585	11.2418	112.417

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\023.D
Date : 26-OCT-2020 14:15
Client ID: HS20101079-01
Sample Info: HS20101079-01;HS20101079-01

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\030.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 15:32
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:30 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 30 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.463	0.463	0.000	8861	9.64700	9.088
2 Ethene	0.703	0.703	0.000	9948	16.8500	16.983(M)
3 Ethane	0.783	0.783	0.000	13249	18.0430	18.414(M)

QC Flag Legend

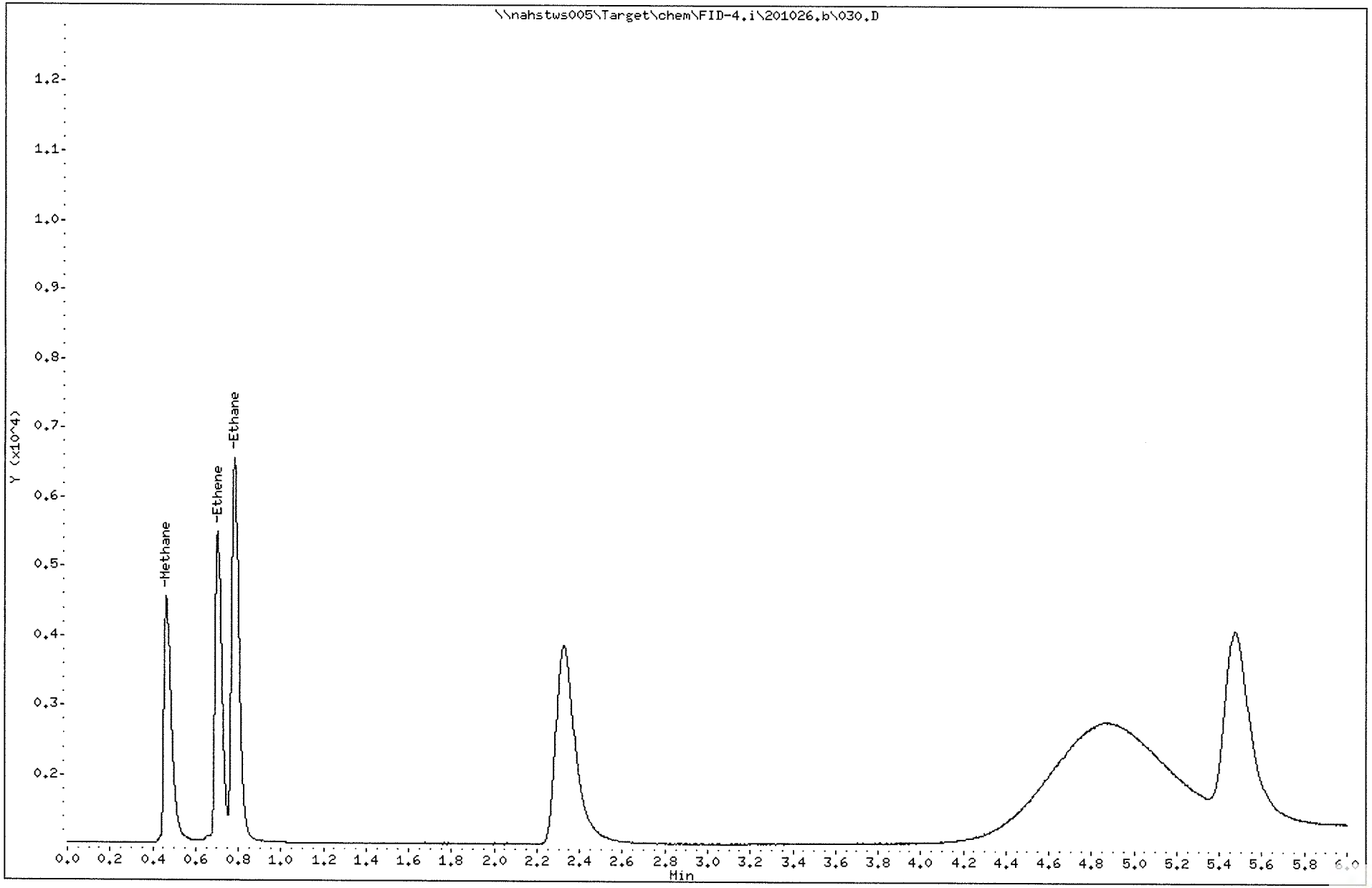
M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\030.D
Date : 26-OCT-2020 15:32
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



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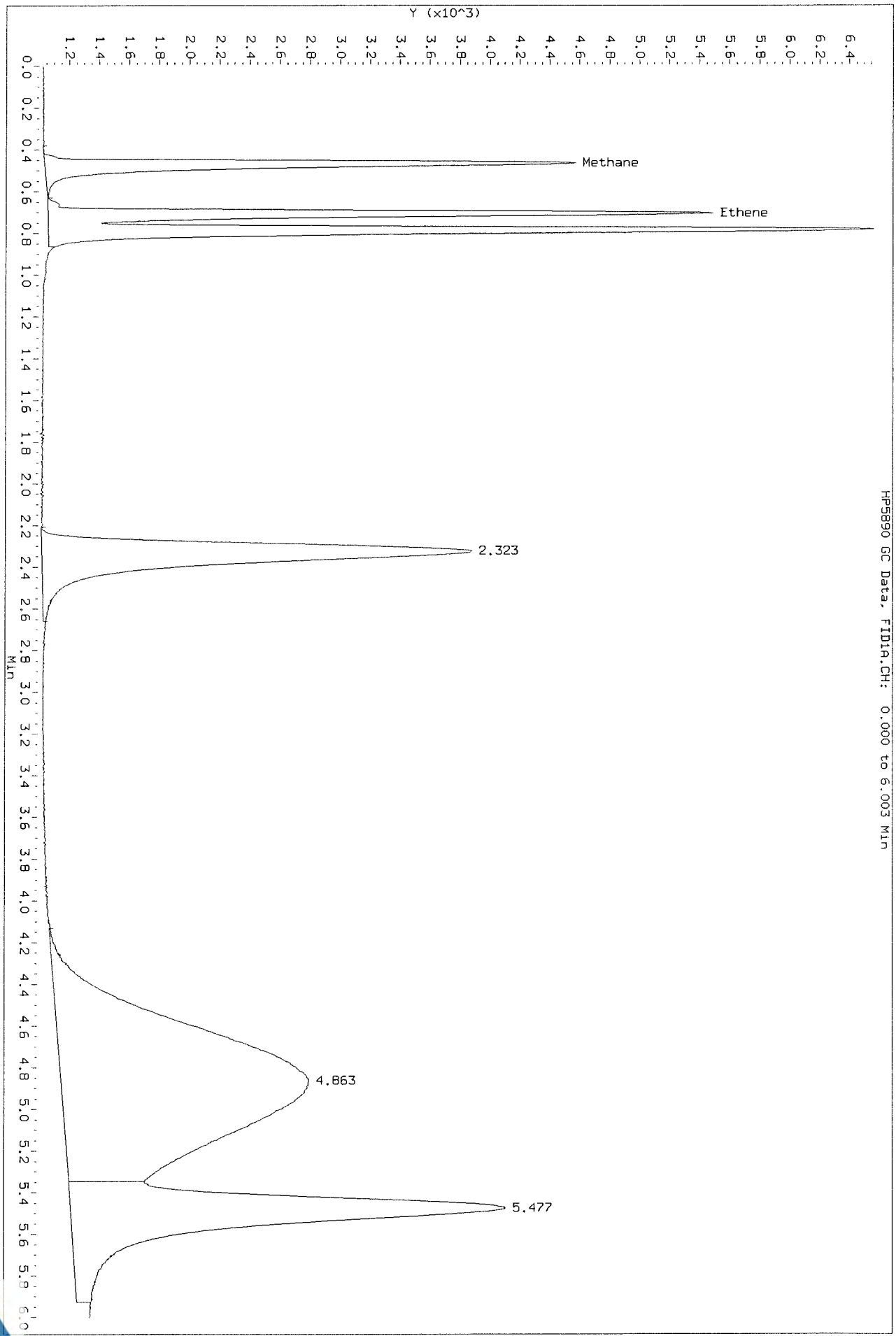
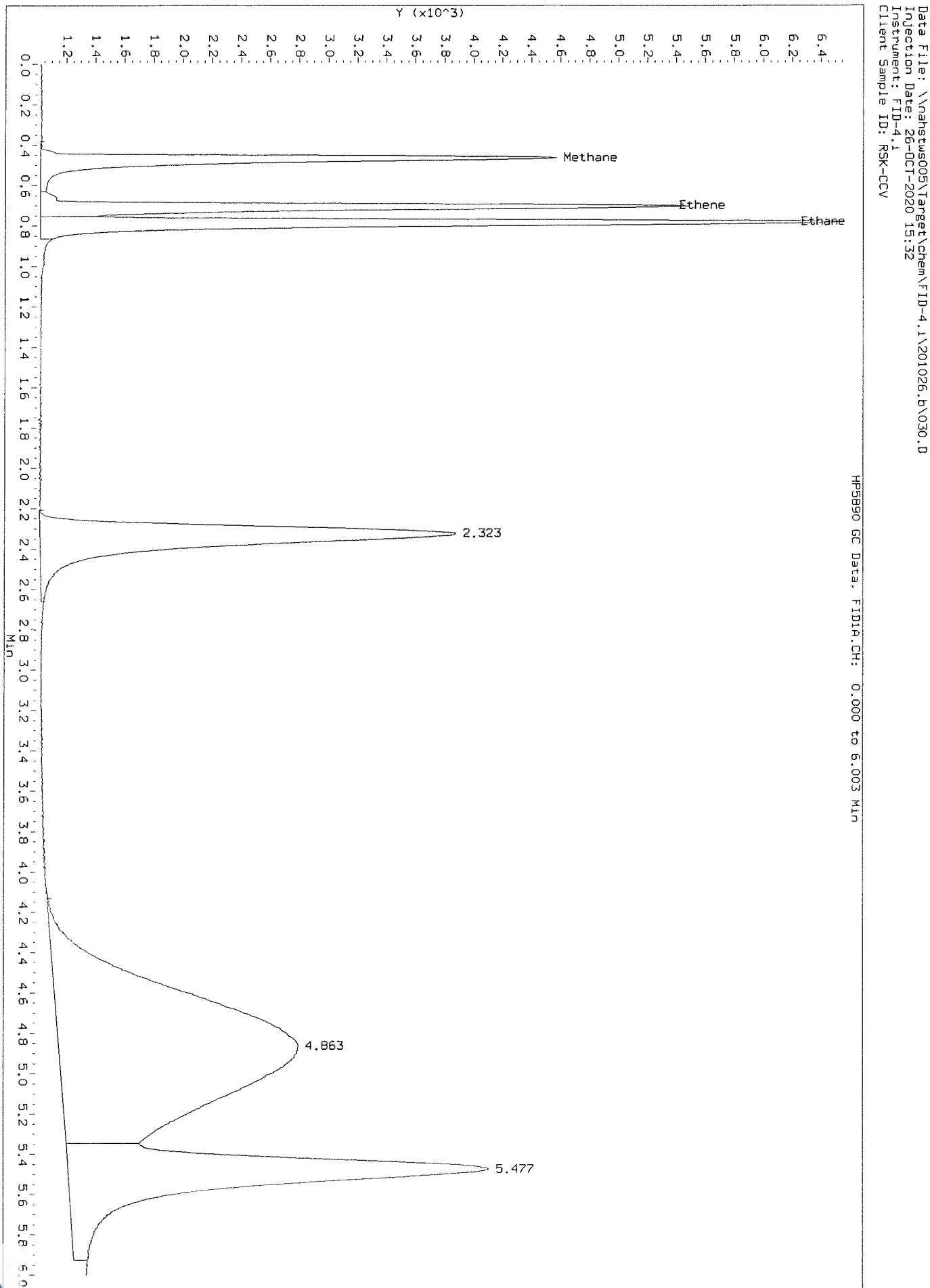
Instrument: FID-4.i
Client Sample ID: RSK-CCV

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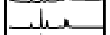
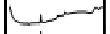
Injection Date: 26-OCT-2020 15:32
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data, FIDiA.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.323
4.863
5.477

HS20101079 Wet Chem Raw Data (9056_anions_W)

ALS WO# HS20101079

Sequence: 102120
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	me	Status
	STD1		Calibration	BD1	1.00	1	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD2		Calibration	BD2	1.00	2	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD3		Calibration	BD3	1.00	3	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD4		Calibration	BD4	1.00	4	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD5		Calibration	BD5	1.00	5	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD6		Calibration	BD6	1.00	6	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICV		Unknown	BD7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICB		Unknown	BD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-01DF5		Unknown	RC2	5.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-03DF5		Unknown	RC3	5.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
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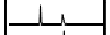
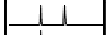
	HS20101079-03MSDDF5		Unknown	RD4	5.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-01DF100		Unknown	RD5	100.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-03DF100		Unknown	RD6	100.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	MBLK-102120		Unknown	BA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	LCS-102120		Unknown	BA8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished

Sequence: 102120
Last Update Operator: alshs.nouser

Inject Time
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10/22/2020 2:46:04 AM -05:00
10/22/2020 3:04:05 AM -05:00

Sequence: 101520
Injection #6: STD6

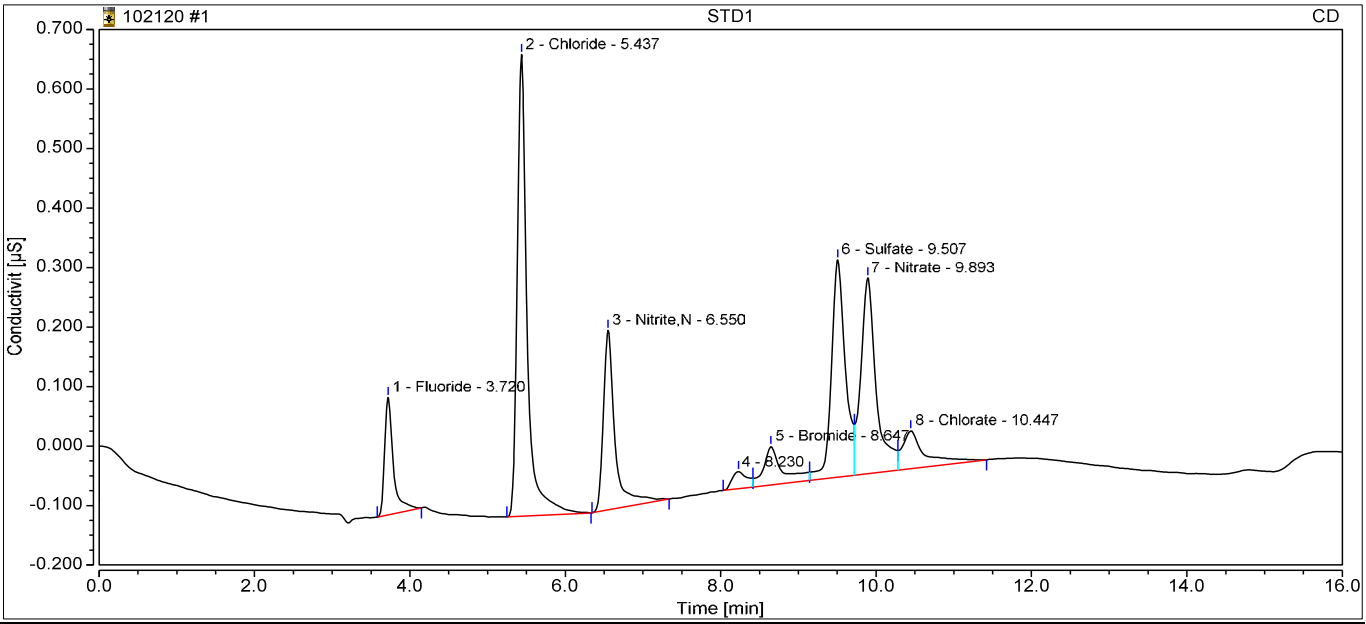
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	***Fluoride***	***Lin, WithOffset, 1/***	***Area***	***6***	***17.3553***	***0.99849***	***-0.0040***	***0.3537***	***0.0000***
2	Chloride	Lin, WithOffset, 1/	Area	6	5.4804	0.99983	0.0129	0.2289	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	26.1376	0.99573	0.0186	0.4711	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	0.9346	0.99999	0.0083	0.1008	0.0000
6	Sulfate	Lin, WithOffset, 1/	Area	6	5.2843	0.99985	-0.0019	0.1602	0.0000
7	Nitrate	Lin, WithOffset, 1/	Area	6	4.5248	0.99988	0.0144	0.6154	0.0000
8	Chlorate	Lin, WithOffset, 1/	Area	6	13.4374	0.99837	0.0139	0.1019	0.0000
10	Phosphate	Lin, WithOffset, 1/	Area	5	18.5357	0.99714	-0.0737	0.1942	0.0000
Maximum					**26.1376**	0.99999			
Minimum					0.9346	**0.99573**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 10:46**	*Sample Weight:*	**1.0000**

Run Time:



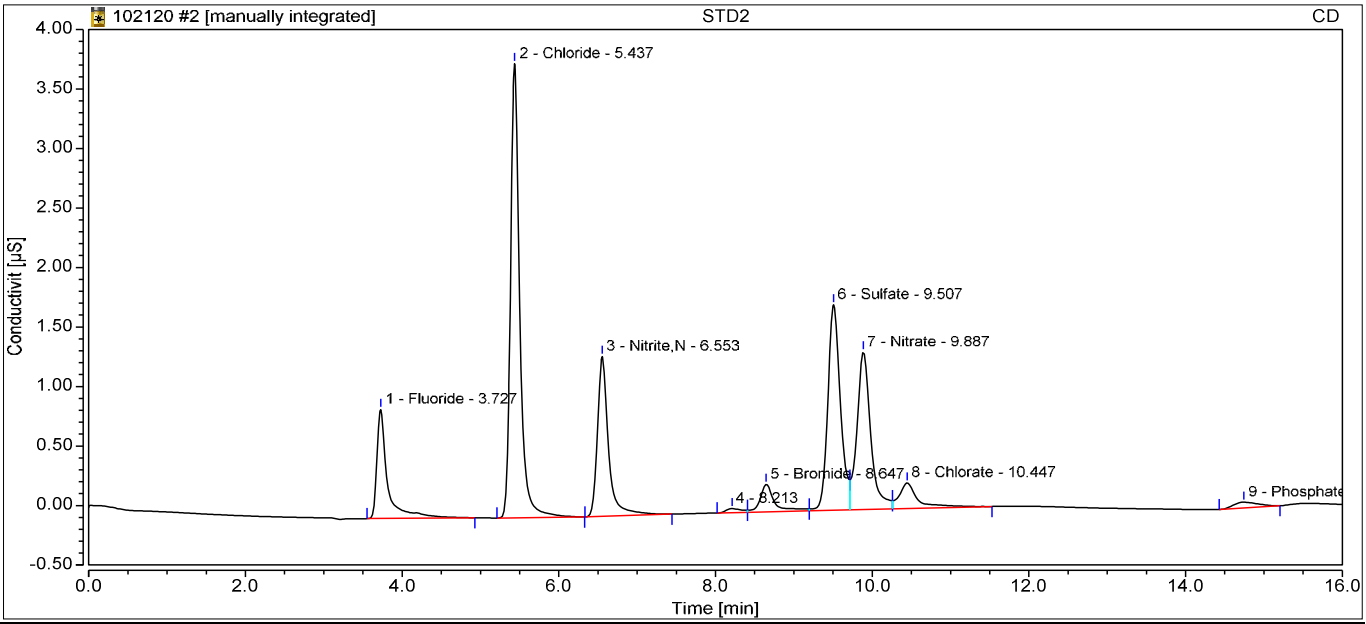
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.025	0.0833	0.0833	1.0000
2	5.44	Chloride	BMB	0.116	0.4487	0.4487	1.0000
3	6.55	Nitrite,N	BMB	0.052	0.0715	0.0715	1.0000
5	8.65	Bromide	M	0.018	0.0997	0.0997	1.0000
6	9.51	Sulfate	M	0.076	0.4861	0.4861	1.0000
7	9.89	Nitrate	M	0.075	0.0985	0.0985	1.0000
8	10.45	Chlorate	MB	0.021	0.0734	0.0734	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.384**		**1.36**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:04**	*Sample Weight:*	**1.0000**

Run Time:



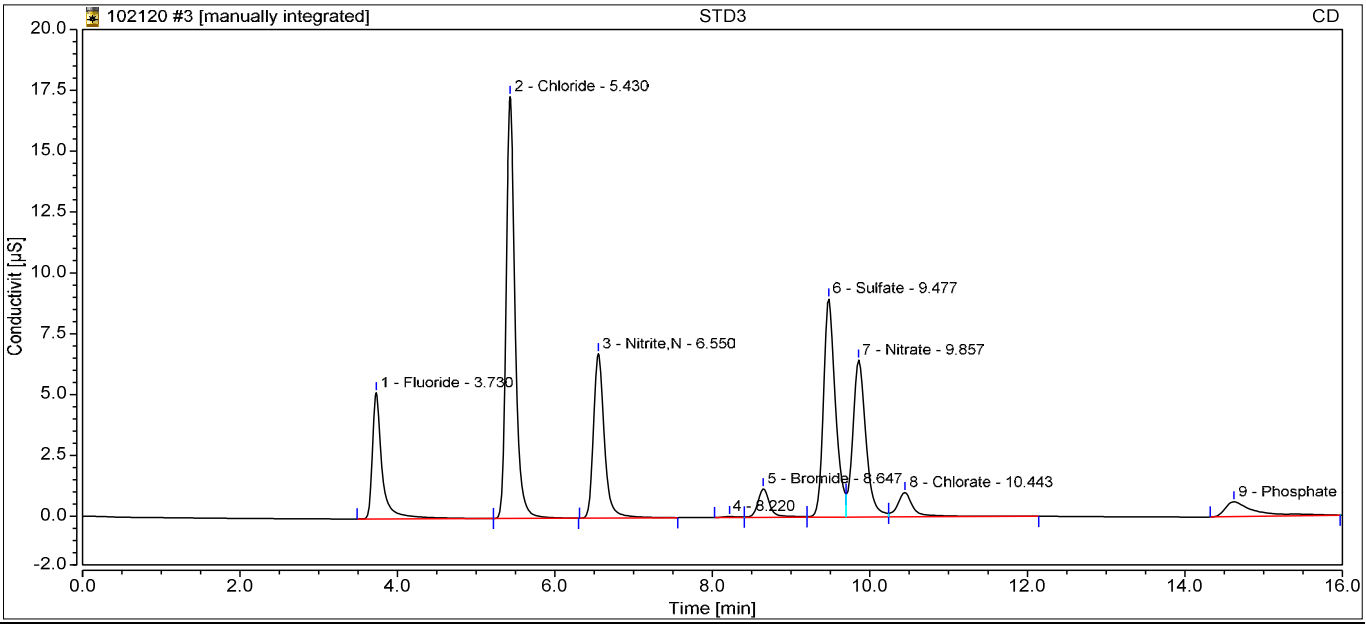
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.145	0.4204	0.4204	1.0000
2	5.44	Chloride	BMB	0.518	2.2084	2.2084	1.0000
3	6.55	Nitrite,N	BMB	0.221	0.4294	0.4294	1.0000
5	8.65	Bromide	M	0.049	0.4041	0.4041	1.0000
6	9.51	Sulfate	M	0.321	2.0151	2.0151	1.0000
7	9.89	Nitrate	M	0.270	0.4147	0.4147	1.0000
8	10.45	Chlorate	MB	0.060	0.4536	0.4536	1.0000
9	14.74	Phosphate	BMB	0.018	0.4703	0.4703	1.0000
Total:			**0.000**	**1.601**		**6.82**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



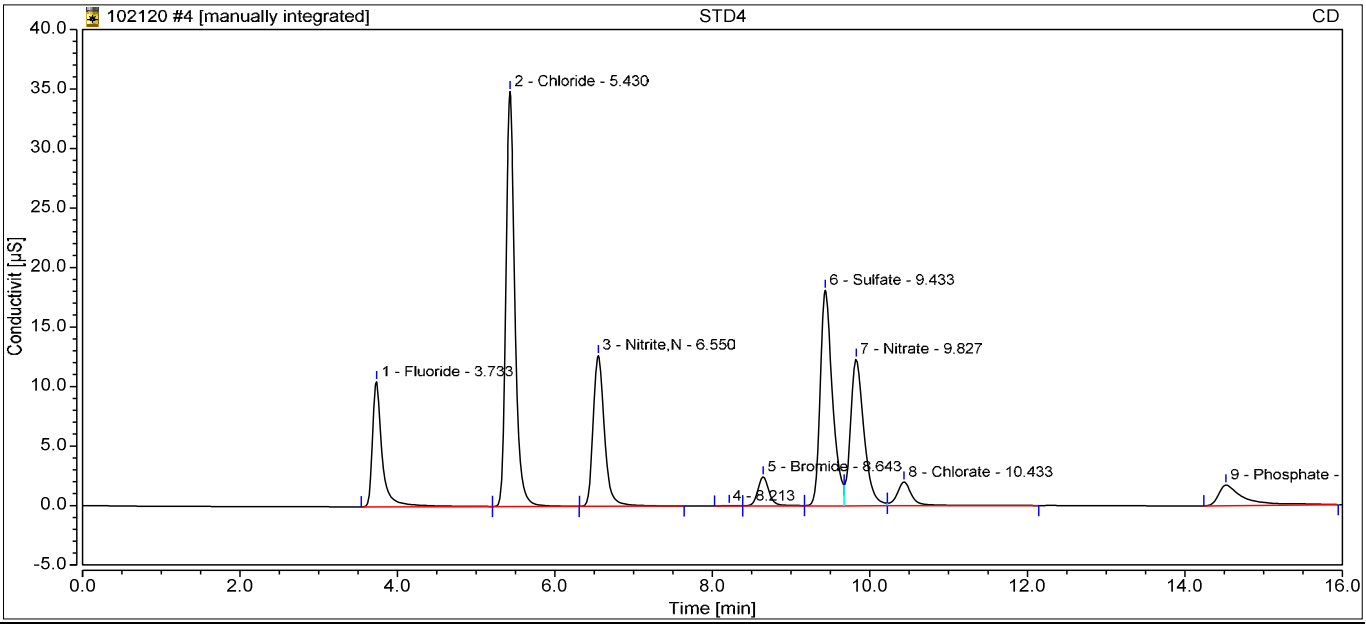
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.745	2.1166	2.1166	1.0000
2	5.43	Chloride	BMB	2.291	9.9533	9.9533	1.0000
3	6.55	Nitrite,N	BMB	1.077	2.2460	2.2460	1.0000
5	8.65	Bromide	M	0.209	1.9882	1.9882	1.0000
6	9.48	Sulfate	M	1.595	9.9688	9.9688	1.0000
7	9.86	Nitrate	M	1.238	1.9883	1.9883	1.0000
8	10.44	Chlorate	MB	0.239	2.2038	2.2038	1.0000
9	14.62	Phosphate	BM *	0.269	1.7634	1.7634	1.0000
Total:			**0.000**	**7.661**		**32.23**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BD4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:40**	*Sample Weight:*	**1.0000**

Run Time:



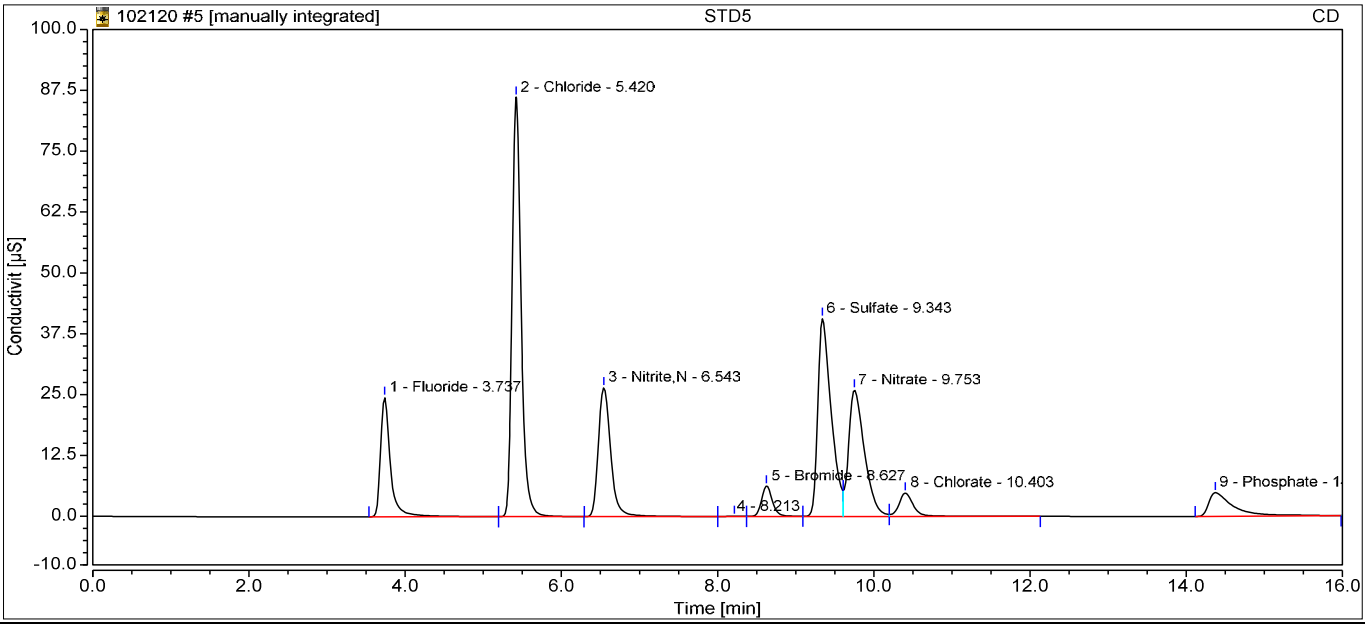
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.504	4.2630	4.2630	1.0000
2	5.43	Chloride	BMB	4.613	20.0986	20.0986	1.0000
3	6.55	Nitrite,N	BMB*	2.104	4.4276	4.4276	1.0000
5	8.64	Bromide	M	0.411	3.9946	3.9946	1.0000
6	9.43	Sulfate	M	3.273	20.4465	20.4465	1.0000
7	9.83	Nitrate	M	2.444	3.9482	3.9482	1.0000
8	10.43	Chlorate	MB	0.443	4.2079	4.2079	1.0000
9	14.52	Phosphate	BM *	0.648	3.7157	3.7157	1.0000
Total:			**0.000**	**15.439**		**65.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BD5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:58**	*Sample Weight:*	**1.0000**

Run Time:



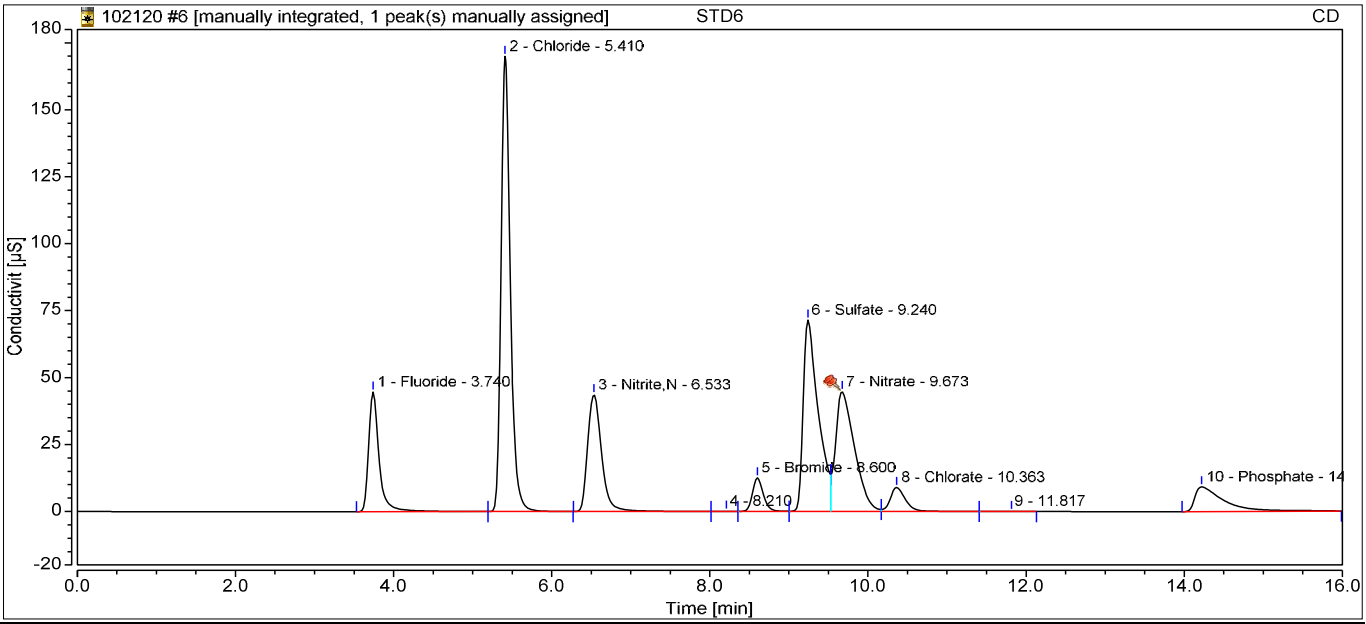
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.611	10.2228	10.2228	1.0000
2	5.42	Chloride	BMB	11.462	50.0272	50.0272	1.0000
3	6.54	Nitrite,N	BMB	4.877	10.3135	10.3135	1.0000
5	8.63	Bromide	M	1.014	9.9796	9.9796	1.0000
6	9.34	Sulfate	M	8.089	50.5200	50.5200	1.0000
7	9.75	Nitrate	M	6.097	9.8832	9.8832	1.0000
8	10.40	Chlorate	MB	1.032	9.9918	9.9918	1.0000
9	14.37	Phosphate	BM *	1.834	9.8223	9.8223	1.0000
Total:			**0.000**	**38.017**		**160.76**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BD6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



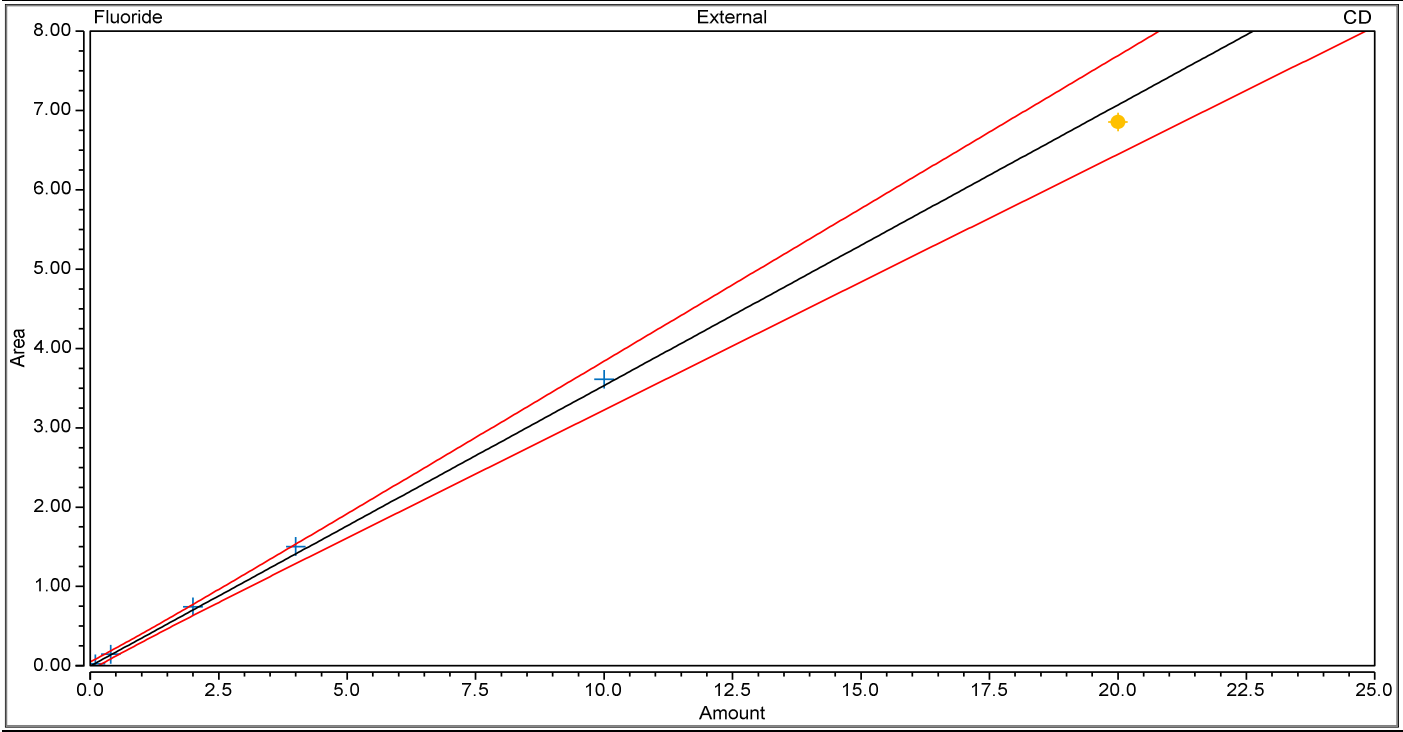
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	6.855	19.3940	19.3940	1.0000
2	5.41	Chloride	BMB	22.844	99.7639	99.7639	1.0000
3	6.53	Nitrite,N	BMB	8.975	19.0121	19.0121	1.0000
5	8.60	Bromide	M	2.028	20.0338	20.0338	1.0000
6	9.24	Sulfate	M	15.864	99.0635	99.0635	1.0000
7	9.67	Nitrate	M ^	12.426	20.1671	20.1671	1.0000
8	10.36	Chlorate	M	2.009	19.5694	19.5694	1.0000
10	14.22	Phosphate	BM *	3.933	20.6283	20.6283	1.0000
Total:			**0.000**	**74.933**		**317.63**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0040
Evaluation Type	Area	*Slope (C1)*	0.3537
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9985

Calibration Plot **Fluoride**



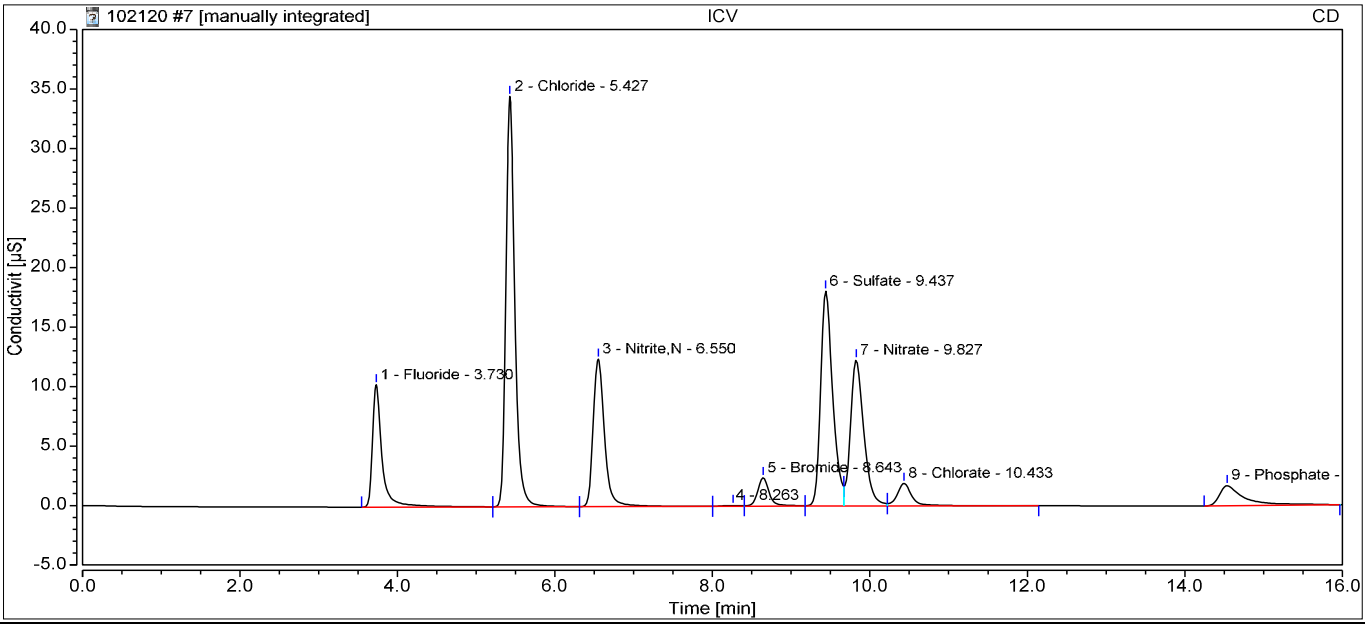
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0254	0.0254	0.025	0.197
2	STD2	2	0.4000	0.1446	0.1446	0.145	0.916
3	STD3	3	2.0000	0.7445	0.7445	0.745	5.182
4	STD4	4	4.0000	1.5036	1.5036	1.504	10.507
5	STD5	5	10.0000	3.6113	3.6113	3.611	24.538
6	STD6	6	20.0000	6.8547	6.8547	6.855	44.677

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



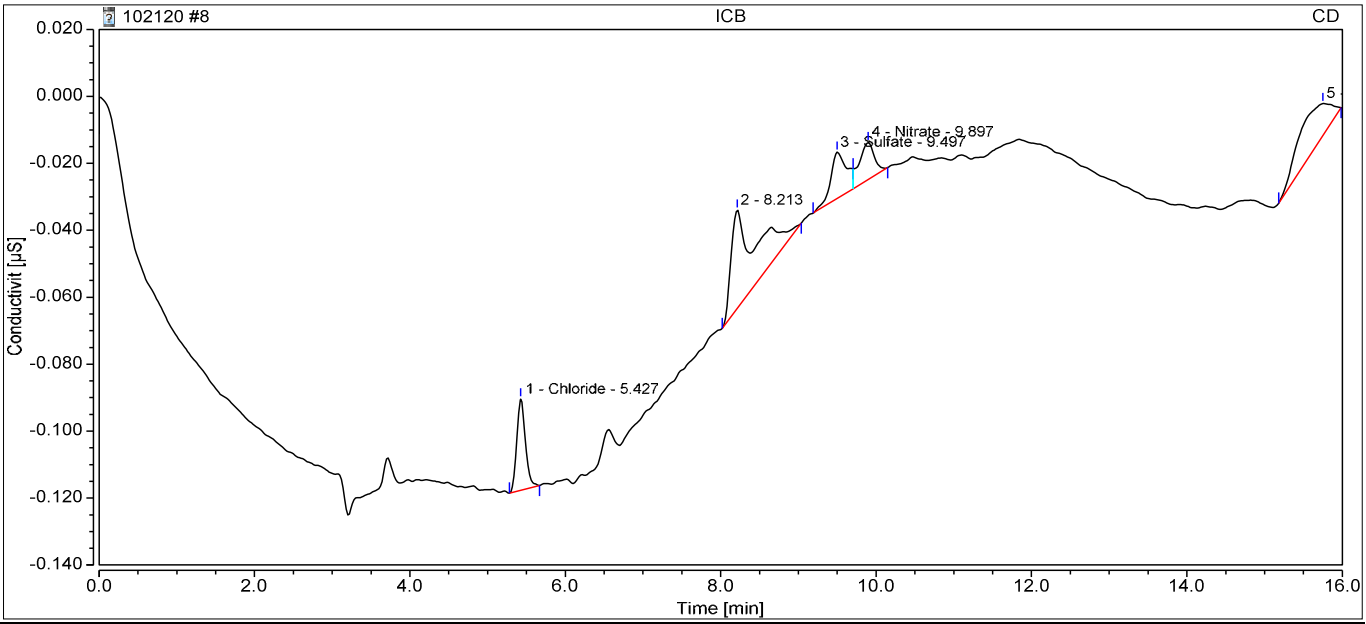
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.447	4.1020	4.1020	1.0000
2	5.43	Chloride	BMB	4.553	19.8399	19.8399	1.0000
3	6.55	Nitrite,N	BMB	2.061	4.3359	4.3359	1.0000
5	8.64	Bromide	M	0.413	4.0106	4.0106	1.0000
6	9.44	Sulfate	M	3.227	20.1622	20.1622	1.0000
7	9.83	Nitrate	M	2.405	3.8850	3.8850	1.0000
8	10.43	Chlorate	MB	0.422	4.0019	4.0019	1.0000
9	14.54	Phosphate	BM *	0.631	3.6292	3.6292	1.0000
Total:			**0.000**	**15.159**		**63.97**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**BD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:



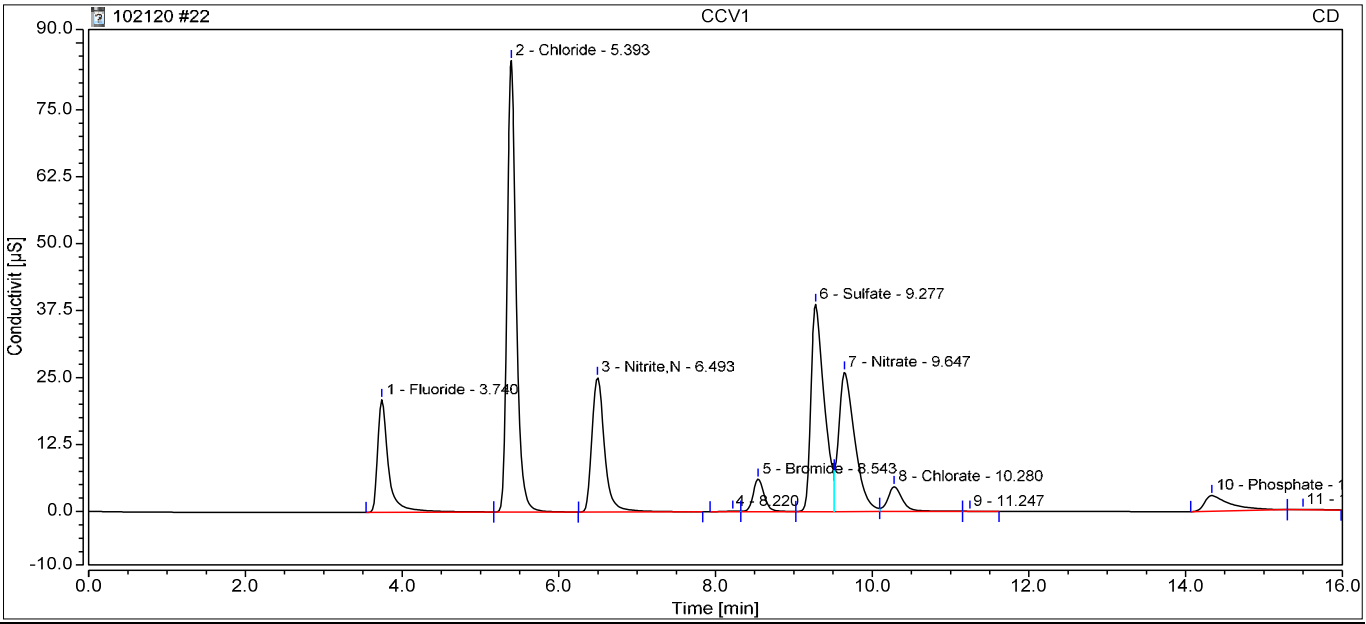
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.43	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.50	Sulfate	BM	0.003	0.0318	0.0318	1.0000
4	9.90	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.03**	

22 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 12:20**	*Sample Weight:*	**1.0000**

Run Time:



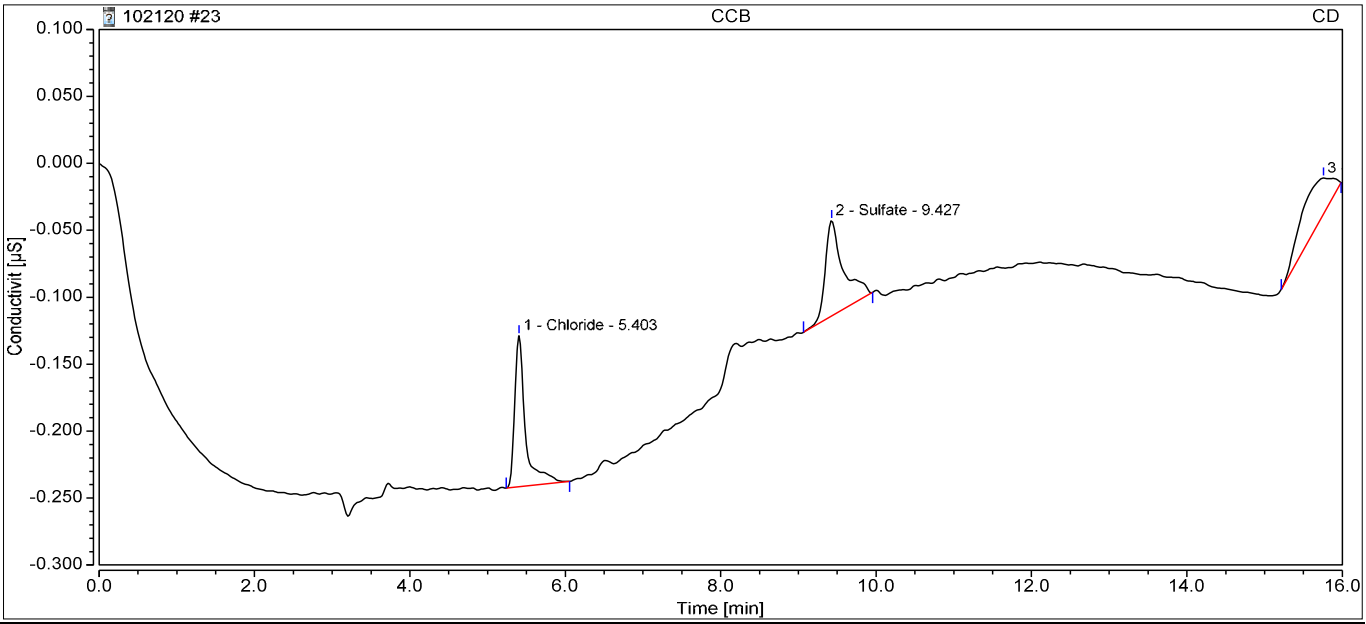
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.381	9.5725	9.5725	1.0000
2	5.39	Chloride	BMB	11.279	49.2296	49.2296	1.0000
3	6.49	Nitrite,N	BMB	4.696	9.9304	9.9304	1.0000
5	8.54	Bromide	M	1.006	9.8954	9.8954	1.0000
6	9.28	Sulfate	M	7.641	47.7200	47.7200	1.0000
7	9.65	Nitrate	M	6.253	10.1363	10.1363	1.0000
8	10.28	Chlorate	M	1.019	9.8562	9.8562	1.0000
10	14.33	Phosphate	BMB	1.104	6.0640	6.0640	1.0000
Total:			**0.000**	**36.379**		**152.40**	

23 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 12:38**	*Sample Weight:*	**1.0000**

Run Time:



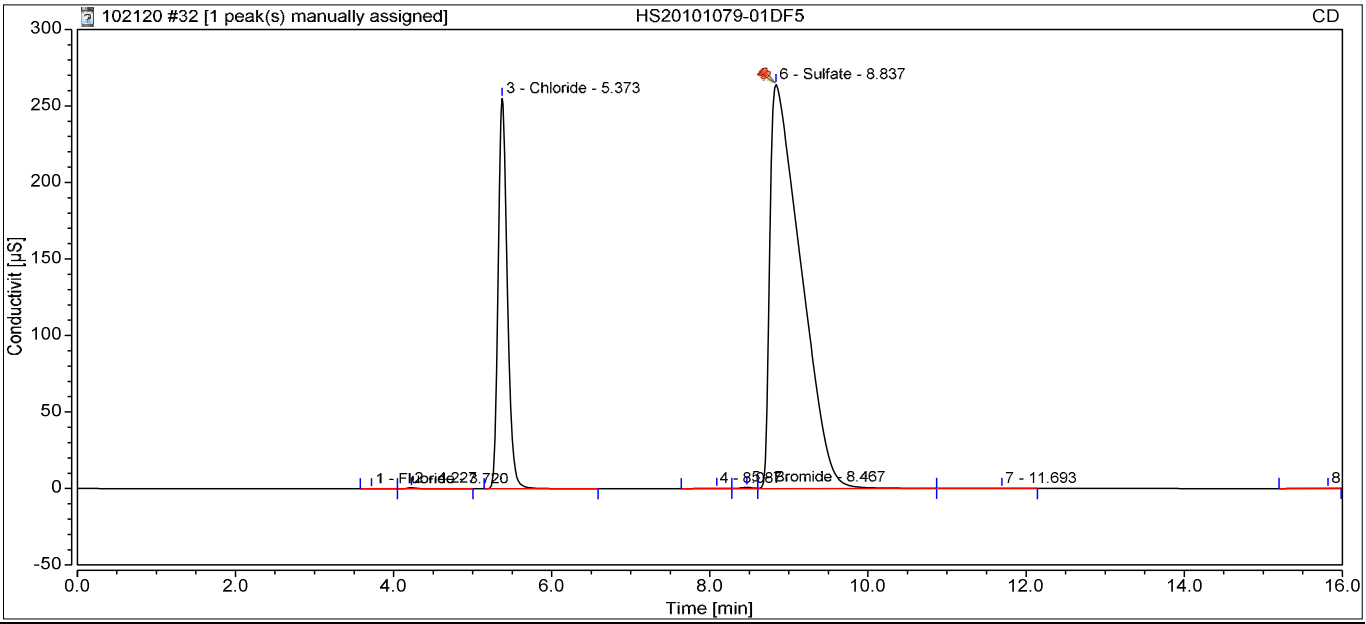
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.018	0.0230	0.0230	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	9.43	Sulfate	BMB	0.019	0.1320	0.1320	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.037**		**0.15**	

32 HS20101079-01DF5

Sample Name:	**HS20101079-01DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RC2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**10/21/2020 15:21**	*Sample Weight:*	**1.0000**

Run Time:



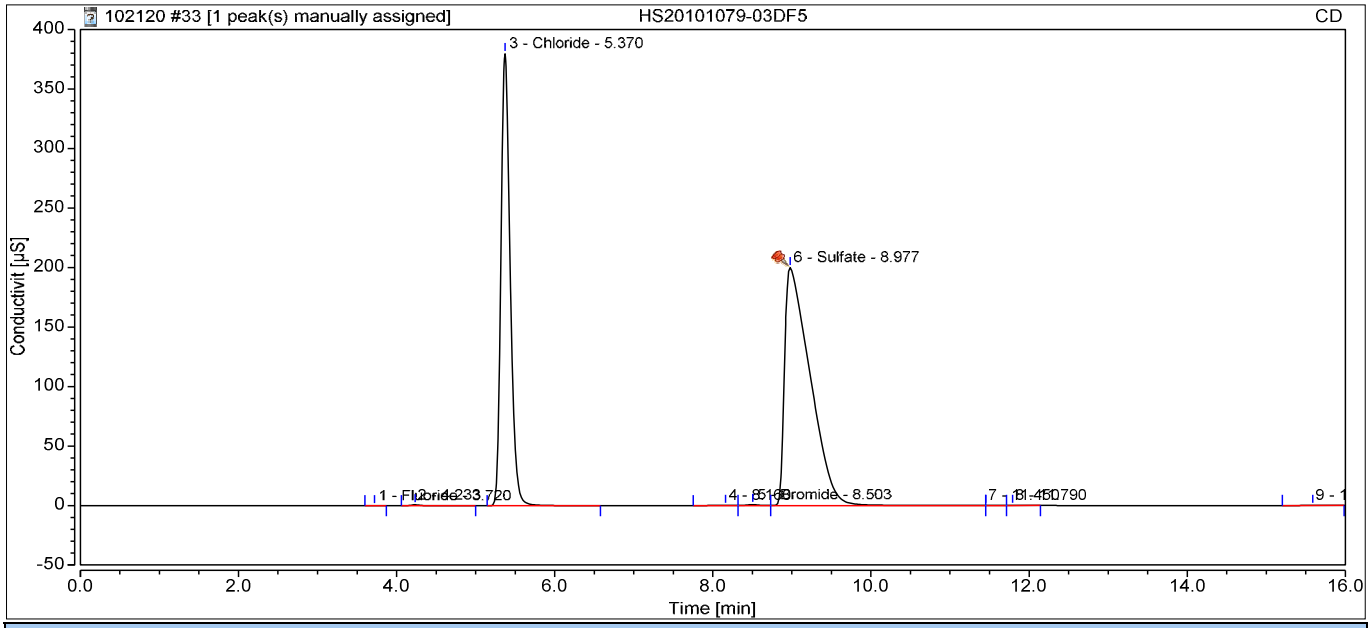
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.008	0.0342	0.1709	5.0000
3	5.37	Chloride	BMB	33.923	148.1723	740.8613	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
5	8.47	Bromide	M	0.150	1.4044	7.0221	5.0000
6	8.84	Sulfate	M ^	119.323	745.0463	3725.2316	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**153.404**		**4473.29**	

33 HS20101079-03DF5

Sample Name:	**HS20101079-03DF5**	*Injection Volume:*	**5.00**
Vial Number:	**RC3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**10/21/2020 15:39**	*Sample Weight:*	**1.0000**

Run Time:



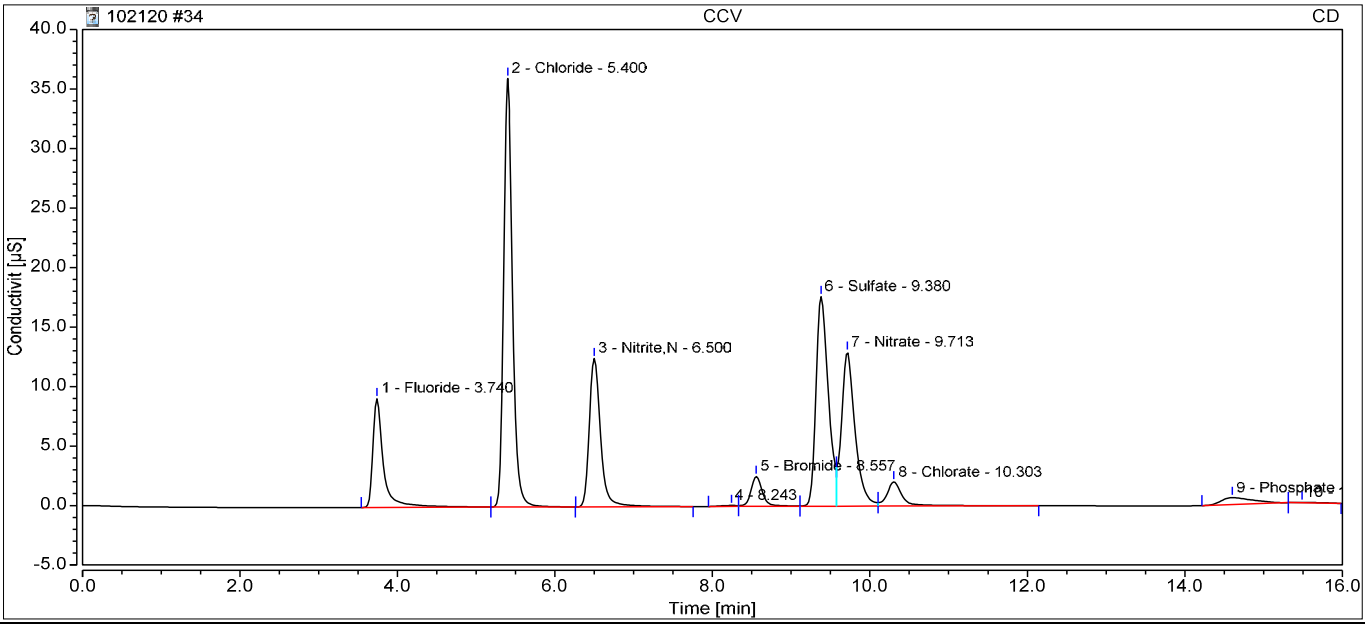
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.004	0.0240	0.1198	5.0000
3	5.37	Chloride	BMB	50.827	222.0359	1110.1793	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
5	8.50	Bromide	M	0.157	1.4703	7.3516	5.0000
6	8.98	Sulfate	M ^	74.757	466.7853	2333.9267	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**125.746**		**3451.58**	

34 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 15:57**	*Sample Weight:*	**1.0000**

Run Time:



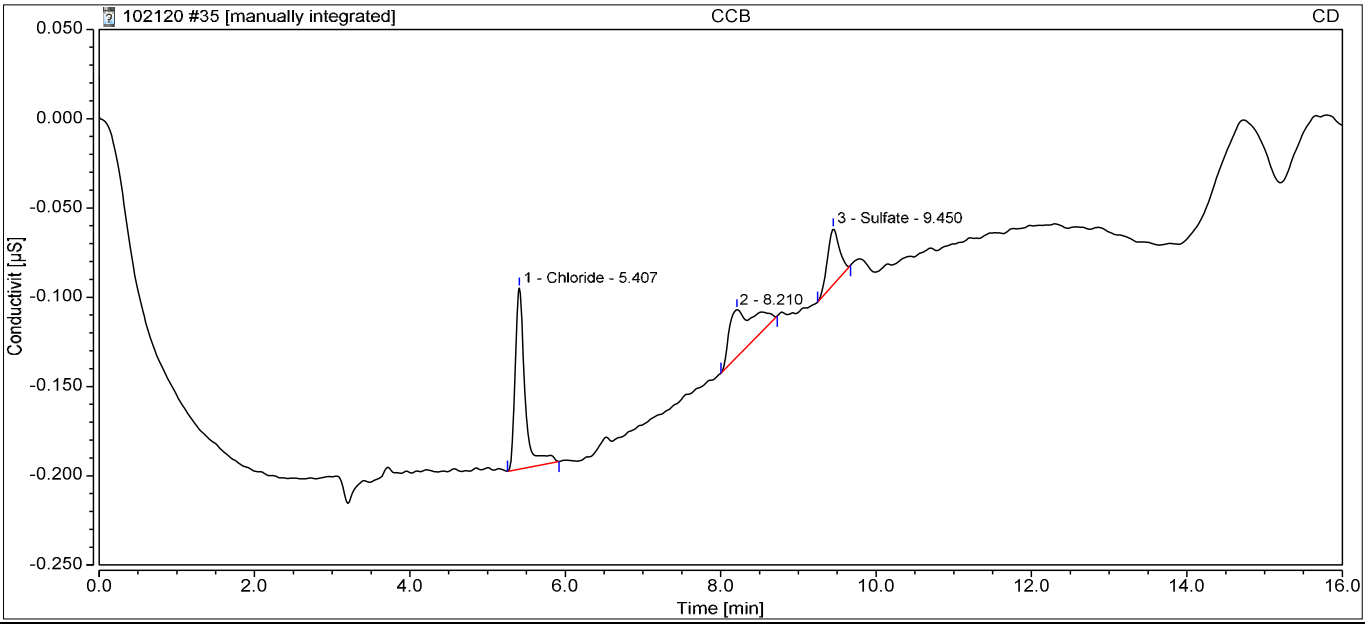
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.425	4.0397	4.0397	1.0000
2	5.40	Chloride	BMB	4.696	20.4611	20.4611	1.0000
3	6.50	Nitrite,N	BMB	2.090	4.3976	4.3976	1.0000
5	8.56	Bromide	M	0.425	4.1352	4.1352	1.0000
6	9.38	Sulfate	M	3.167	19.7862	19.7862	1.0000
7	9.71	Nitrate	M	2.588	4.1815	4.1815	1.0000
8	10.30	Chlorate	MB	0.472	4.4979	4.4979	1.0000
9	14.60	Phosphate	BMB	0.269	1.7658	1.7658	1.0000
Total:			**0.000**	**15.132**		**63.27**	

35 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 16:15**	*Sample Weight:*	**1.0000**

Run Time:



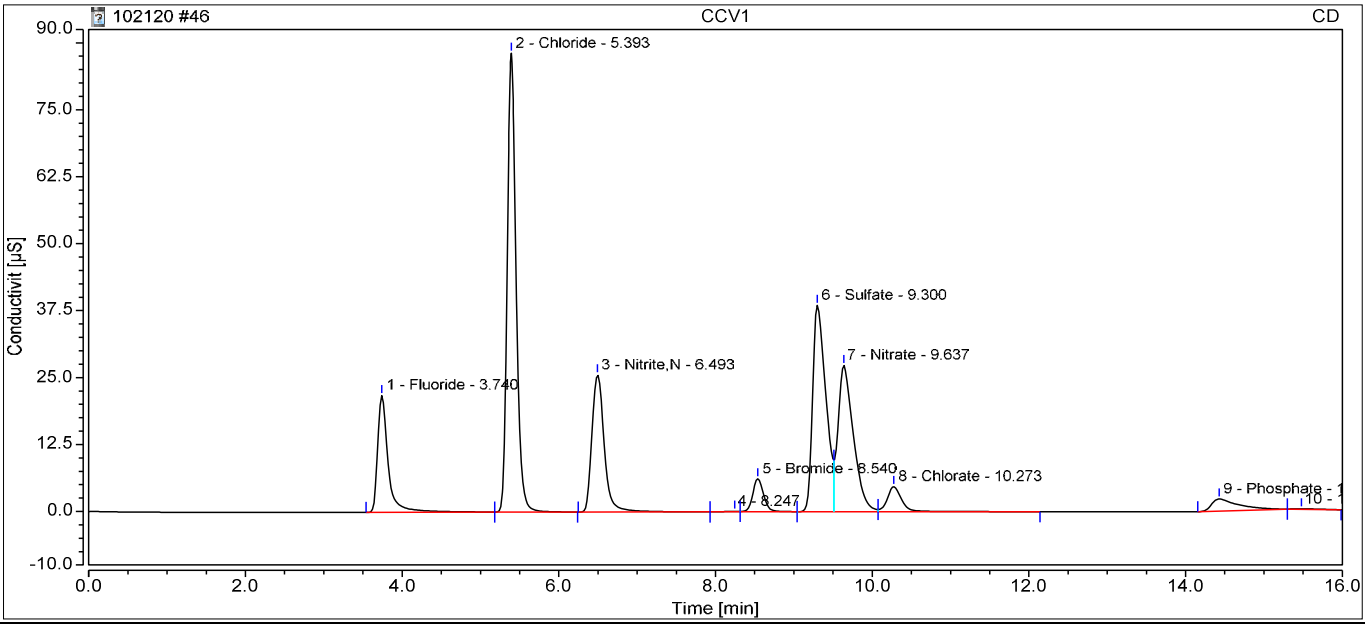
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.41	Chloride	BMB	0.015	0.0082	0.0082	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.45	Sulfate	BMB	0.006	0.0465	0.0465	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.020**		**0.05**	

46 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 19:33**	*Sample Weight:*	**1.0000**

Run Time:



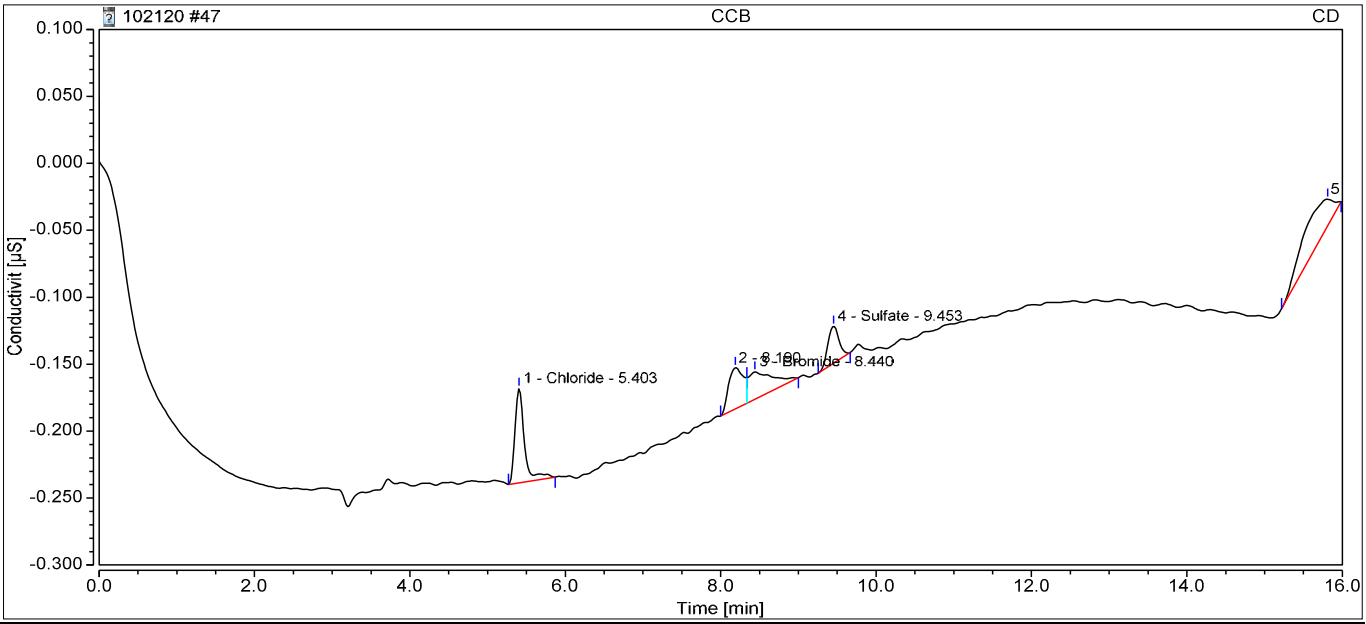
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.399	9.6233	9.6233	1.0000
2	5.39	Chloride	BMB	11.216	48.9540	48.9540	1.0000
3	6.49	Nitrite,N	BMB	4.687	9.9112	9.9112	1.0000
5	8.54	Bromide	M	1.001	9.8486	9.8486	1.0000
6	9.30	Sulfate	M	7.577	47.3192	47.3192	1.0000
7	9.64	Nitrate	M	6.273	10.1692	10.1692	1.0000
8	10.27	Chlorate	MB	1.016	9.8259	9.8259	1.0000
9	14.43	Phosphate	BMB	0.904	5.0328	5.0328	1.0000
Total:			**0.000**	**36.073**		**150.68**	

47 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 19:51**	*Sample Weight:*	**1.0000**

Run Time:



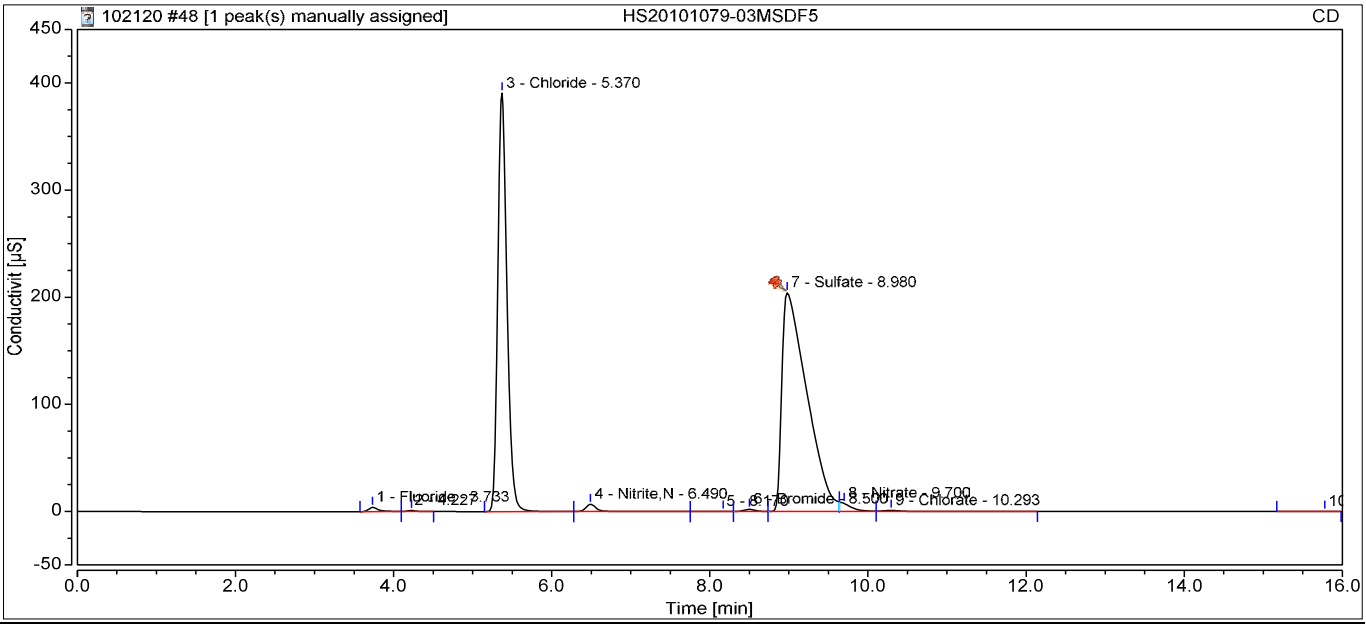
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.010	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.44	Bromide	MB	0.007	n.a.	n.a.	1.0000
4	9.45	Sulfate	BMB	0.005	0.0409	0.0409	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.021**		**0.04**	

48 HS20101079-03MSDF5

Sample Name:	**HS20101079-03MSDF5**	*Injection Volume:*	**5.00**
Vial Number:	**RD3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**10/21/2020 20:09**	*Sample Weight:*	**1.0000**

Run Time:



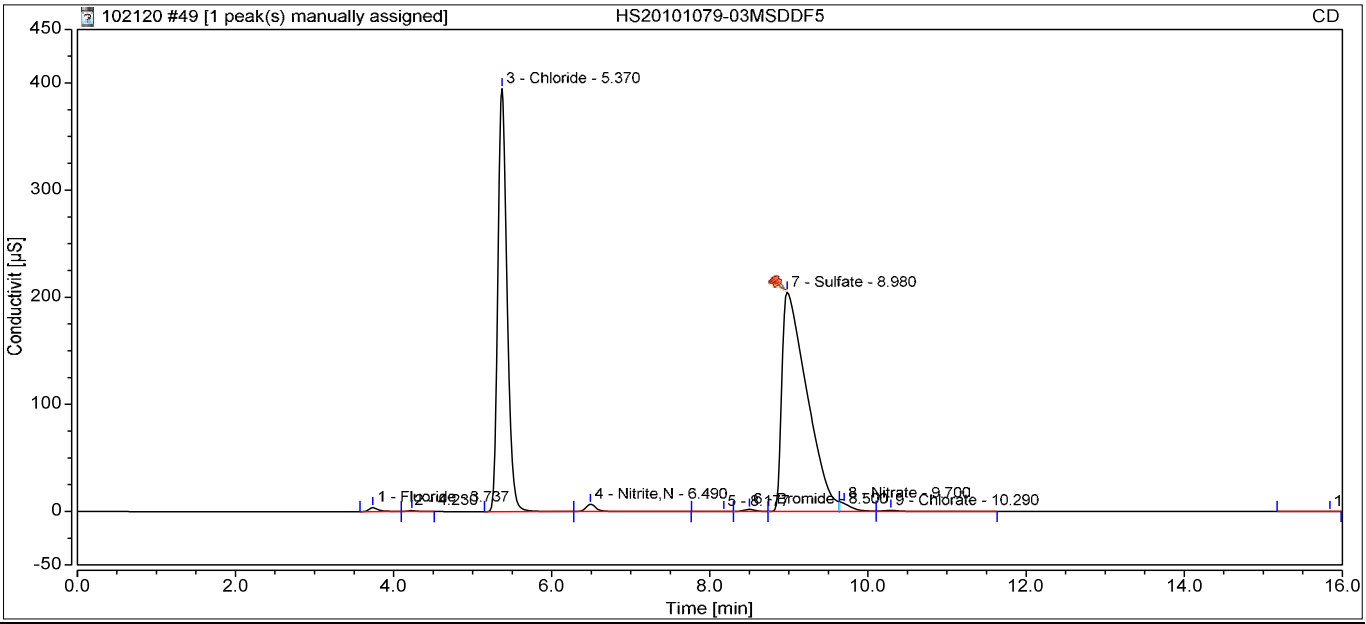
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.545	1.5517	7.7587	5.0000
3	5.37	Chloride	BMB	52.009	227.1987	1135.9934	5.0000
4	6.49	Nitrite,N	BMB	1.043	2.1750	10.8750	5.0000
6	8.50	Bromide	M	0.346	3.3525	16.7626	5.0000
7	8.98	Sulfate	M ^	74.882	467.5645	2337.8225	5.0000
8	9.70	Nitrate	M	1.427	2.2949	11.4745	5.0000
9	10.29	Chlorate	MB	0.326	3.0579	15.2895	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**130.578**		**3535.98**	

49 HS20101079-03MSDDF5

Sample Name:	**HS20101079-03MSDDF5**	*Injection Volume:*	**5.00**
Vial Number:	**RD4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**10/21/2020 20:27**	*Sample Weight:*	**1.0000**

Run Time:



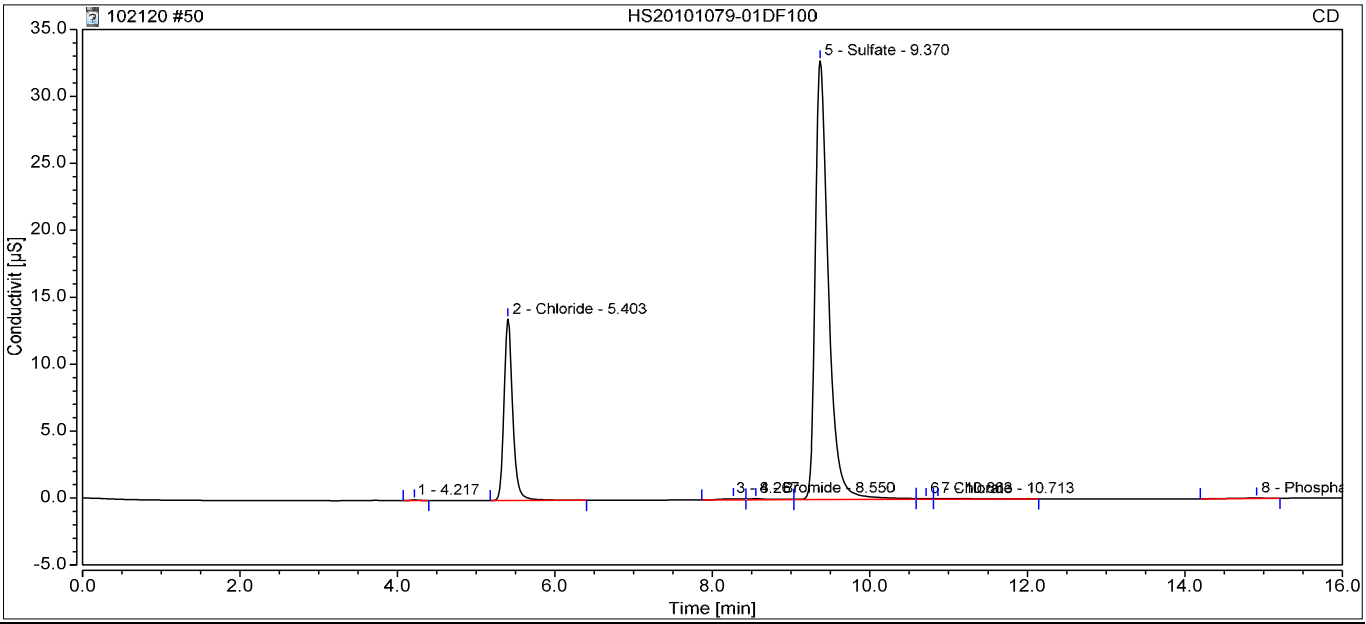
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.505	1.4396	7.1982	5.0000
3	5.37	Chloride	BMB	52.632	229.9209	1149.6046	5.0000
4	6.49	Nitrite,N	BMB	1.056	2.2020	11.0098	5.0000
6	8.50	Bromide	M	0.348	3.3738	16.8688	5.0000
7	8.98	Sulfate	M ^	75.275	470.0148	2350.0738	5.0000
8	9.70	Nitrate	M	1.438	2.3126	11.5628	5.0000
9	10.29	Chlorate	MB	0.306	2.8634	14.3172	5.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	5.0000
Total:			**0.000**	**131.559**		**3560.64**	

50 HS20101079-01DF100

Sample Name:	**HS20101079-01DF100**	*Injection Volume:*	**5.00**
Vial Number:	**RD5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**100.0000**
Recording Time:	**10/21/2020 20:45**	*Sample Weight:*	**1.0000**

Run Time:



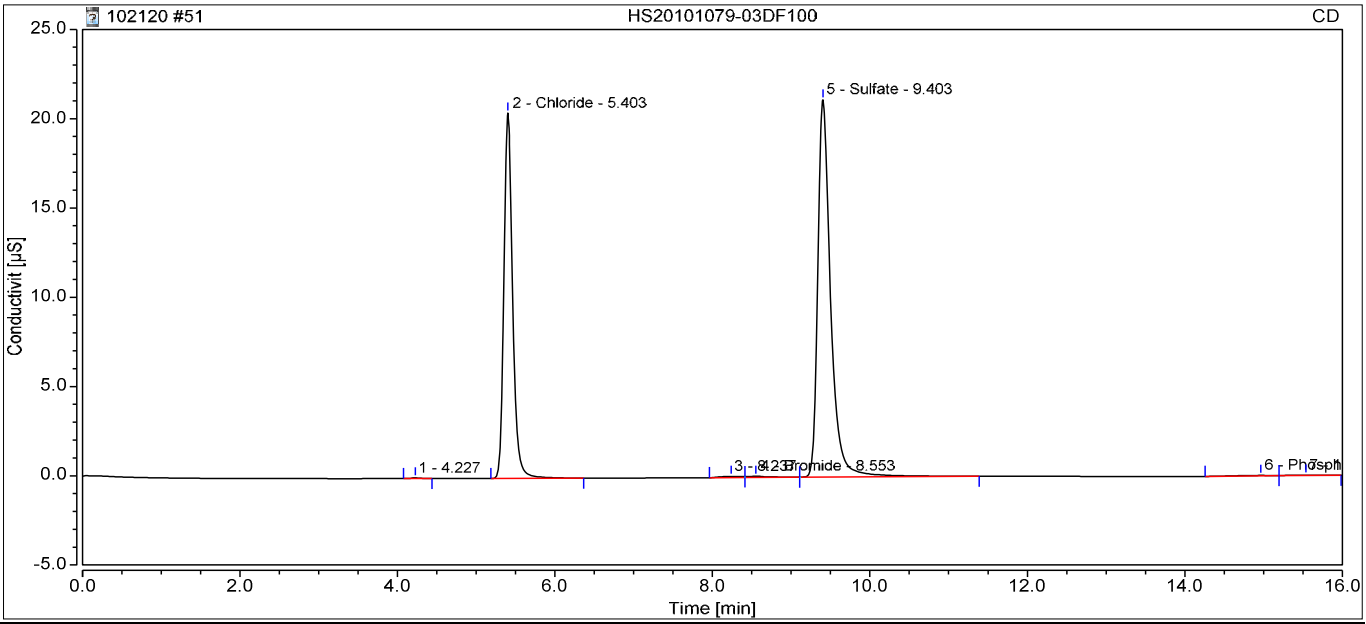
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	100.0000
2	5.40	Chloride	BMB	1.758	7.6250	762.4982	100.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	100.0000
4	8.55	Bromide	M	0.025	0.1676	16.7613	100.0000
5	9.37	Sulfate	M	6.345	39.6321	3963.2066	100.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	100.0000
6	10.71	Chlorate	M	0.010	n.a.	n.a.	100.0000
8	14.91	Phosphate	BMB	0.016	0.4611	46.1090	100.0000
Total:			**0.000**	**8.155**		**4788.58**	

51 HS20101079-03DF100

Sample Name:	**HS20101079-03DF100**	*Injection Volume:*	**5.00**
Vial Number:	**RD6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**100.0000**
Recording Time:	**10/21/2020 21:03**	*Sample Weight:*	**1.0000**

Run Time:



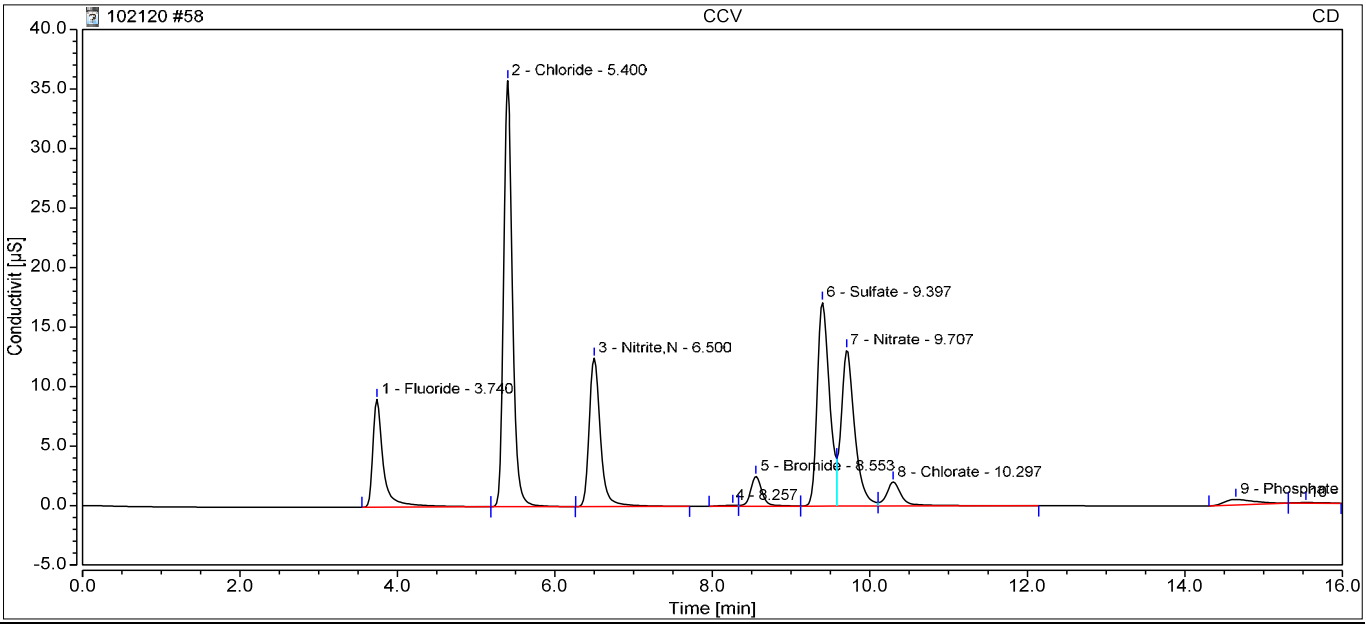
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	100.0000
2	5.40	Chloride	BMB	2.658	11.5602	1156.0189	100.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	100.0000
4	8.55	Bromide	M	0.021	0.1270	12.7008	100.0000
5	9.40	Sulfate	MB	3.988	24.9120	2491.1961	100.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	100.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	100.0000
6	14.96	Phosphate	BMB	0.011	0.4374	43.7430	100.0000
Total:			**0.000**	**6.679**		**3703.66**	

58 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 23:09**	*Sample Weight:*	**1.0000**

Run Time:



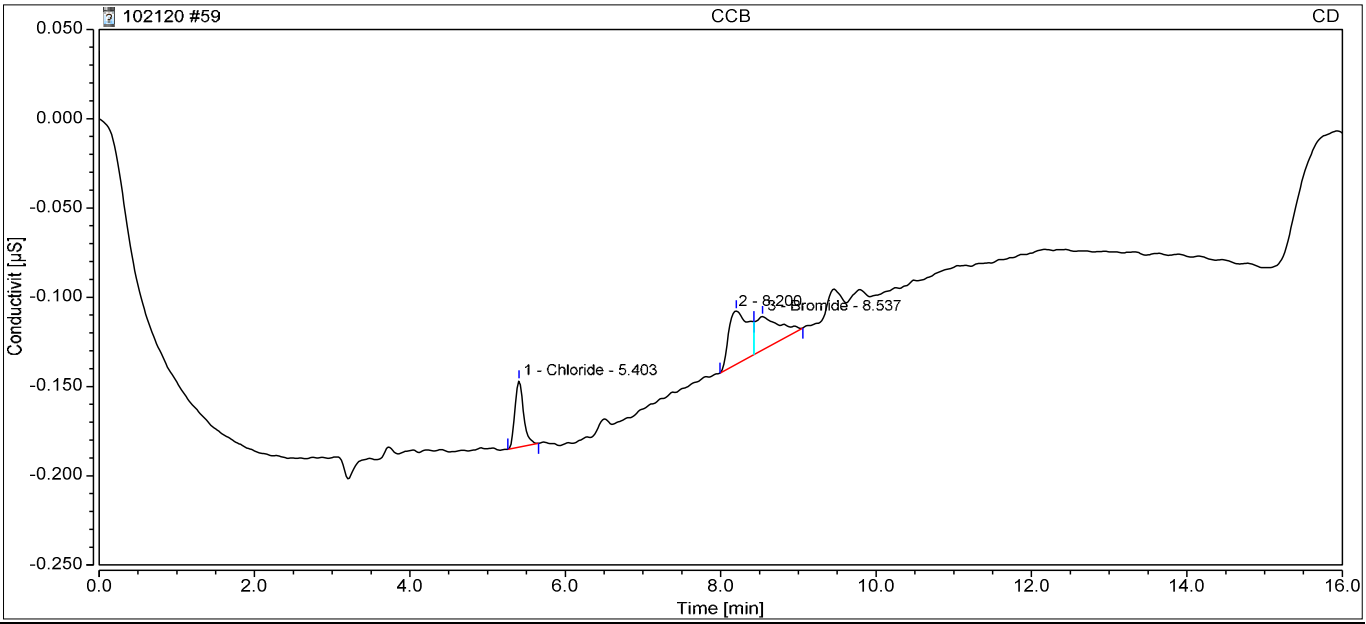
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.416	4.0149	4.0149	1.0000
2	5.40	Chloride	BMB	4.672	20.3566	20.3566	1.0000
3	6.50	Nitrite,N	BMB	2.083	4.3818	4.3818	1.0000
5	8.55	Bromide	M	0.422	4.1066	4.1066	1.0000
6	9.40	Sulfate	M	3.087	19.2891	19.2891	1.0000
7	9.71	Nitrate	M	2.624	4.2405	4.2405	1.0000
8	10.30	Chlorate	MB	0.467	4.4411	4.4411	1.0000
9	14.65	Phosphate	BMB	0.199	1.4039	1.4039	1.0000
Total:			**0.000**	**14.970**		**62.23**	

59 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/21/2020 23:27**	*Sample Weight:*	**1.0000**

Run Time:



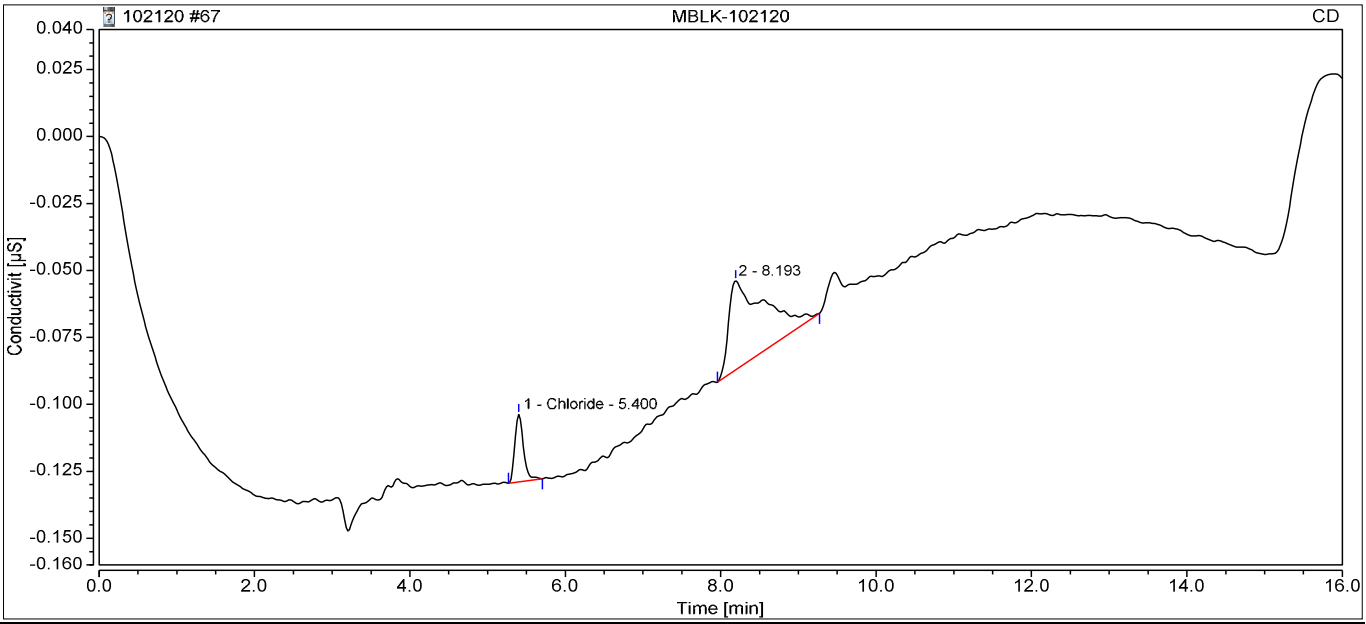
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.005	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.54	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.011**		**0.00**	

67 MBLK-102120

Sample Name:	**MBLK-102120**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 01:51**	*Sample Weight:*	**1.0000**

Run Time:



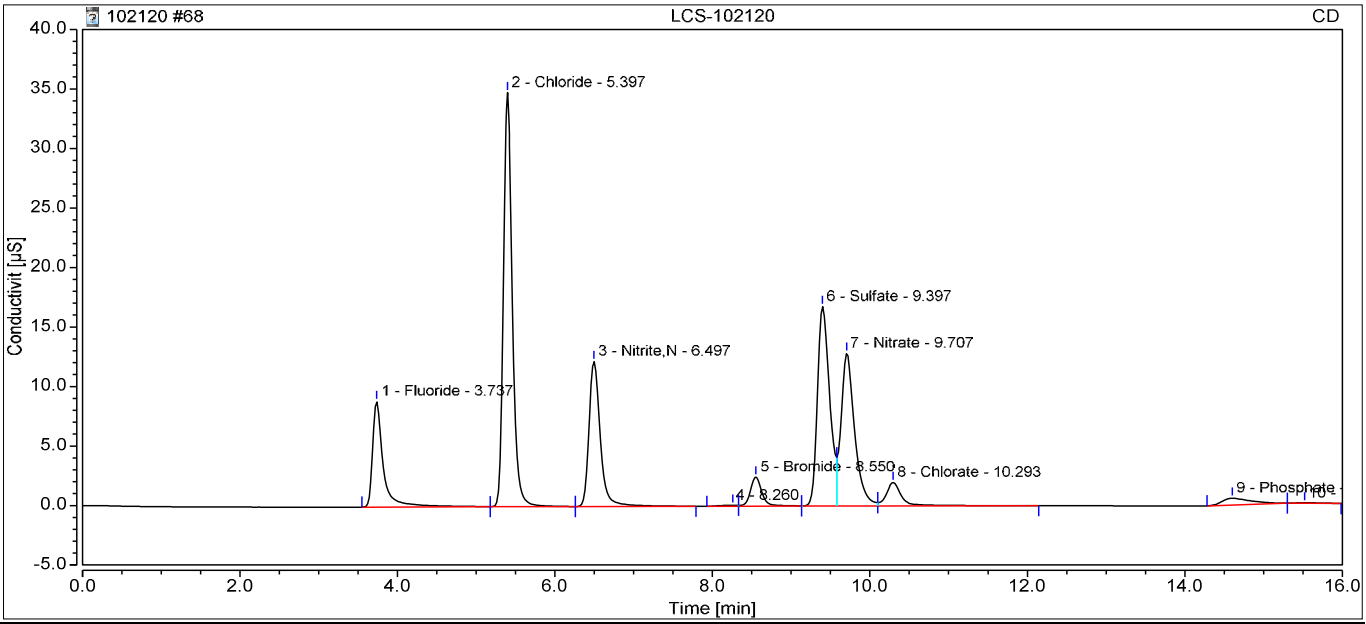
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.00**	

68 LCS-102120

Sample Name:	**LCS-102120**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 02:09**	*Sample Weight:*	**1.0000**

Run Time:



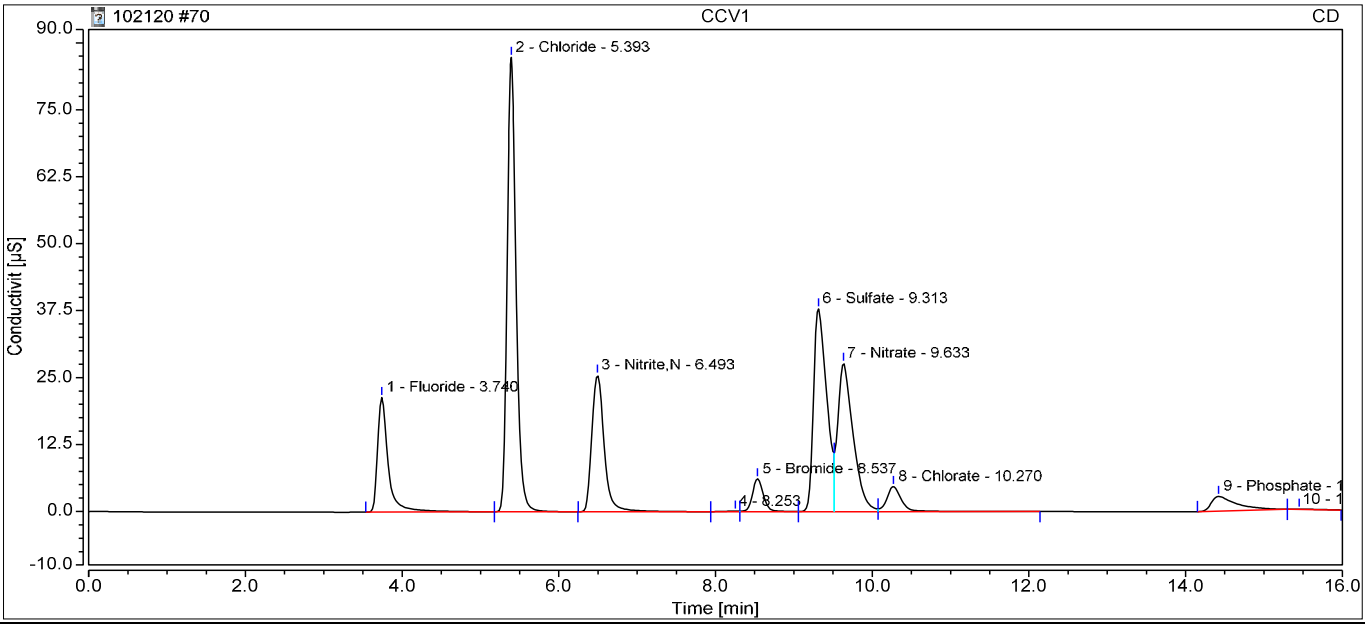
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.389	3.9380	3.9380	1.0000
2	5.40	Chloride	BMB	4.560	19.8709	19.8709	1.0000
3	6.50	Nitrite,N	BMB	2.039	4.2880	4.2880	1.0000
5	8.55	Bromide	M	0.414	4.0223	4.0223	1.0000
6	9.40	Sulfate	M	3.008	18.7939	18.7939	1.0000
7	9.71	Nitrate	M	2.567	4.1478	4.1478	1.0000
8	10.29	Chlorate	MB	0.454	4.3195	4.3195	1.0000
9	14.60	Phosphate	BMB	0.239	1.6093	1.6093	1.0000
Total:			**0.000**	**14.670**		**60.99**	

70 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 02:46**	*Sample Weight:*	**1.0000**

Run Time:



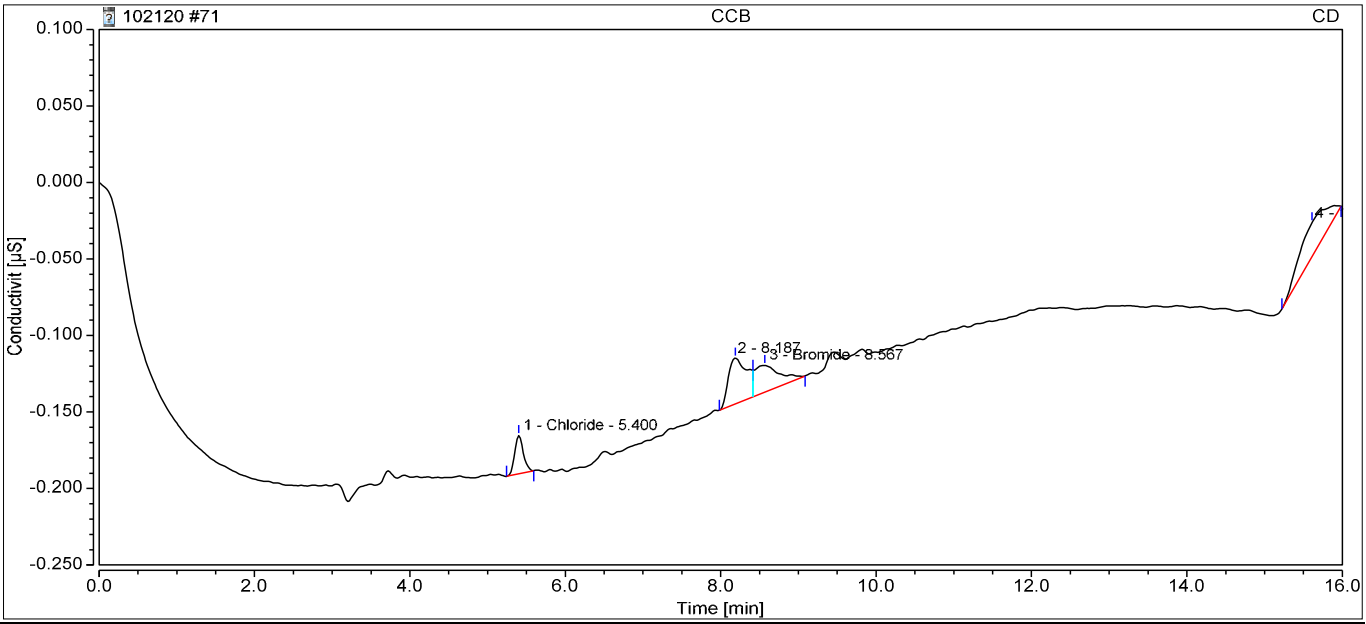
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.385	9.5817	9.5817	1.0000
2	5.39	Chloride	BMB	11.175	48.7739	48.7739	1.0000
3	6.49	Nitrite,N	BMB	4.678	9.8920	9.8920	1.0000
5	8.54	Bromide	M	0.996	9.8008	9.8008	1.0000
6	9.31	Sulfate	M	7.418	46.3271	46.3271	1.0000
7	9.63	Nitrate	M	6.362	10.3139	10.3139	1.0000
8	10.27	Chlorate	MB	1.020	9.8711	9.8711	1.0000
9	14.42	Phosphate	BMB	1.036	5.7110	5.7110	1.0000
Total:			**0.000**	**36.070**		**150.27**	

71 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 03:04**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.57	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.010**		**0.00**	

Sequence: 110220
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	me	Status
	STD1		Calibration	BD1	1.00	1	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD2		Calibration	BD2	1.00	2	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD3		Calibration	BD3	1.00	3	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD4		Calibration	BD4	1.00	4	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD5		Calibration	BD5	1.00	5	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD6		Calibration	BD6	1.00	6	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICV		Unknown	BD7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICB		Unknown	BD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	MBLK-110220		Unknown	BA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	LCS-110220		Unknown	BA8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-02		Unknown	RE3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-04		Unknown	RE4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101079-05		Unknown	RE5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11		Unknown	GA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11MS		Unknown	GA6	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11MSD		Unknown	GA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished

Sequence: 110220
Last Update Operator: alshs.nouser

Inject Time
8/11/2020 10:46:45 AM -05:00
8/11/2020 11:04:45 AM -05:00
8/11/2020 11:22:45 AM -05:00
8/11/2020 11:40:48 AM -05:00
8/11/2020 11:58:48 AM -05:00
8/11/2020 12:16:48 PM -05:00
8/11/2020 12:34:48 PM -05:00
8/11/2020 12:52:50 PM -05:00
11/2/2020 9:31:20 AM -06:00
11/2/2020 9:49:21 AM -06:00
11/2/2020 11:19:27 AM -06:00
11/2/2020 11:37:28 AM -06:00
11/2/2020 11:55:28 AM -06:00
11/2/2020 12:13:29 PM -06:00
11/3/2020 12:48:59 AM -06:00
11/3/2020 1:25:02 AM -06:00
11/3/2020 2:55:06 AM -06:00
11/3/2020 3:13:06 AM -06:00
11/3/2020 3:31:08 AM -06:00
11/3/2020 4:43:13 AM -06:00
11/3/2020 5:01:13 AM -06:00
11/3/2020 6:31:23 AM -06:00
11/3/2020 6:49:25 AM -06:00
11/3/2020 7:07:27 AM -06:00
11/3/2020 8:19:33 AM -06:00
11/3/2020 8:55:35 AM -06:00

Sequence: 101520
Injection #6: STD6

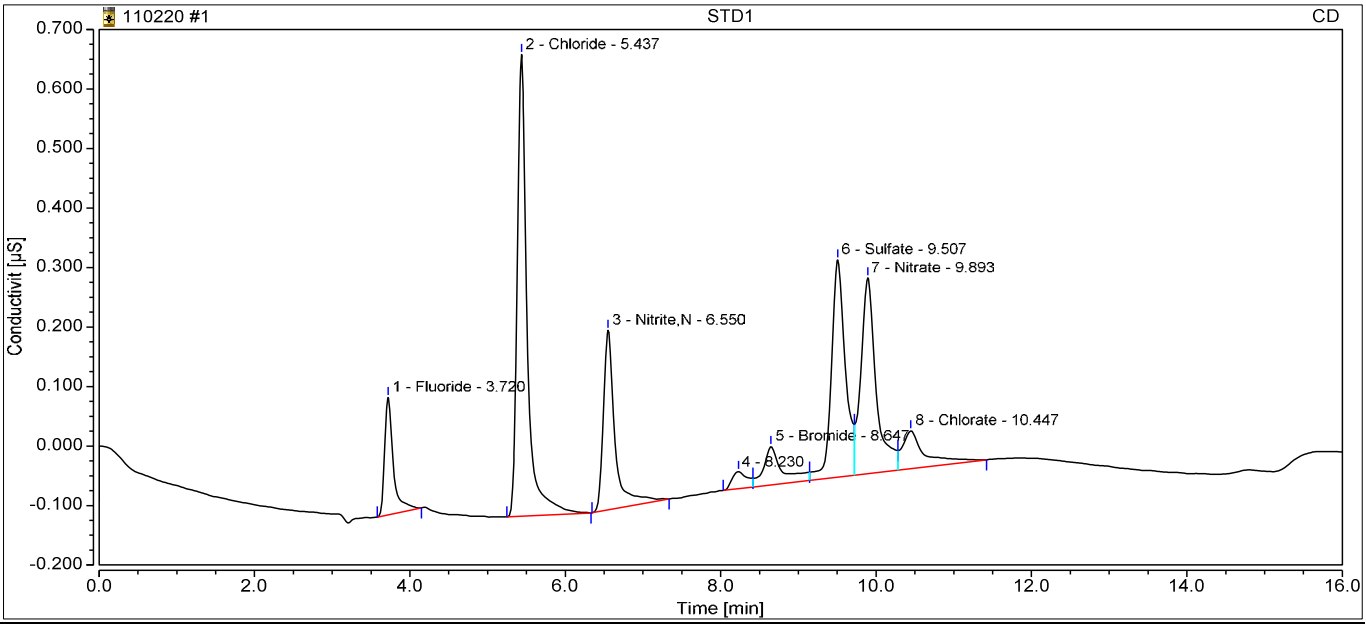
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	***Fluoride***	***Lin, WithOffset, 1/***	***Area***	***6***	***17.3553***	***0.99849***	***-0.0040***	***0.3537***	***0.0000***
2	Chloride	Lin, WithOffset, 1/	Area	6	5.4804	0.99983	0.0129	0.2289	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	26.1376	0.99573	0.0186	0.4711	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	0.9346	0.99999	0.0083	0.1008	0.0000
6	Sulfate	Lin, WithOffset, 1/	Area	6	5.2843	0.99985	-0.0019	0.1602	0.0000
7	Nitrate	Lin, WithOffset, 1/	Area	6	4.5248	0.99988	0.0144	0.6154	0.0000
8	Chlorate	Lin, WithOffset, 1/	Area	6	13.4374	0.99837	0.0139	0.1019	0.0000
10	Phosphate	Lin, WithOffset, 1/	Area	5	18.5357	0.99714	-0.0737	0.1942	0.0000
Maximum					**26.1376**	0.99999			
Minimum					0.9346	**0.99573**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 10:46**	*Sample Weight:*	**1.0000**

Run Time:



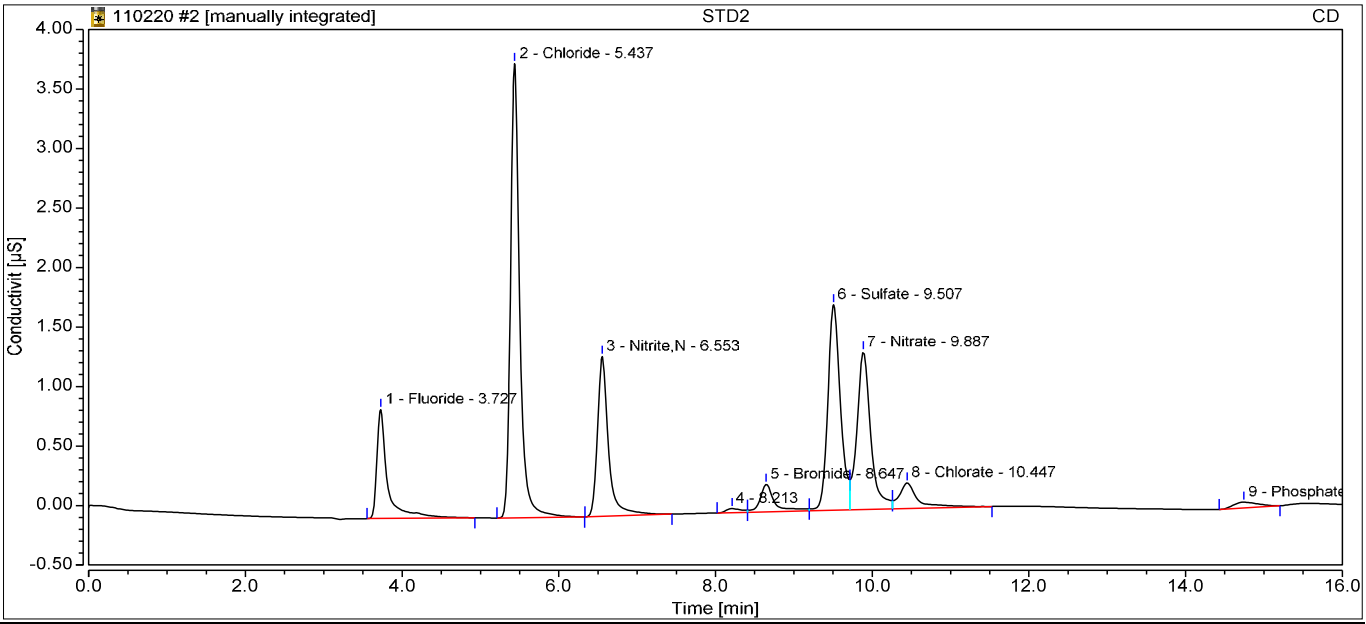
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.025	0.0833	0.0833	1.0000
2	5.44	Chloride	BMB	0.116	0.4487	0.4487	1.0000
3	6.55	Nitrite,N	BMB	0.052	0.0715	0.0715	1.0000
5	8.65	Bromide	M	0.018	0.0997	0.0997	1.0000
6	9.51	Sulfate	M	0.076	0.4861	0.4861	1.0000
7	9.89	Nitrate	M	0.075	0.0985	0.0985	1.0000
8	10.45	Chlorate	MB	0.021	0.0734	0.0734	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.384**		**1.36**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:04**	*Sample Weight:*	**1.0000**

Run Time:

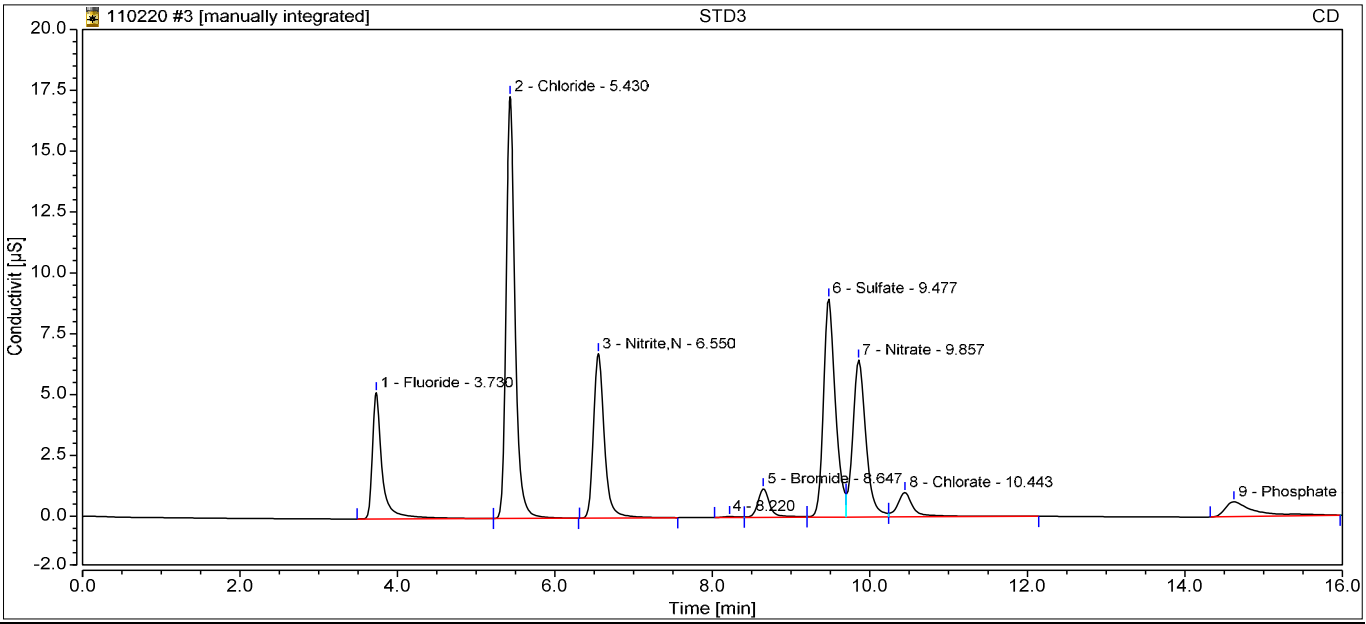


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.145	0.4204	0.4204	1.0000
2	5.44	Chloride	BMB	0.518	2.2084	2.2084	1.0000
3	6.55	Nitrite,N	BMB	0.221	0.4294	0.4294	1.0000
5	8.65	Bromide	M	0.049	0.4041	0.4041	1.0000
6	9.51	Sulfate	M	0.321	2.0151	2.0151	1.0000
7	9.89	Nitrate	M	0.270	0.4147	0.4147	1.0000
8	10.45	Chlorate	MB	0.060	0.4536	0.4536	1.0000
9	14.74	Phosphate	BMB	0.018	0.4703	0.4703	1.0000
Total:			**0.000**	**1.601**		**6.82**	

3 STD3			
Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



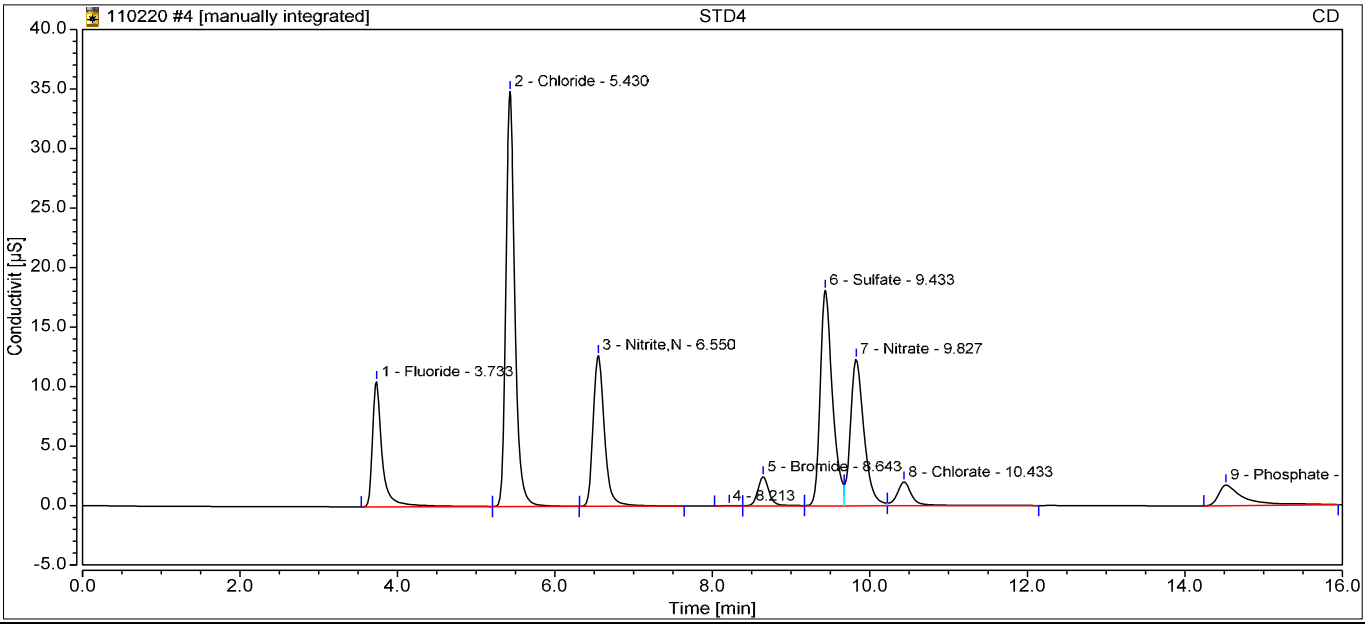
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.745	2.1166	2.1166	1.0000
2	5.43	Chloride	BMB	2.291	9.9533	9.9533	1.0000
3	6.55	Nitrite,N	BMB	1.077	2.2460	2.2460	1.0000
5	8.65	Bromide	M	0.209	1.9882	1.9882	1.0000
6	9.48	Sulfate	M	1.595	9.9688	9.9688	1.0000
7	9.86	Nitrate	M	1.238	1.9883	1.9883	1.0000
8	10.44	Chlorate	MB	0.239	2.2038	2.2038	1.0000
9	14.62	Phosphate	BM *	0.269	1.7634	1.7634	1.0000
Total:			**0.000**	**7.661**		**32.23**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BD4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:40**	*Sample Weight:*	**1.0000**

Run Time:



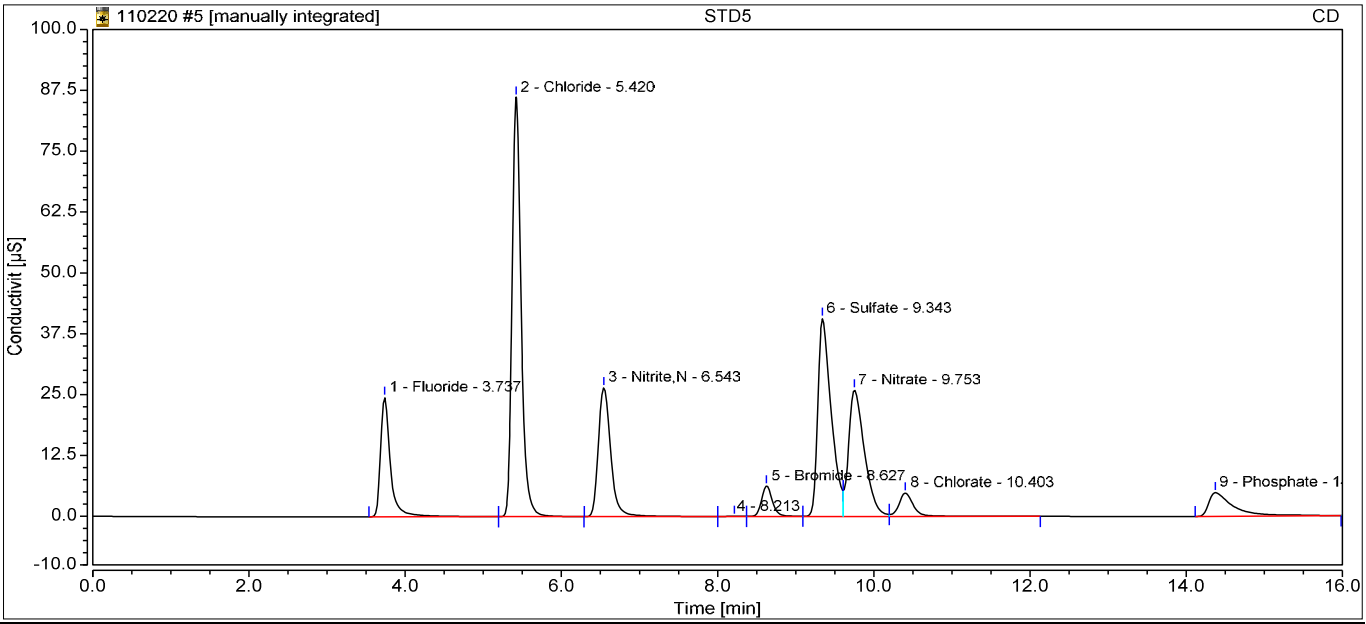
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.504	4.2630	4.2630	1.0000
2	5.43	Chloride	BMB	4.613	20.0986	20.0986	1.0000
3	6.55	Nitrite,N	BMB*	2.104	4.4276	4.4276	1.0000
5	8.64	Bromide	M	0.411	3.9946	3.9946	1.0000
6	9.43	Sulfate	M	3.273	20.4465	20.4465	1.0000
7	9.83	Nitrate	M	2.444	3.9482	3.9482	1.0000
8	10.43	Chlorate	MB	0.443	4.2079	4.2079	1.0000
9	14.52	Phosphate	BM *	0.648	3.7157	3.7157	1.0000
Total:			**0.000**	**15.439**		**65.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BD5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:58**	*Sample Weight:*	**1.0000**

Run Time:



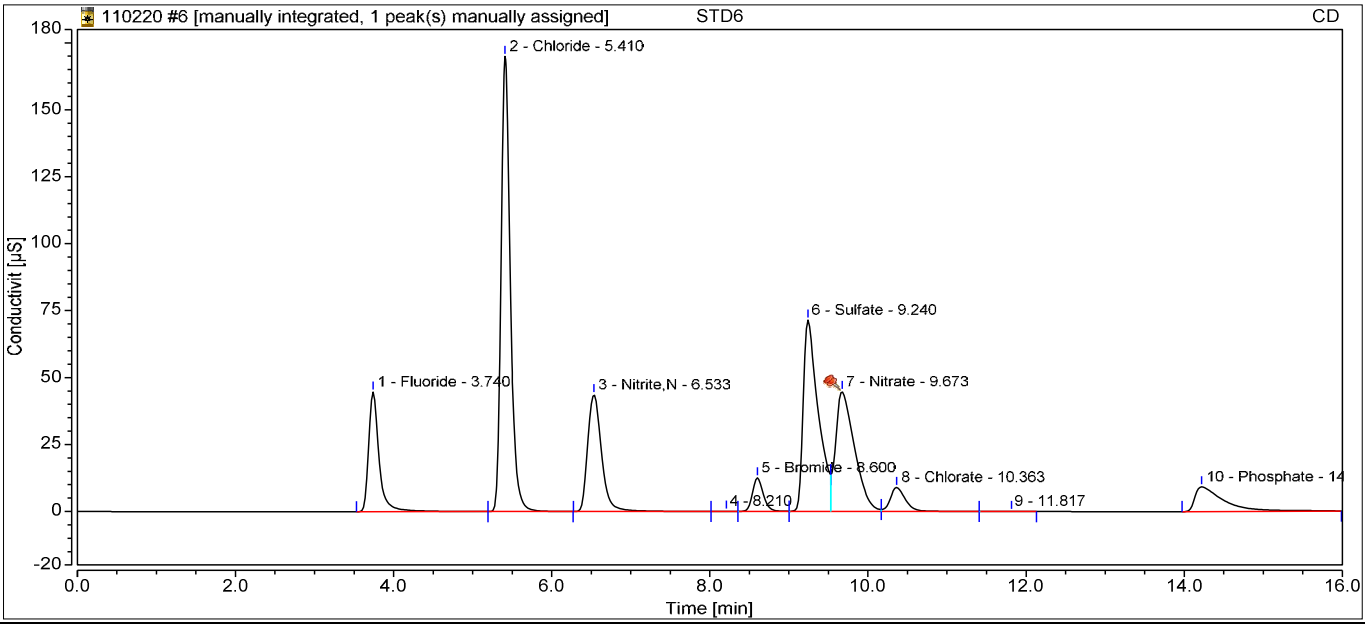
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.611	10.2228	10.2228	1.0000
2	5.42	Chloride	BMB	11.462	50.0272	50.0272	1.0000
3	6.54	Nitrite,N	BMB	4.877	10.3135	10.3135	1.0000
5	8.63	Bromide	M	1.014	9.9796	9.9796	1.0000
6	9.34	Sulfate	M	8.089	50.5200	50.5200	1.0000
7	9.75	Nitrate	M	6.097	9.8832	9.8832	1.0000
8	10.40	Chlorate	MB	1.032	9.9918	9.9918	1.0000
9	14.37	Phosphate	BM *	1.834	9.8223	9.8223	1.0000
Total:			**0.000**	**38.017**		**160.76**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BD6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



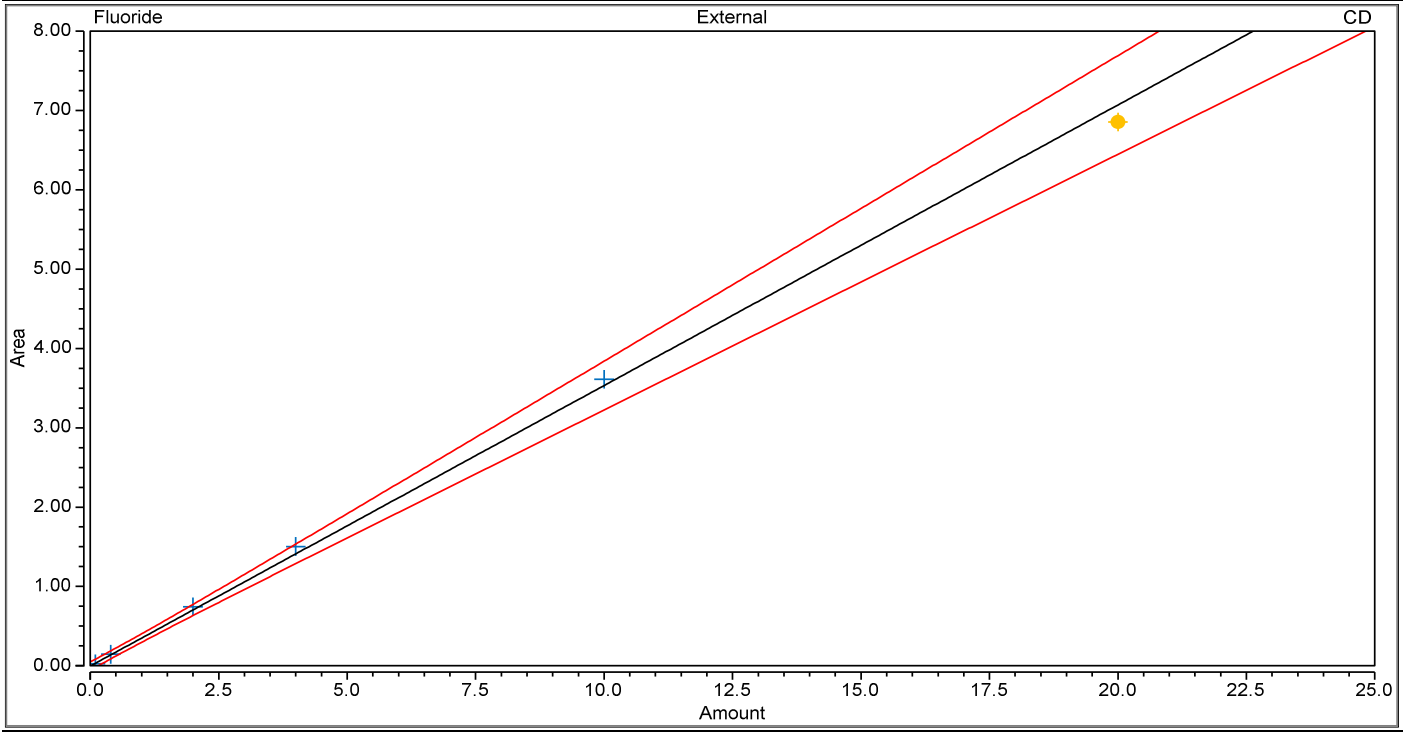
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	6.855	19.3940	19.3940	1.0000
2	5.41	Chloride	BMB	22.844	99.7639	99.7639	1.0000
3	6.53	Nitrite,N	BMB	8.975	19.0121	19.0121	1.0000
5	8.60	Bromide	M	2.028	20.0338	20.0338	1.0000
6	9.24	Sulfate	M	15.864	99.0635	99.0635	1.0000
7	9.67	Nitrate	M ^	12.426	20.1671	20.1671	1.0000
8	10.36	Chlorate	M	2.009	19.5694	19.5694	1.0000
10	14.22	Phosphate	BM *	3.933	20.6283	20.6283	1.0000
Total:			**0.000**	**74.933**		**317.63**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0040
Evaluation Type	Area	*Slope (C1)*	0.3537
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9985

Calibration Plot **Fluoride**



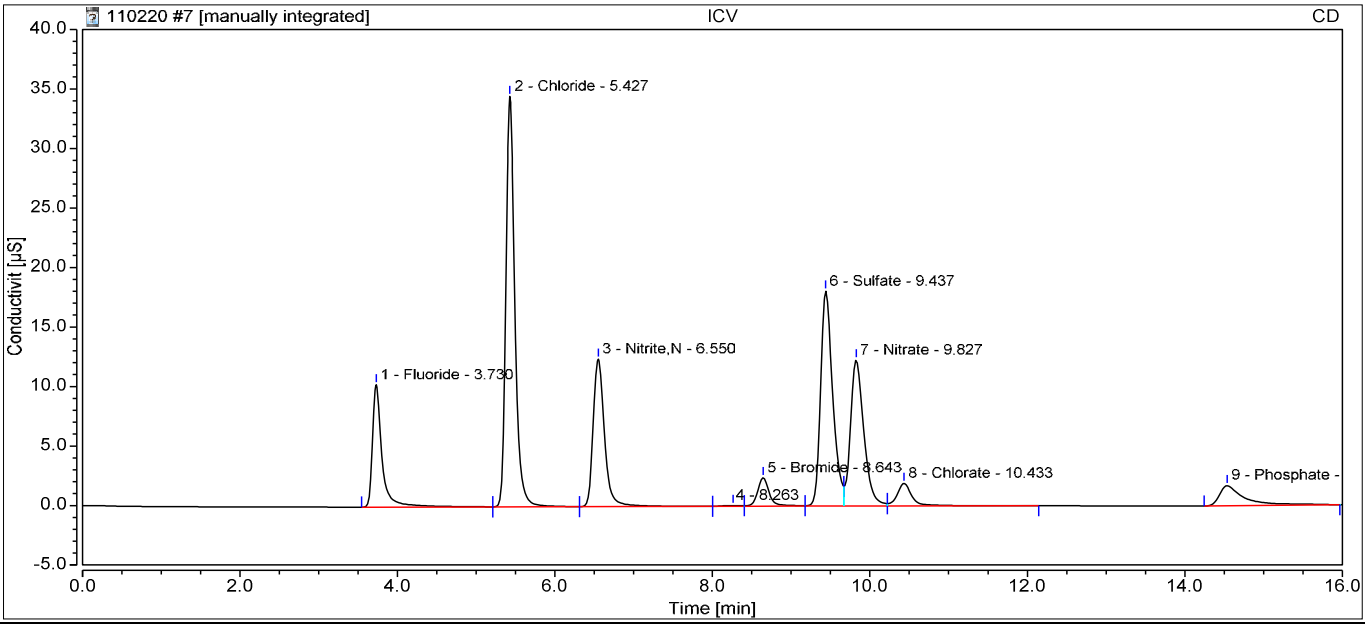
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0254	0.0254	0.025	0.197
2	STD2	2	0.4000	0.1446	0.1446	0.145	0.916
3	STD3	3	2.0000	0.7445	0.7445	0.745	5.182
4	STD4	4	4.0000	1.5036	1.5036	1.504	10.507
5	STD5	5	10.0000	3.6113	3.6113	3.611	24.538
6	STD6	6	20.0000	6.8547	6.8547	6.855	44.677

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



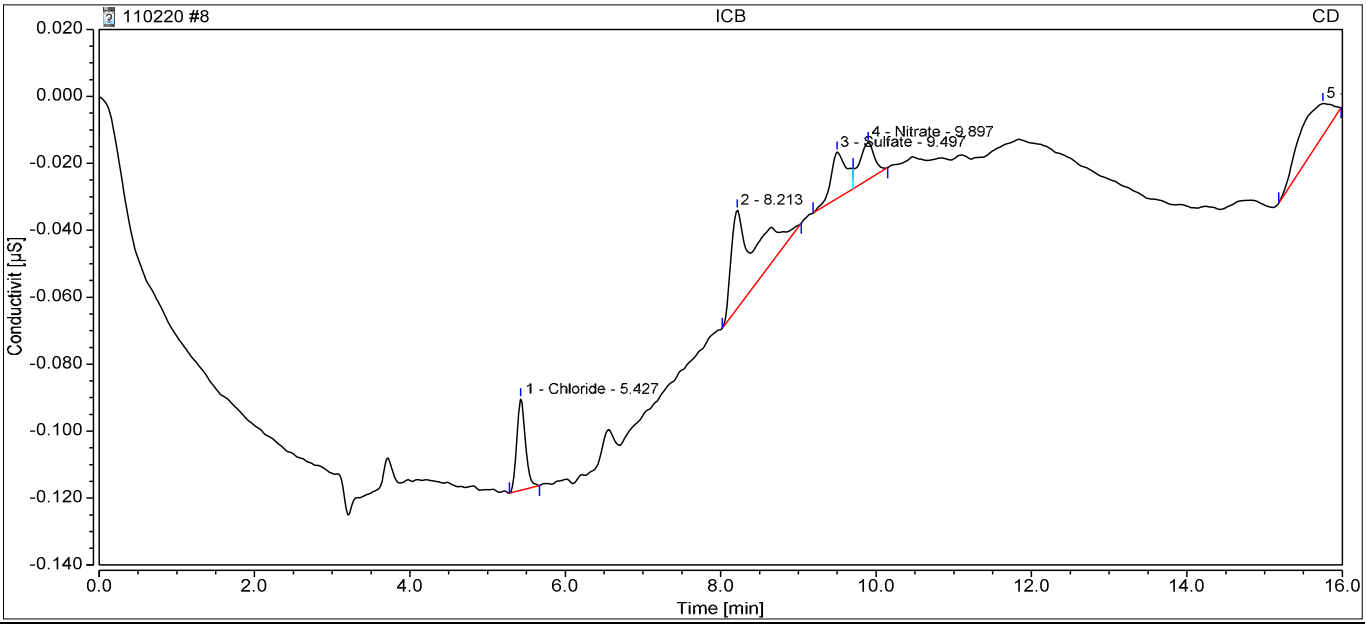
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.447	4.1020	4.1020	1.0000
2	5.43	Chloride	BMB	4.553	19.8399	19.8399	1.0000
3	6.55	Nitrite,N	BMB	2.061	4.3359	4.3359	1.0000
5	8.64	Bromide	M	0.413	4.0106	4.0106	1.0000
6	9.44	Sulfate	M	3.227	20.1622	20.1622	1.0000
7	9.83	Nitrate	M	2.405	3.8850	3.8850	1.0000
8	10.43	Chlorate	MB	0.422	4.0019	4.0019	1.0000
9	14.54	Phosphate	BM *	0.631	3.6292	3.6292	1.0000
Total:			**0.000**	**15.159**		**63.97**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**BD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:



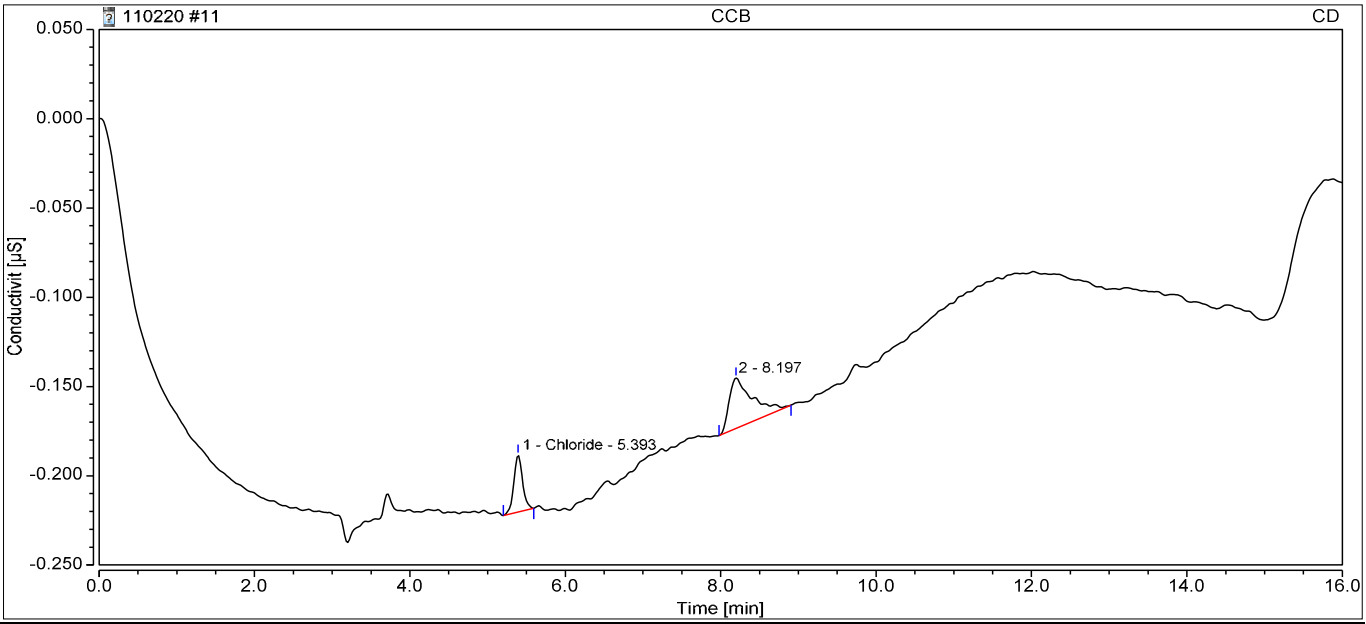
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.43	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.50	Sulfate	BM	0.003	0.0318	0.0318	1.0000
4	9.90	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.03**	

11 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 09:31**	*Sample Weight:*	**1.0000**

Run Time:



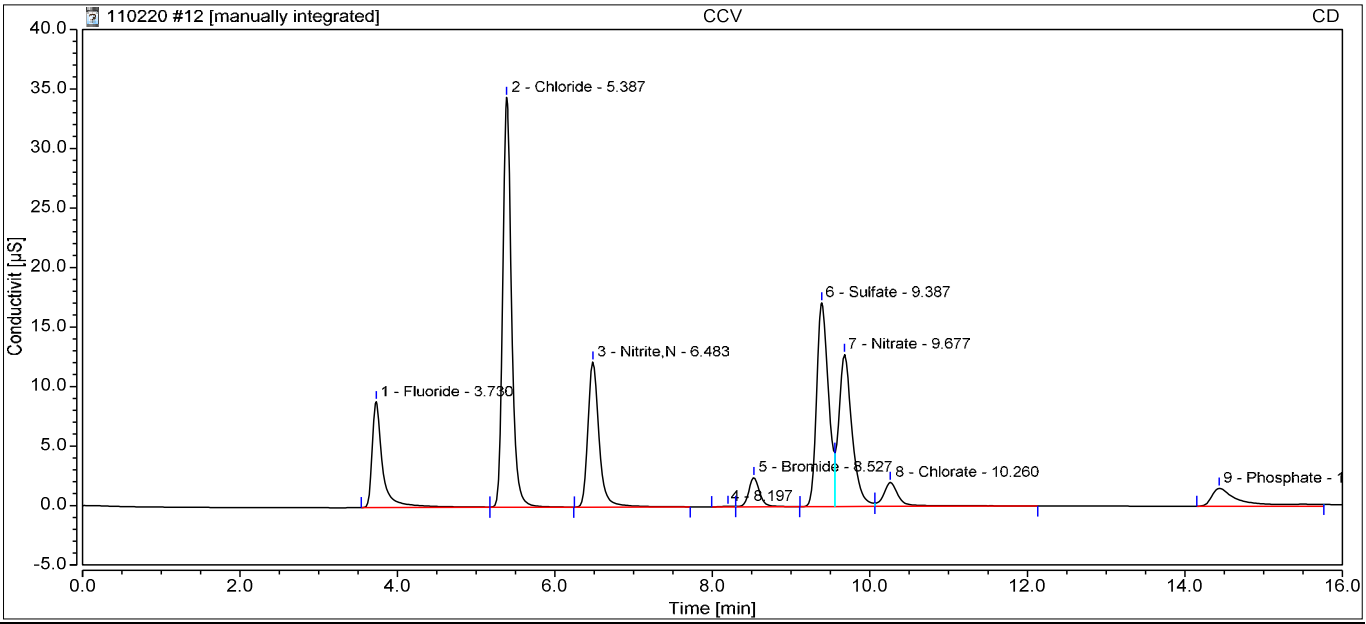
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.00**	

12 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 09:49**	*Sample Weight:*	**1.0000**

Run Time:



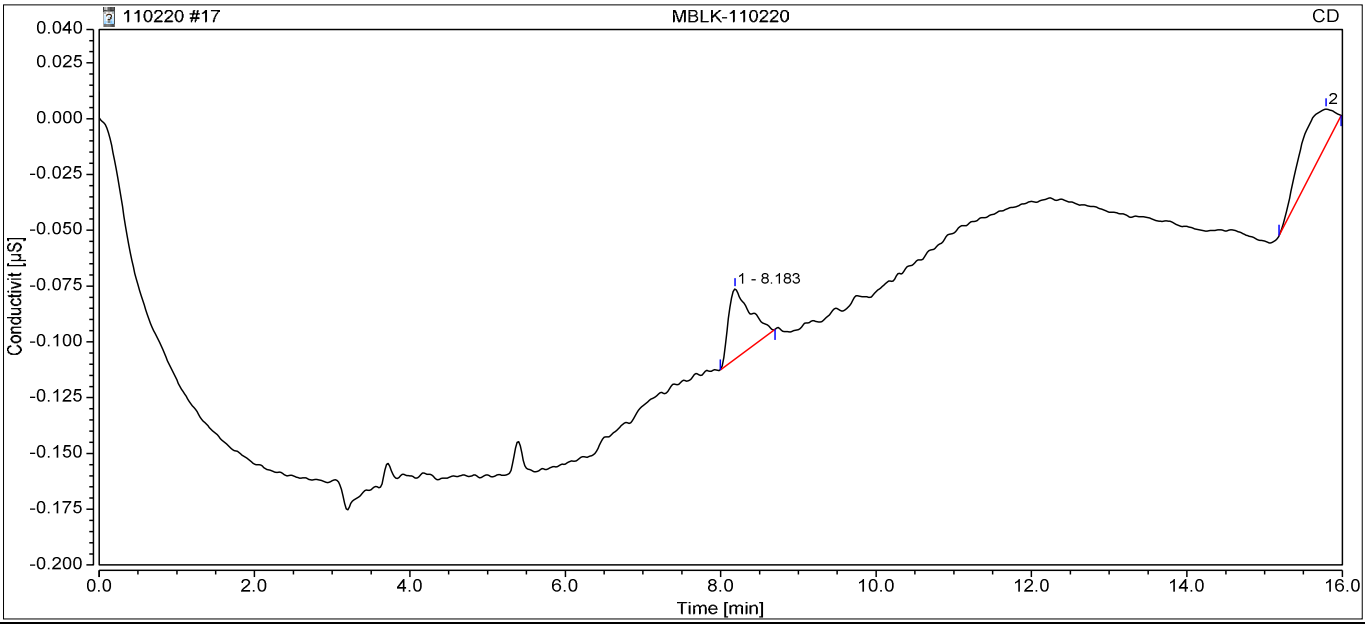
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.378	3.9067	3.9067	1.0000
2	5.39	Chloride	BMB	4.469	19.4721	19.4721	1.0000
3	6.48	Nitrite,N	BMB	2.025	4.2582	4.2582	1.0000
5	8.53	Bromide	MB	0.394	3.8236	3.8236	1.0000
6	9.39	Sulfate	BM	2.952	18.4420	18.4420	1.0000
7	9.68	Nitrate	M	2.516	4.0641	4.0641	1.0000
8	10.26	Chlorate	MB	0.460	4.3774	4.3774	1.0000
9	14.44	Phosphate	BM *	0.637	3.6574	3.6574	1.0000
Total:			**0.000**	**14.829**		**62.00**	

17 MBLK-110220

Sample Name:	**MBLK-110220**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:19**	*Sample Weight:*	**1.0000**

Run Time:



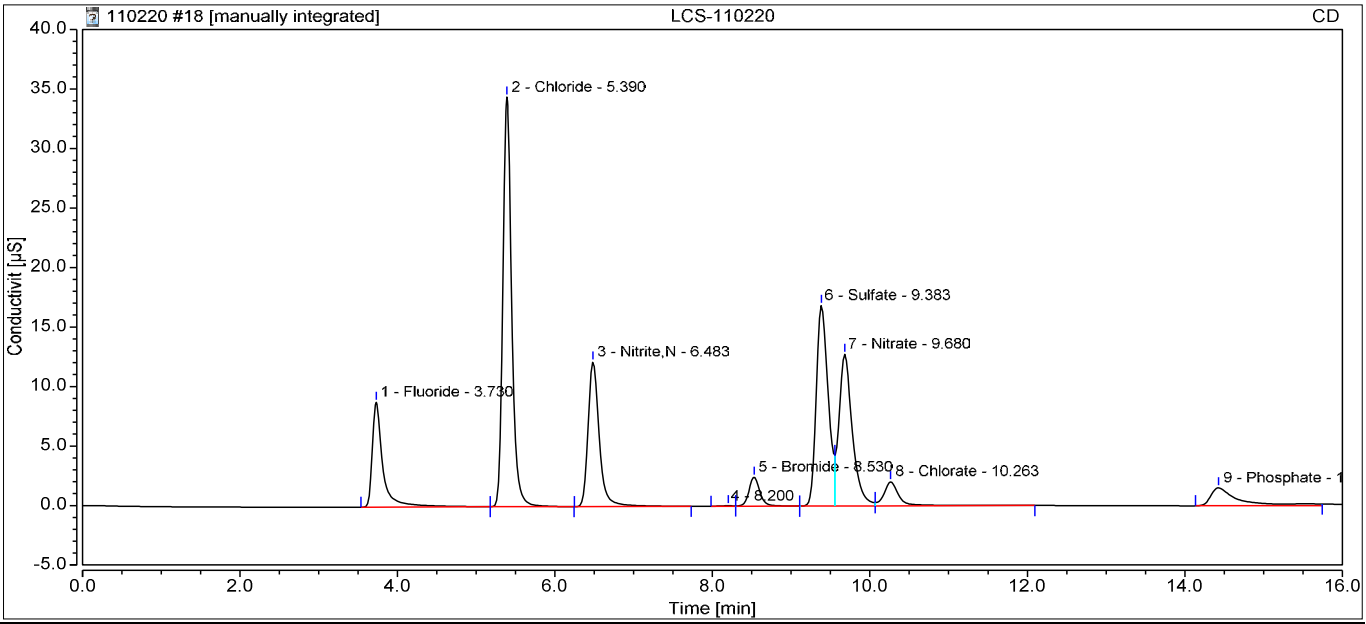
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

18 LCS-110220

Sample Name:	**LCS-110220**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:37**	*Sample Weight:*	**1.0000**

Run Time:



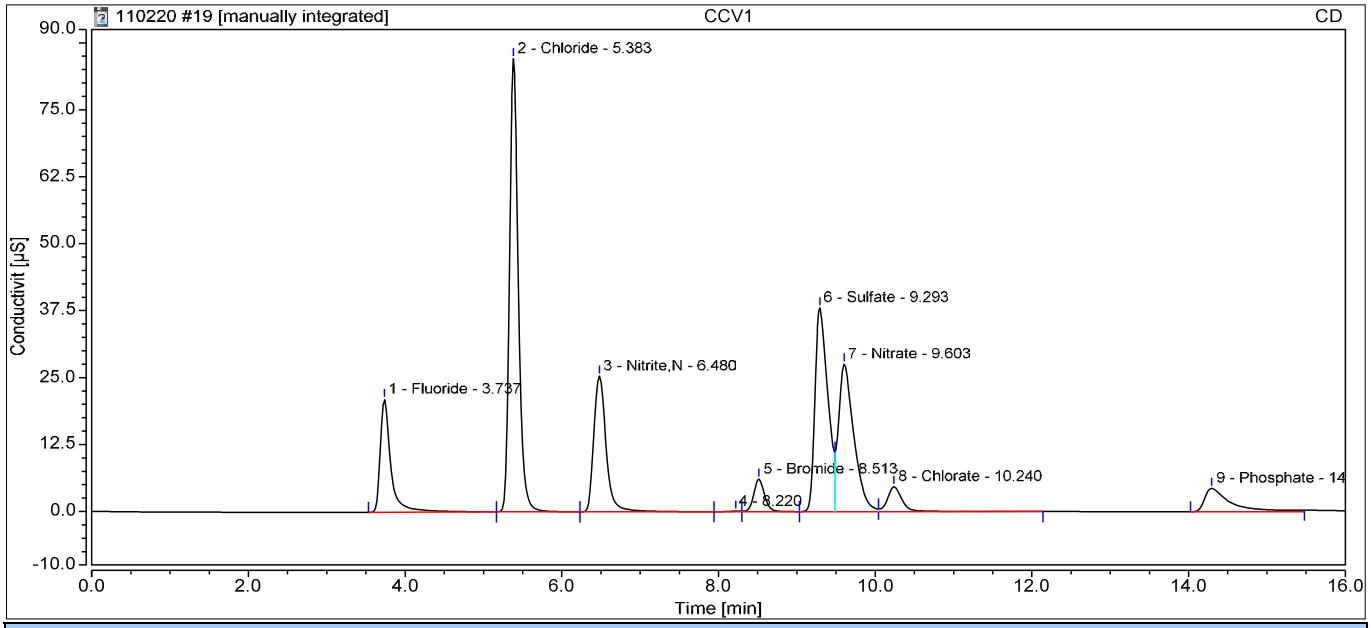
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.373	3.8936	3.8936	1.0000
2	5.39	Chloride	BMB	4.480	19.5205	19.5205	1.0000
3	6.48	Nitrite,N	BMB	2.026	4.2612	4.2612	1.0000
5	8.53	Bromide	M	0.394	3.8281	3.8281	1.0000
6	9.38	Sulfate	M	2.940	18.3657	18.3657	1.0000
7	9.68	Nitrate	M	2.526	4.0808	4.0808	1.0000
8	10.26	Chlorate	MB	0.457	4.3462	4.3462	1.0000
9	14.43	Phosphate	BM *	0.635	3.6474	3.6474	1.0000
Total:			**0.000**	**14.830**		**61.94**	

19 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:55**	*Sample Weight:*	**1.0000**

Run Time:



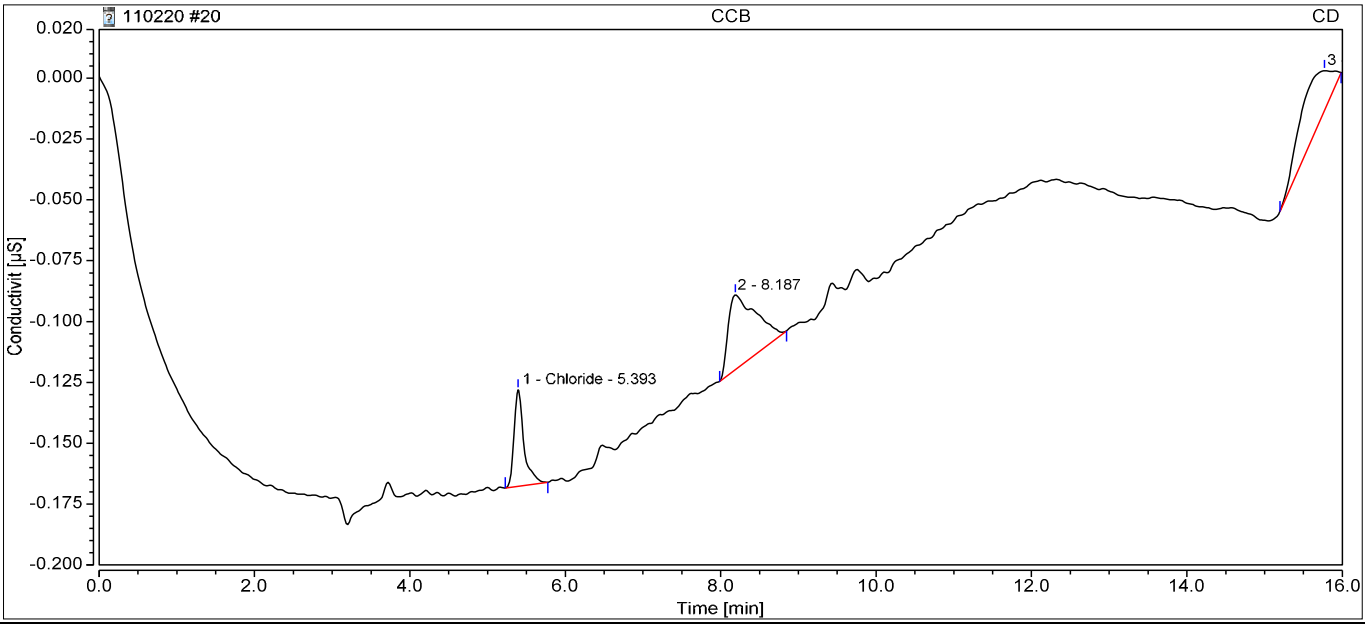
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.319	9.3970	9.3970	1.0000
2	5.38	Chloride	BMB	11.032	48.1486	48.1486	1.0000
3	6.48	Nitrite,N	BMB	4.622	9.7729	9.7729	1.0000
5	8.51	Bromide	M	0.981	9.6479	9.6479	1.0000
6	9.29	Sulfate	M	7.282	45.4766	45.4766	1.0000
7	9.60	Nitrate	M	6.275	10.1717	10.1717	1.0000
8	10.24	Chlorate	MB	1.017	9.8384	9.8384	1.0000
9	14.29	Phosphate	BM *	1.677	9.0119	9.0119	1.0000
Total:			**0.000**	**36.204**		**151.46**	

20 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 12:13**	*Sample Weight:*	**1.0000**

Run Time:

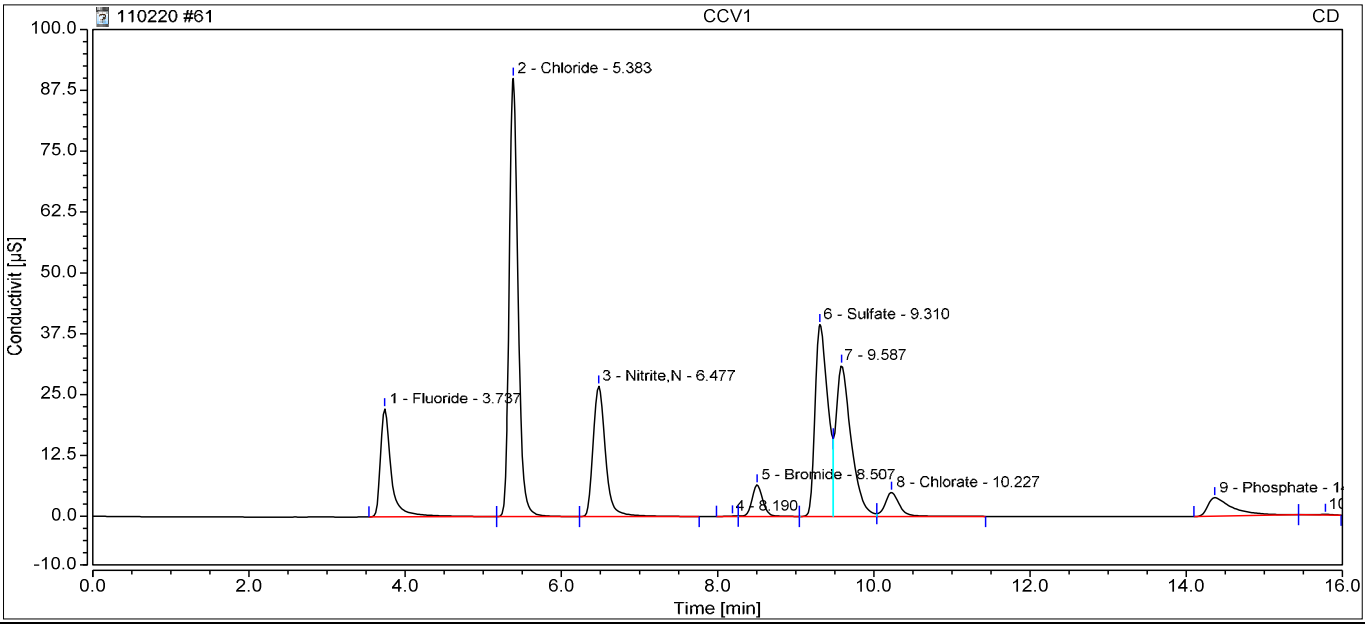


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.006**		**0.00**	

61 CCV1			
Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 00:48**	*Sample Weight:*	**1.0000**

Run Time:



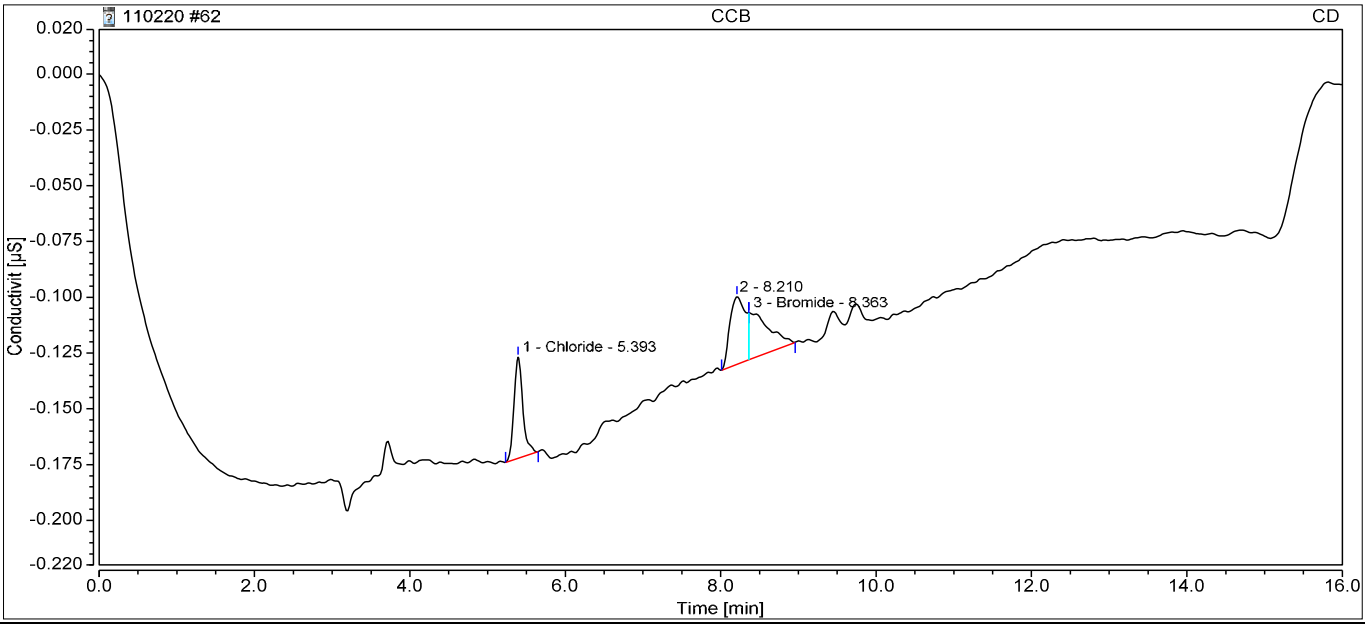
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.573	10.1147	10.1147	1.0000
2	5.38	Chloride	BMB	11.759	51.3256	51.3256	1.0000
3	6.48	Nitrite,N	BMB	4.916	10.3969	10.3969	1.0000
5	8.51	Bromide	M	1.048	10.3133	10.3133	1.0000
6	9.31	Sulfate	M	7.437	46.4495	46.4495	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
8	10.23	Chlorate	MB	1.051	10.1739	10.1739	1.0000
9	14.37	Phosphate	BMB	1.383	7.5008	7.5008	1.0000
Total:			**0.000**	**31.168**		**146.27**	

62 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 01:25**	*Sample Weight:*	**1.0000**

Run Time:



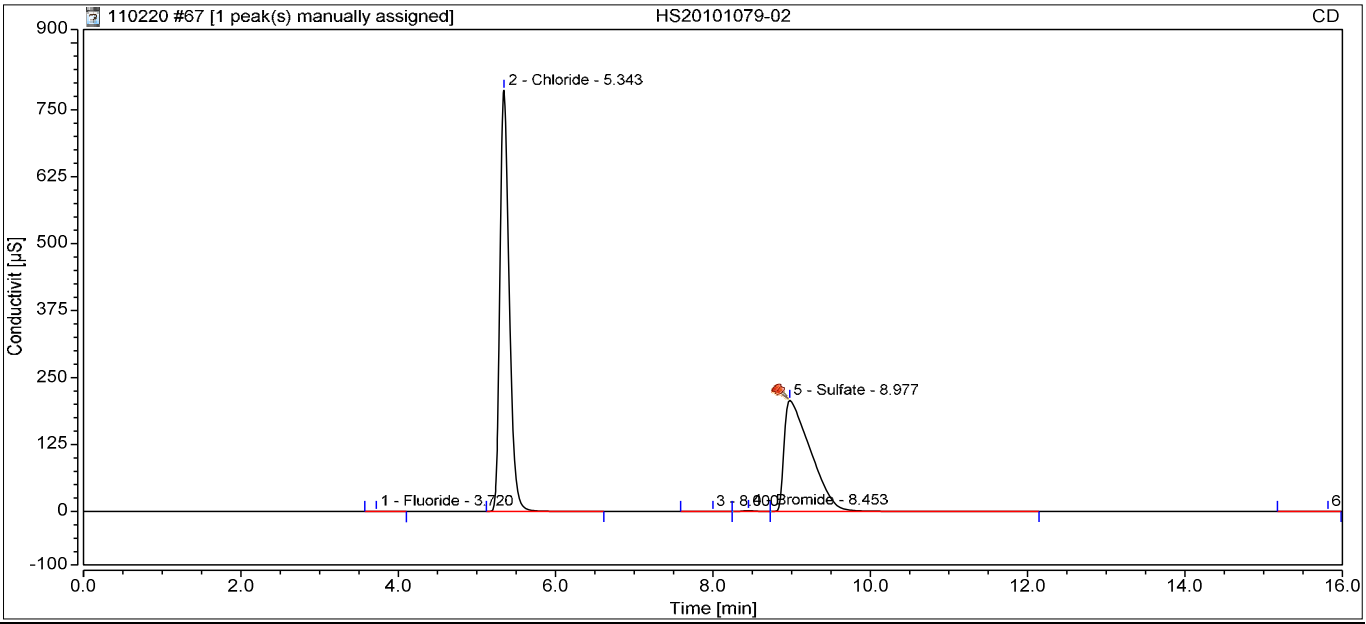
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.36	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.012**		**0.00**	

67 HS20101079-02

Sample Name:	**HS20101079-02**	*Injection Volume:*	**5.00**
Vial Number:	**RE3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 02:55**	*Sample Weight:*	**1.0000**

Run Time:



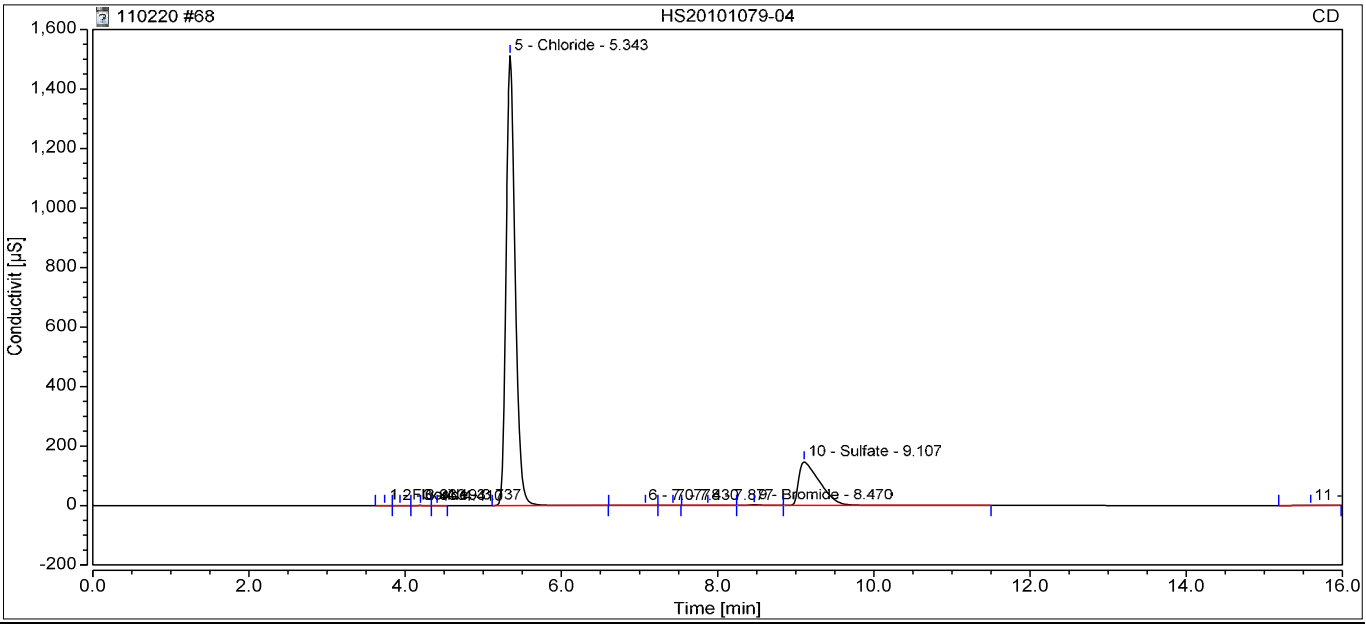
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.030	0.0971	0.0971	1.0000
2	5.34	Chloride	BMB	107.319	468.8799	468.8799	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.45	Bromide	M	0.276	2.6582	2.6582	1.0000
5	8.98	Sulfate	MB^	80.295	501.3632	501.3632	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**187.921**		**973.00**	

68 HS20101079-04

Sample Name:	**HS20101079-04**	*Injection Volume:*	**5.00**
Vial Number:	**RE4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 03:13**	*Sample Weight:*	**1.0000**

Run Time:



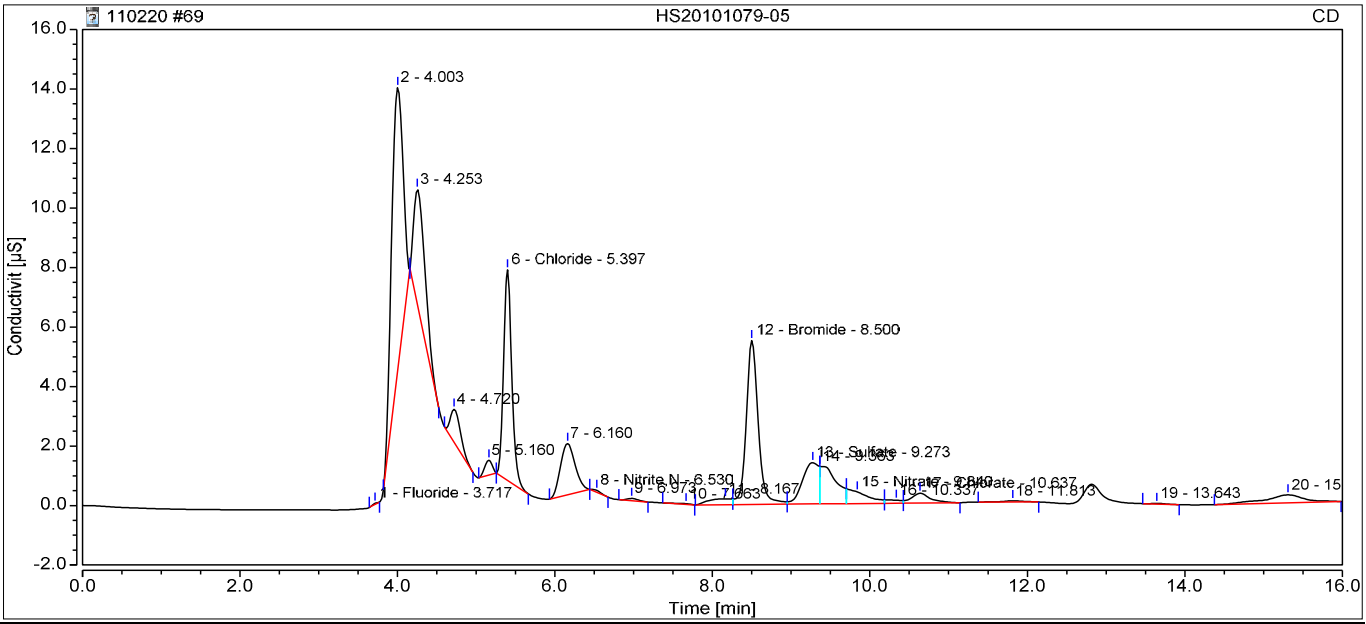
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.007	0.0300	0.0300	1.0000
5	5.34	Chloride	BMB	202.927	886.6425	886.6425	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
9	8.47	Bromide	M	0.477	4.6507	4.6507	1.0000
10	9.11	Sulfate	MB	45.599	284.7219	284.7219	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**249.009**		**1176.05**	

69 HS20101079-05

Sample Name:	**HS20101079-05**	*Injection Volume:*	**5.00**
Vial Number:	**RE5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 03:31**	*Sample Weight:*	**1.0000**

Run Time:



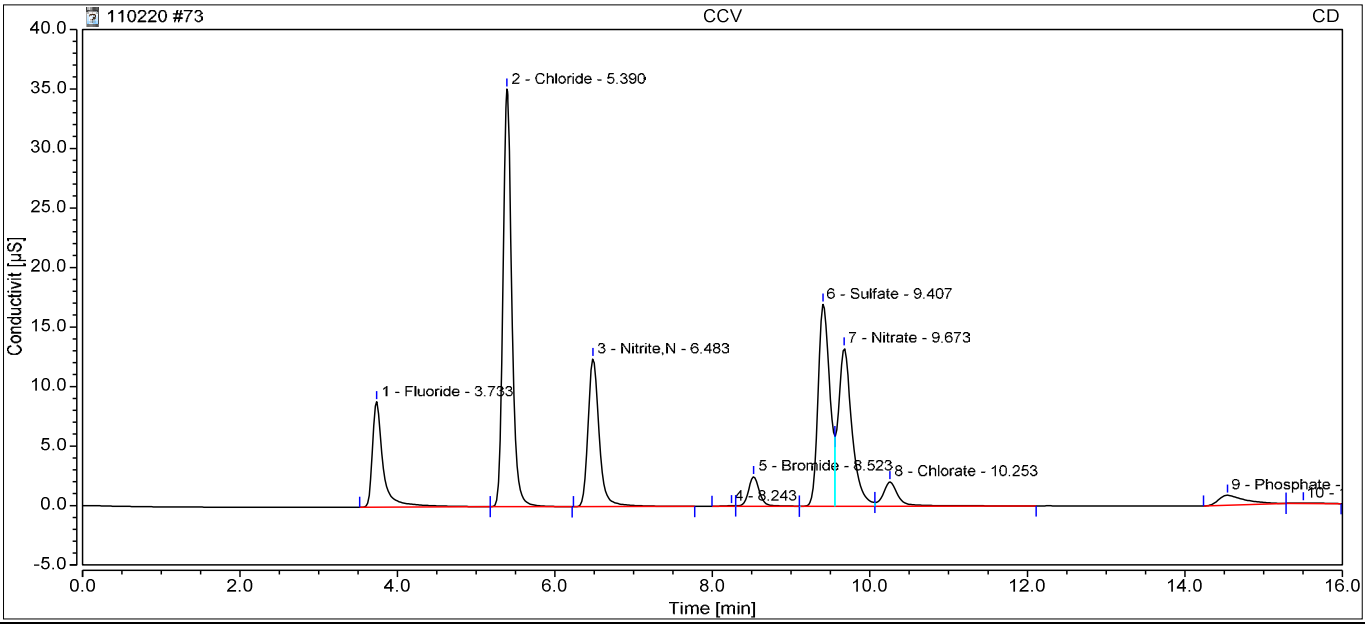
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.002	0.0178	0.0178	1.0000
6	5.40	Chloride	BMB	0.859	3.6990	3.6990	1.0000
8	6.53	Nitrite,N	BMB	0.008	n.a.	n.a.	1.0000
12	8.50	Bromide	M	0.975	9.5910	9.5910	1.0000
13	9.27	Sulfate	M	0.329	2.0655	2.0655	1.0000
15	9.84	Nitrate	M	0.136	0.1978	0.1978	1.0000
17	10.64	Chlorate	MB	0.091	0.7551	0.7551	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**2.400**		**16.33**	

73 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 04:43**	*Sample Weight:*	**1.0000**

Run Time:



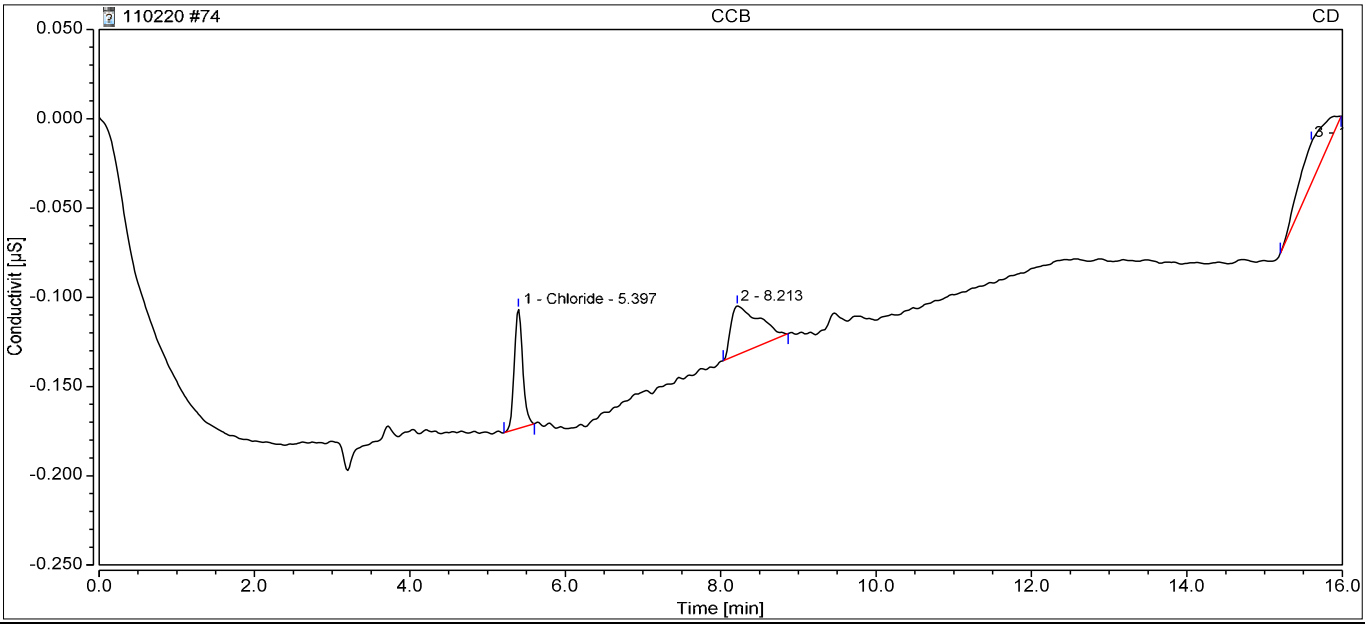
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.407	3.9911	3.9911	1.0000
2	5.39	Chloride	BMB	4.561	19.8713	19.8713	1.0000
3	6.48	Nitrite,N	BMB	2.064	4.3411	4.3411	1.0000
5	8.52	Bromide	M	0.409	3.9779	3.9779	1.0000
6	9.41	Sulfate	M	2.926	18.2839	18.2839	1.0000
7	9.67	Nitrate	M	2.670	4.3143	4.3143	1.0000
8	10.25	Chlorate	MB	0.460	4.3734	4.3734	1.0000
9	14.54	Phosphate	BMB	0.320	2.0291	2.0291	1.0000
Total:			**0.000**	**14.817**		**61.18**	

74 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 05:01**	*Sample Weight:*	**1.0000**

Run Time:



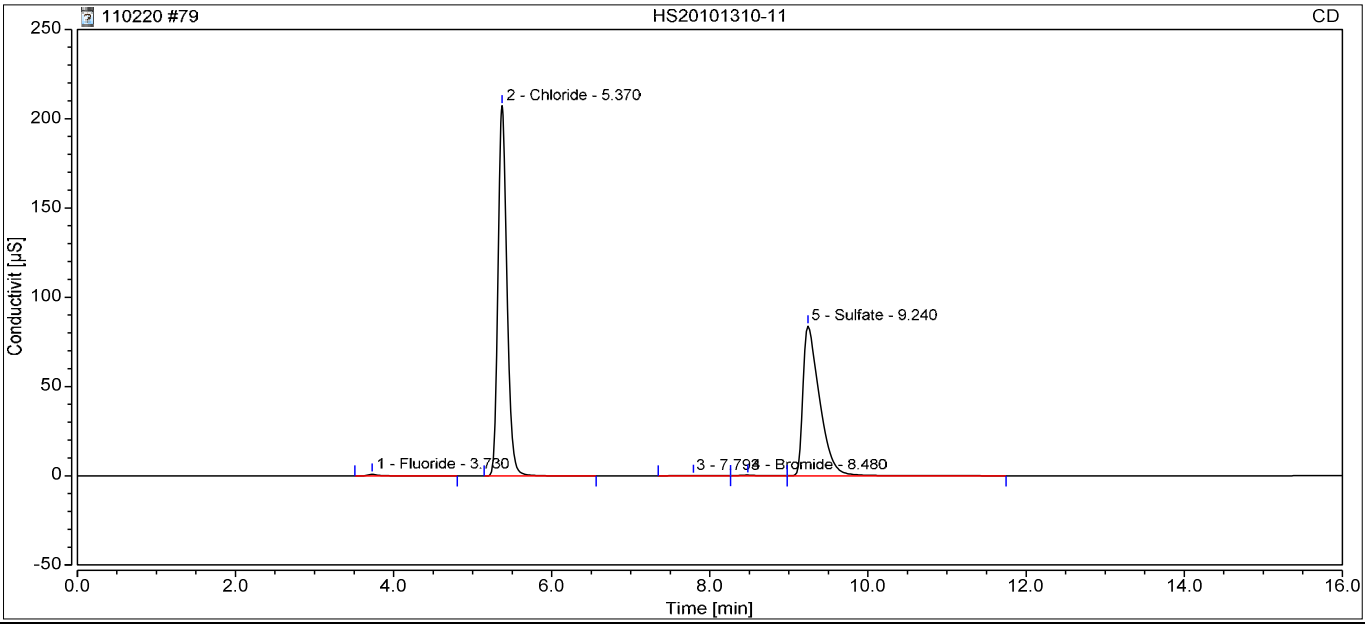
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.008	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.008**		**0.00**	

79 HS20101310-11

Sample Name:	**HS20101310-11**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 06:31**	*Sample Weight:*	**1.0000**

Run Time:



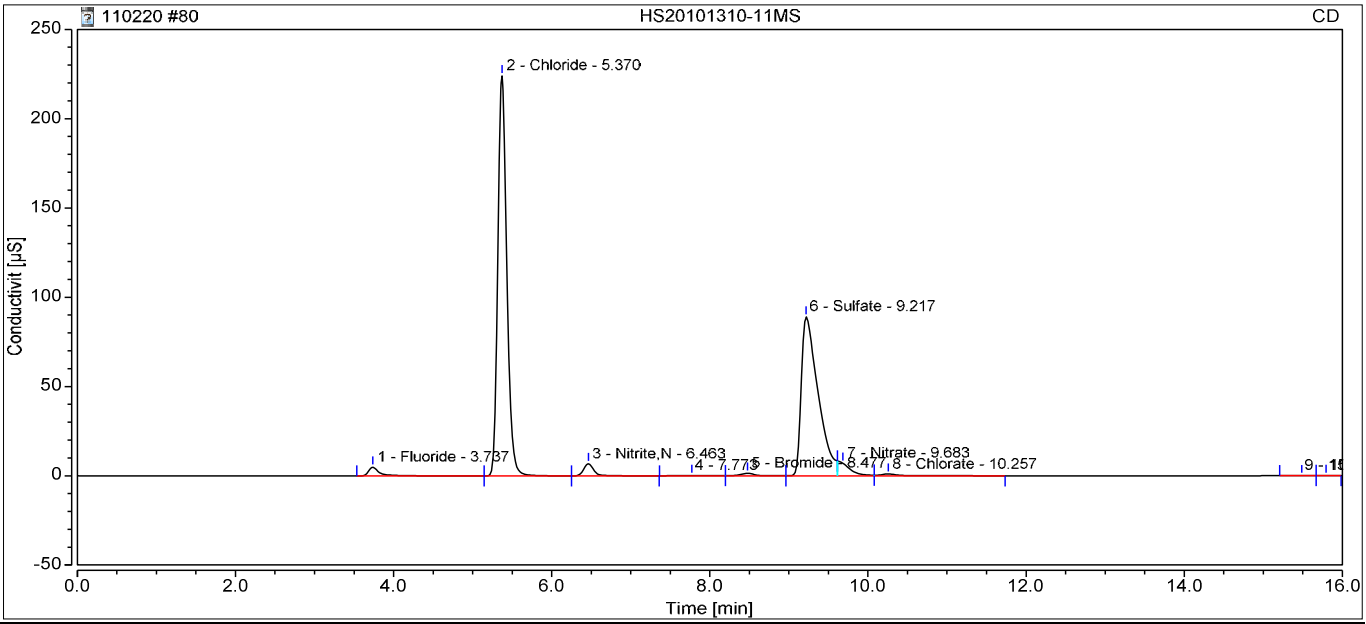
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.181	0.5219	0.5219	1.0000
2	5.37	Chloride	BMB	26.906	117.5115	117.5115	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.48	Bromide	M	0.137	1.2739	1.2739	1.0000
5	9.24	Sulfate	MB	20.596	128.6129	128.6129	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**47.820**		**247.92**	

80 HS20101310-11MS

Sample Name:	**HS20101310-11MS**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 06:49**	*Sample Weight:*	**1.0000**

Run Time:



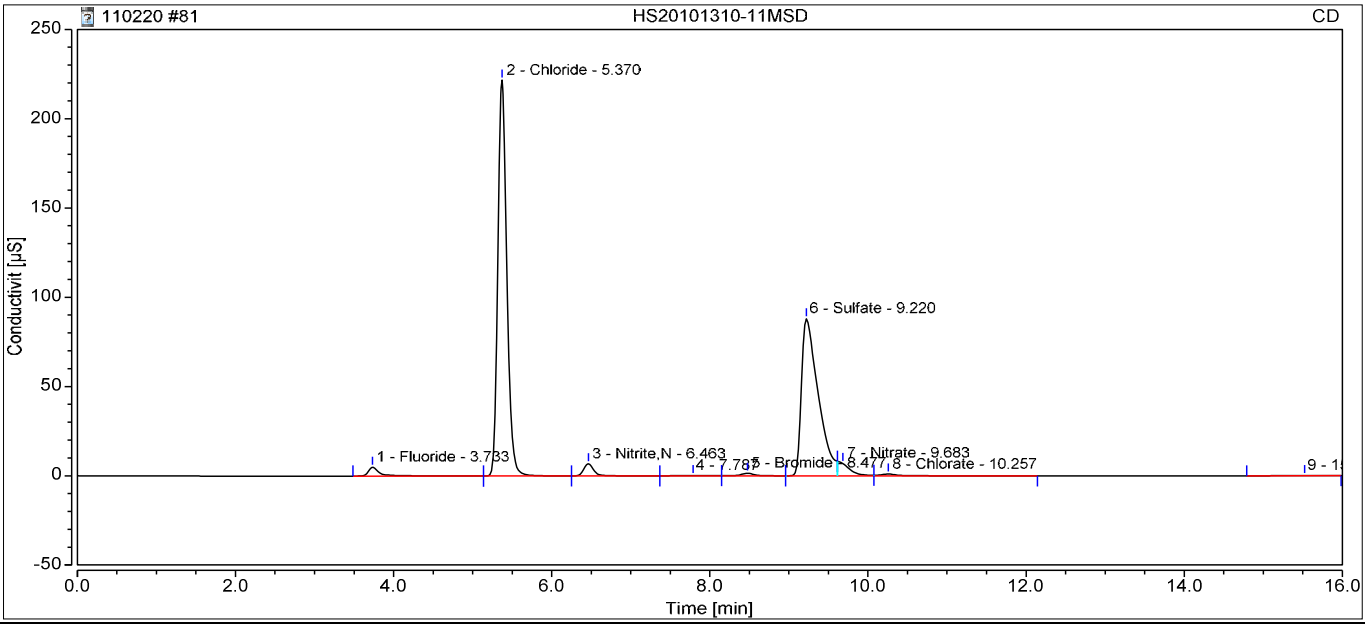
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.854	2.4259	2.4259	1.0000
2	5.37	Chloride	BMB	29.112	127.1522	127.1522	1.0000
3	6.46	Nitrite,N	BMB	1.022	2.1309	2.1309	1.0000
5	8.48	Bromide	M	0.322	3.1114	3.1114	1.0000
6	9.22	Sulfate	M	22.026	137.5388	137.5388	1.0000
7	9.68	Nitrate	M	1.405	2.2594	2.2594	1.0000
8	10.26	Chlorate	MB	0.278	2.5865	2.5865	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**55.019**		**277.21**	

81 HS20101310-11MSD

Sample Name:	**HS20101310-11MSD**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 07:07**	*Sample Weight:*	**1.0000**

Run Time:



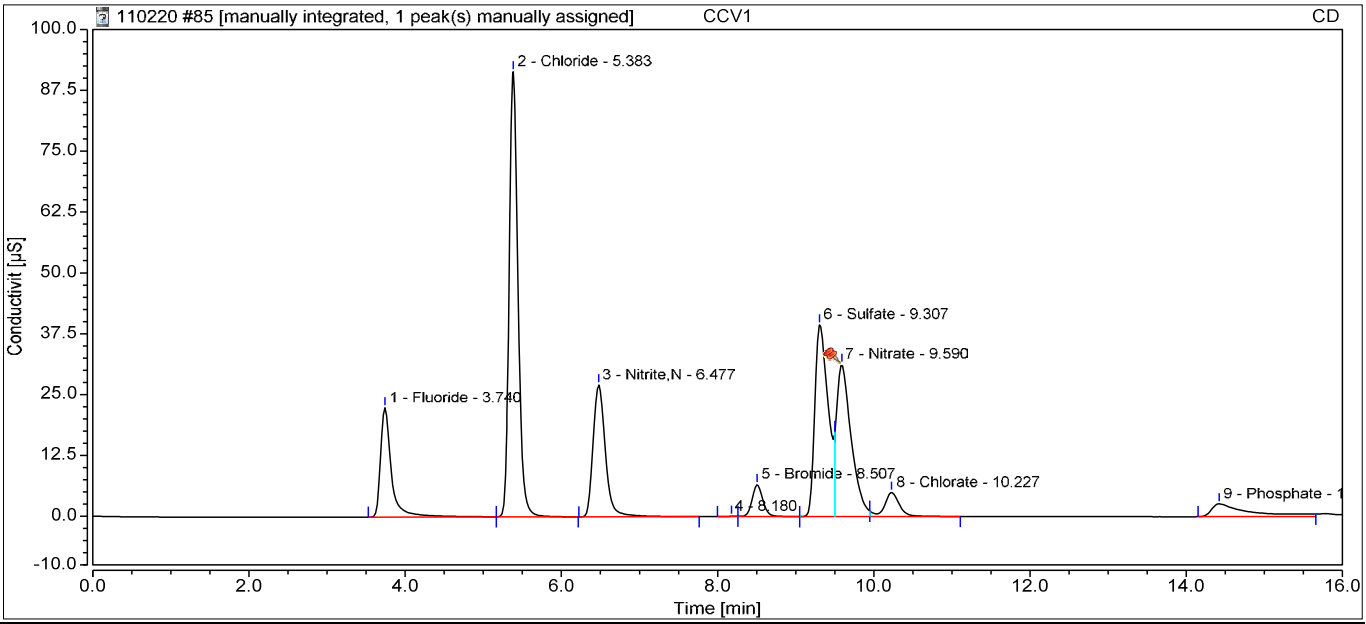
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.837	2.3791	2.3791	1.0000
2	5.37	Chloride	BMB	28.776	125.6800	125.6800	1.0000
3	6.46	Nitrite,N	BMB	1.011	2.1077	2.1077	1.0000
5	8.48	Bromide	M	0.330	3.1910	3.1910	1.0000
6	9.22	Sulfate	M	21.664	135.2784	135.2784	1.0000
7	9.68	Nitrate	M	1.358	2.1830	2.1830	1.0000
8	10.26	Chlorate	MB	0.289	2.6969	2.6969	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**54.265**		**273.52**	

85 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 08:19**	*Sample Weight:*	**1.0000**

Run Time:



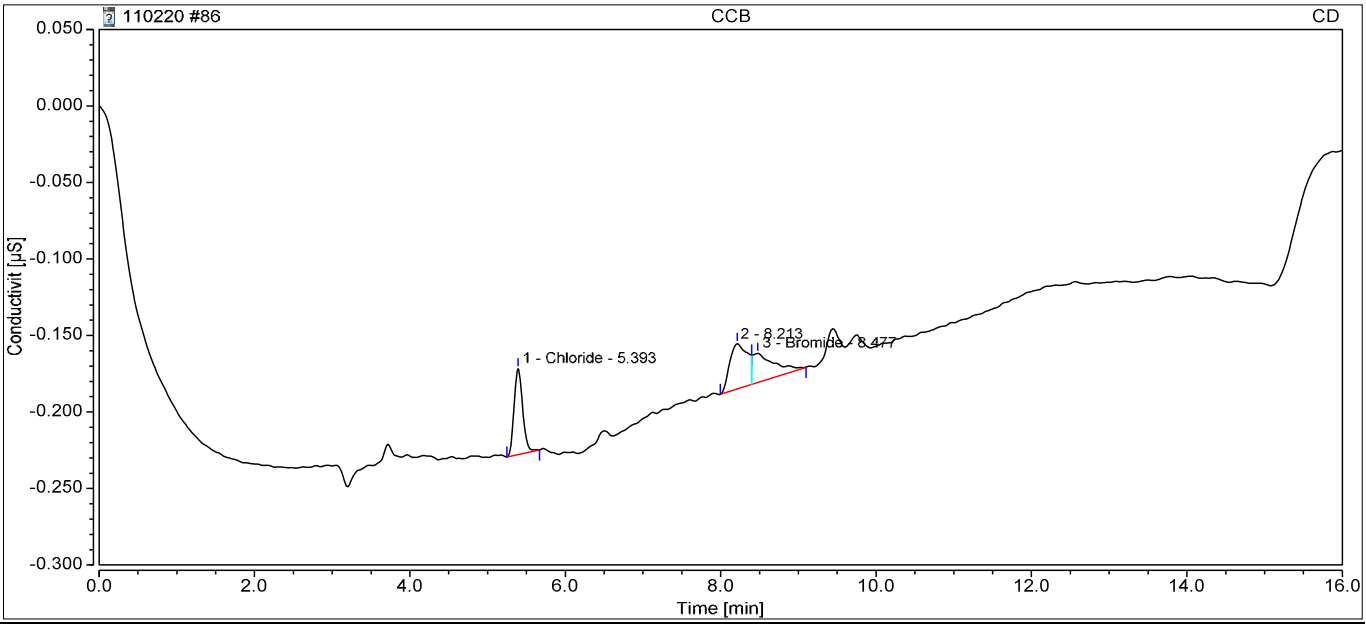
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.618	10.2417	10.2417	1.0000
2	5.38	Chloride	BMB	11.912	51.9929	51.9929	1.0000
3	6.48	Nitrite,N	BMB	4.968	10.5078	10.5078	1.0000
5	8.51	Bromide	M *	1.058	10.4121	10.4121	1.0000
6	9.31	Sulfate	M *	7.929	49.5173	49.5173	1.0000
7	9.59	Nitrate	M *^	6.666	10.8076	10.8076	1.0000
8	10.23	Chlorate	MB*	1.108	10.7343	10.7343	1.0000
9	14.42	Phosphate	BM *	1.453	7.8616	7.8616	1.0000
Total:			**0.000**	**38.712**		**162.08**	

86 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 08:55**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.007	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.48	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.00**	

HS20101079 Wet Chem Raw Data (ALK_W 2320B)

ALS WO# HS20101079

Report Date: 10/22/2020 : 5:44

PC-TitratION PLUS
Calibration Report

Calibration Record # 2293

Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	10/22/2020
Channel	1	Time	5:44 PM
Probe Type	pH	Temperature	294.94 K 21.79 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-58.307	CorrCoeff	0.9999
Intercept	4.517	Equation:	Y = (-58.307) X + (4.517)

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-58.307	-65.00	-53.00
Intercept	4.517	-100.00	100.00
Correlation Coefficient	0.9999	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	180.78
	7.00	1.83
	10.00	-169.06

#371120 (A)
#371121 (B) Verified by QC 10/23/2020
#371123 (C)

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Report Date: 10/23/2020 : 5:40 AM

PC-TitratION PLUS
Water Analysis Report

Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
ICV-PH	10/22/2020	6:13 PM	21.77	-1.00	6.03	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
TAP WATER	10/22/2020	6:20 PM	21.86	-1.00	7.97	.00	286.10	286.10	.00	.00	.00	2.72	2.72
WBLKW1-201022	10/22/2020	6:26 PM	21.82	-1.00	5.87	.00	.61	.61	.00	.00	.00	.02	.02
LCS1-201022	10/22/2020	6:34 PM	21.87	-1.00	10.94	522.50	1,027.65	.00	1,010.29	17.35	4.98	9.79	9.79
LCSD1-201022	10/22/2020	6:43 PM	21.83	-1.00	10.94	525.44	1,021.35	.00	991.82	29.53	5.00	9.73	9.73
HS20100751-01	10/22/2020	6:53 PM	21.83	-1.00	8.62	56.05	1,247.81	1,135.72	112.09	.00	.53	11.88	11.88
HS20100751-01DUP	10/22/2020	7:02 PM	21.76	-1.00	8.62	56.73	1,222.66	1,109.19	113.47	.00	.54	11.64	11.64
HS20100751-02	10/22/2020	7:12 PM	21.76	-1.00	8.52	35.85	1,190.88	1,119.17	71.70	.00	.34	11.34	11.34
HS20100751-03	10/22/2020	7:22 PM	21.82	-1.00	8.60	60.11	1,319.35	1,199.12	120.23	.00	.57	12.57	12.57
HS20100752-01	10/22/2020	7:30 PM	21.74	-1.00	8.63	15.00	410.23	380.23	30.00	.00	.14	3.91	3.91
HS20100752-02	10/22/2020	7:36 PM	21.71	-1.00	8.69	14.40	324.16	295.36	28.80	.00	.14	3.09	3.09
CCV-PH	10/22/2020	7:39 PM	21.74	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	7:47 PM	21.67	-1.00	10.92	524.39	1,014.94	.00	981.10	33.84	4.99	9.67	9.67
DI RINSE	10/22/2020	7:52 PM	21.71	-1.00	6.10	.00	.64	.64	.00	.00	.00	.02	.02
HS20101004-01	10/22/2020	7:57 PM	21.69	-1.00	5.72	.00	.28	.28	.00	.00	.00	.02	.02
HS20100752-03	10/22/2020	8:04 PM	21.69	-1.00	8.67	13.51	315.25	288.23	27.02	.00	.13	3.00	3.00
HS20100752-04	10/22/2020	8:11 PM	21.63	-1.00	8.70	15.02	328.40	298.36	30.03	.00	.14	3.13	3.13
HS20100752-05	10/22/2020	8:18 PM	21.61	-1.00	8.65	12.54	302.35	277.27	25.08	.00	.12	2.88	2.88
HS20100752-06	10/22/2020	8:25 PM	21.64	-1.00	8.66	13.19	314.54	288.17	26.37	.00	.13	3.00	3.00
HS20100753-01	10/22/2020	8:32 PM	21.73	-1.00	8.01	.00	259.48	259.48	.00	.00	.00	2.47	2.47
HS20100753-02	10/22/2020	8:41 PM	21.80	-1.00	8.55	45.04	1,157.44	1,067.37	90.07	.00	.43	11.02	11.02
HS20100753-03	10/22/2020	8:52 PM	21.83	-1.00	8.52	61.26	1,486.04	1,363.51	122.52	.00	.58	14.15	14.15
HS20100753-04	10/22/2020	9:02 PM	21.85	-1.00	8.53	50.38	1,323.53	1,222.77	100.76	.00	.48	12.61	12.61
CCV-PH	10/22/2020	9:04 PM	21.77	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	9:13 PM	21.70	-1.00	10.88	524.85	1,021.32	.00	992.93	28.39	5.00	9.73	9.73
DI RINSE	10/22/2020	9:18 PM	21.80	-1.00	6.07	.00	.50	.50	.00	.00	.00	.02	.02
HS20100753-05	10/22/2020	9:25 PM	21.80	-1.00	8.60	11.89	332.72	308.94	23.79	.00	.11	3.17	3.17

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20100753-06	10/22/2020	9:35 PM	21.83	-1.00	8.63	69.99	1,367.62	1,227.65	139.98	.00	.67	13.02	13.02
HS20101062-01	10/22/2020	9:42 PM	21.96	-1.00	8.69	16.10	357.91	325.71	32.20	.00	.15	3.41	3.41
HS20101062-02	10/22/2020	9:49 PM	21.92	-1.00	8.67	15.46	382.04	351.12	30.92	.00	.15	3.64	3.64
HS20101062-03	10/22/2020	9:56 PM	21.87	-1.00	8.59	10.38	302.43	281.67	20.77	.00	.10	2.88	2.88
HS20101062-04	10/22/2020	10:04 PM	21.90	-1.00	8.71	21.18	472.53	430.17	42.36	.00	.20	4.50	4.50
WBLKW2-201022	10/22/2020	10:09 PM	21.89	-1.00	5.91	.00	.30	.30	.00	.00	.00	.02	.02
WLCS2-201022	10/22/2020	10:17 PM	21.82	-1.00	10.86	512.91	1,013.18	.00	1,000.55	12.64	4.88	9.65	9.65
CCV-PH	10/22/2020	10:20 PM	21.74	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCVALK	10/22/2020	10:29 PM	21.66	-1.00	10.85	514.31	1,015.64	.00	1,002.66	12.98	4.90	9.67	9.67
DI RINSE	10/22/2020	10:34 PM	21.79	-1.00	6.09	.00	.68	.68	.00	.00	.00	.02	.02
WLCSD2-201022	10/22/2020	10:42 PM	21.85	-1.00	10.86	513.81	1,016.23	.00	1,004.83	11.39	4.89	9.68	9.68
HS20101079-03	10/22/2020	10:49 PM	21.79	-1.00	7.28	.00	351.33	351.33	.00	.00	.00	3.35	3.35
HS20101079-03DUP	10/22/2020	10:55 PM	21.74	-1.00	7.18	.00	343.94	343.94	.00	.00	.00	3.28	3.28
HS20101079-01	10/22/2020	11:02 PM	21.66	-1.00	7.07	.00	516.66	516.66	.00	.00	.00	4.92	4.92
HS20101062-05	10/22/2020	11:09 PM	21.67	-1.00	8.64	10.74	284.62	263.15	21.47	.00	.10	2.71	2.71
HS20100916-02	10/22/2020	11:14 PM	21.67	-1.00	6.77	.00	85.48	85.48	.00	.00	.00	.81	.81
HS20101043-01	10/22/2020	11:22 PM	21.67	-1.00	7.46	.00	819.67	819.67	.00	.00	.00	7.81	7.81
HS20101043-02	10/22/2020	11:30 PM	21.73	-1.00	7.62	.00	840.11	840.11	.00	.00	.00	8.00	8.00
HS20101043-03	10/22/2020	11:39 PM	21.85	-1.00	7.77	.00	947.38	947.38	.00	.00	.00	9.02	9.02
HS20101043-04	10/22/2020	11:46 PM	21.82	-1.00	8.15	.00	378.10	378.10	.00	.00	.00	3.60	3.60
CCV-PH	10/22/2020	11:48 PM	21.79	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	11:57 PM	21.70	-1.00	10.87	522.47	1,024.75	.00	1,004.56	20.19	4.98	9.76	9.76
DI RINSE	10/23/2020	12:02 AM	21.79	-1.00	6.04	.00	.61	.61	.00	.00	.00	.02	.02
HS20101043-05	10/23/2020	12:10 AM	21.71	-1.00	7.77	.00	878.85	878.85	.00	.00	.00	8.37	8.37
HS20101043-06	10/23/2020	12:18 AM	21.76	-1.00	7.94	.00	841.58	841.58	.00	.00	.00	8.02	8.02
HS20101043-07	10/23/2020	12:25 AM	21.74	-1.00	7.74	.00	541.25	541.25	.00	.00	.00	5.15	5.15
HS20101043-08	10/23/2020	12:33 AM	21.76	-1.00	7.69	.00	697.46	697.46	.00	.00	.00	6.64	6.64
HS20101043-09	10/23/2020	12:41 AM	21.85	-1.00	7.73	.00	594.28	594.28	.00	.00	.00	5.66	5.66
HS20101043-10	10/23/2020	12:48 AM	21.79	-1.00	7.74	.00	635.01	635.01	.00	.00	.00	6.05	6.05
HS20101043-11	10/23/2020	12:54 AM	21.82	-1.00	8.15	.00	366.37	366.37	.00	.00	.00	3.49	3.49

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20101101-01	10/23/2020	1:02 AM	21.77	-1.00	8.07	.00	809.43	809.43	.00	.00	.00	7.71	7.71
HS20101101-02	10/23/2020	1:09 AM	21.71	-1.00	7.92	.00	511.55	511.55	.00	.00	.00	4.87	4.87
CCV-PH	10/23/2020	1:12 AM	21.64	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	1:21 AM	21.61	-1.00	10.85	515.01	1,024.64	.00	1,019.27	5.37	4.90	9.76	9.76
DI RINSE	10/23/2020	1:26 AM	21.74	-1.00	6.05	.00	.32	.32	.00	.00	.00	.02	.02
HS20101101-03	10/23/2020	1:34 AM	21.85	-1.00	8.02	.00	773.96	773.96	.00	.00	.00	7.37	7.37
HS20101101-04	10/23/2020	1:41 AM	21.85	-1.00	7.89	.00	555.83	555.83	.00	.00	.00	5.29	5.29
HS20101101-05	10/23/2020	1:51 AM	21.79	-1.00	8.16	.00	1,224.26	1,224.26	.00	.00	.00	11.66	11.66
WBLKW3-201022	10/23/2020	1:56 AM	21.79	-1.00	5.94	.00	.81	.81	.00	.00	.00	.02	.02
LCS3-201022	10/23/2020	2:04 AM	21.67	-1.00	10.78	507.57	1,018.57	3.42	1,015.15	.00	4.83	9.70	9.70
LCSD3-201022	10/23/2020	2:14 AM	21.69	-1.00	10.78	500.15	1,010.07	9.77	1,000.29	.00	4.76	9.62	9.62
HS20101123-01	10/23/2020	2:20 AM	21.74	-1.00	7.30	.00	232.94	232.94	.00	.00	.00	2.22	2.22
HS20101123-01DUP	10/23/2020	2:26 AM	21.74	-1.00	7.30	.00	235.27	235.27	.00	.00	.00	2.24	2.24
HS20101123-04	10/23/2020	2:34 AM	21.69	-1.00	7.00	.00	877.42	877.42	.00	.00	.00	8.36	8.36
CCV-PH	10/23/2020	2:36 AM	21.74	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	2:45 AM	21.69	-1.00	10.81	504.63	1,025.68	16.42	1,009.26	.00	4.81	9.77	9.77
DI RINSE	10/23/2020	2:50 AM	21.64	-1.00	6.03	.00	.67	.67	.00	.00	.00	.02	.02
HS20101123-09	10/23/2020	2:57 AM	21.58	-1.00	7.13	.00	327.76	327.76	.00	.00	.00	3.12	3.12
HS20101063-01	10/23/2020	3:06 AM	21.57	-1.00	8.65	50.85	1,048.54	946.84	101.69	.00	.48	9.99	9.99
HS20101063-02	10/23/2020	3:13 AM	21.58	-1.00	8.57	10.03	284.46	264.39	20.06	.00	.10	2.71	2.71
HS20101063-03	10/23/2020	3:20 AM	21.56	-1.00	8.43	6.55	253.16	240.05	13.11	.00	.06	2.41	2.41
HS20101095-01	10/23/2020	3:27 AM	21.58	-1.00	8.66	13.84	318.99	291.31	27.68	.00	.13	3.04	3.04
HS20101095-02	10/23/2020	3:36 AM	21.71	-1.00	8.66	27.64	650.68	595.41	55.27	.00	.26	6.20	6.20
HS20101101-06	10/23/2020	3:43 AM	21.70	-1.00	7.90	.00	734.31	734.31	.00	.00	.00	6.99	6.99
HS20101101-07	10/23/2020	3:52 AM	21.69	-1.00	7.94	.00	1,029.11	1,029.11	.00	.00	.00	9.80	9.80
HS20101101-08	10/23/2020	4:01 AM	21.67	-1.00	7.79	.00	954.69	954.69	.00	.00	.00	9.09	9.09
CCV-PH	10/23/2020	4:03 AM	21.66	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	4:12 AM	21.56	-1.00	10.79	506.48	1,032.33	19.38	1,012.96	.00	4.82	9.83	9.83
DI RINSE	10/23/2020	4:17 AM	22.00	-1.00	6.04	.00	.43	.43	.00	.00	.00	.02	.02
HS20101101-09	10/23/2020	4:24 AM	21.77	-1.00	7.98	.00	512.34	512.34	.00	.00	.00	4.88	4.88

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20100855-01	10/23/2020	4:31 AM	21.80	-1.00	8.53	8.94	256.08	238.19	17.89	.00	.09	2.44	2.44
HS20100855-02	10/23/2020	4:38 AM	22.46	-1.00	8.53	7.71	243.00	227.57	15.43	.00	.07	2.31	2.31
HS20100855-03	10/23/2020	4:45 AM	22.84	-1.00	8.69	12.89	273.85	248.06	25.79	.00	.12	2.61	2.61
HS20100855-04	10/23/2020	4:51 AM	23.12	-1.00	8.73	14.90	297.38	267.58	29.80	.00	.14	2.83	2.83
HS20100855-05	10/23/2020	4:58 AM	23.28	-1.00	8.62	10.67	269.85	248.51	21.34	.00	.10	2.57	2.57
HS20100855-06	10/23/2020	5:05 AM	23.49	-1.00	8.65	10.91	268.00	246.18	21.82	.00	.10	2.55	2.55
HS20100855-07	10/23/2020	5:12 AM	23.72	-1.00	8.37	3.96	237.50	229.57	7.93	.00	.04	2.26	2.26
HS20100996-01DF500	10/23/2020	5:21 AM	23.83	-1.00	11.45	266.55	459.45	.00	385.80	73.65	2.54	4.38	4.38
CCV-PH	10/23/2020	5:23 AM	23.96	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	5:32 AM	23.99	-1.00	10.75	503.19	1,036.38	30.00	1,006.38	.00	4.79	9.87	9.87
DI RINSE	10/23/2020	5:37 AM	24.35	-1.00	6.03	.00	.65	.65	.00	.00	.00	.02	.02

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Batch ID Exception Report

Batch ID: R371120
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte		Qualifier	
SAMP	0	SAMP		23 Oct 2020 8:45 AM	1
	X	No exceptions found			

Batch ID Exception Report

Batch ID: R371121
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte	Qualifier		
SAMP	0	SAMP		23 Oct 2020 8:54 AM	1
	X	No exceptions found			

Batch ID Exception Report

Batch ID: R371123
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte	Qualifier		
SAMP	0	SAMP		23 Oct 2020 9:01 AM	1

X No exceptions found

HS20101079 ALS Kelso Level IV Report K2009599

ALS WO# HS20101079

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November 06, 2020

Analytical Report for Service Request No: K2009599

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **K2009599.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009599
Date Received: 10/22/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 10/22/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2009599

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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14982**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

QC Level: DOD IV (DoD Data Package)

RIGHT SOLUTIONS | RIGHT PARTNER

Received by NRedersen ALS 10/22/20 1000

K2009599

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14982**

Relinquished By: _____ Date/Time: 10/21/2020 1800

Received By: _____ Date/Time: 10/22/20 1000

Cooler ID(s): _____ Temperature(s): _____

PM KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K20 09599

Received: 10/22/20 Opened: 10/22/20 By: AR Unloaded: 10/22/20 By: AR

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
0.7	—	IR01	14982	—	—	1891 8881 8403	

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16EW01-201020	K2009599-001	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW49-201020	K2009599-002	**3.74**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW48-201020	K2009599-003	**8.44**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW51-201020	K2009599-004	**4.52**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW08-201020	K2009599-005	**332**	5.0	2.0	0.7	10	11/03/20 11:36	
Method Blank	K2009599-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009599-003DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	8.44	8.47	8.46	<1	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW48-201020	**Units:**	mg/L
Lab Code:	K2009599-003	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009599-003MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	8.44	30.5	25.0	88	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009599
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009599-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009599
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

General Chemistry

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Work Request # Original ( ) K2009134, 9255, 9599, 9641, 9670

Tier: II II IV IV II

Date Analyzed: 11.3.20

Analyst: MAS Run # 701641

Analysis: SM 5310C/TOCT

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS:

-Rpd between source & dup sample is high but both results are below 5x the MRL

Final Approved by: _____ Date: 11/5/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2009134-002	Carbon, Total Organic	N/A		Water	0.64 mg/L	10 mL	64 mg/L	100	7	50			11/3/20 11:36:00	N	II
K2009134-003	Carbon, Total Organic	N/A		Water	0.36 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009134-004	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009255-001	Carbon, Total Organic	N/A		Ground Water	31.28 mg/L	10 mL	31.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-002	Carbon, Total Organic	N/A		Ground Water	14.47 mg/L	10 mL	14.5 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-003	Carbon, Total Organic	N/A		Ground Water	14.31 mg/L	10 mL	14.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009599-001	Carbon, Total Organic	N/A		Ground Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-002	Carbon, Total Organic	N/A		Ground Water	3.74 mg/L	10 mL	3.74 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-003	Carbon, Total Organic	N/A		Ground Water	8.44 mg/L	10 mL	8.44 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009599-004	Carbon, Total Organic	N/A		Ground Water	4.52 mg/L	10 mL	4.52 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-005	Carbon, Total Organic	N/A		Ground Water	33.24 mg/L	10 mL	332 mg/L	10	0.7	5.0			11/3/20 11:36:00	N	IV
K2009641-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009641-002	Carbon, Total Organic	N/A		Ground Water	14.39 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-003	Carbon, Total Organic	N/A		Ground Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-004	Carbon, Total Organic	N/A		Ground Water	3.98 mg/L	10 mL	3.98 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-005	Carbon, Total Organic	N/A		Ground Water	2.70 mg/L	10 mL	2.70 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-006	Carbon, Total Organic	N/A		Ground Water	2.67 mg/L	10 mL	2.67 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-007	Carbon, Total Organic	N/A		Ground Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009670-001	Carbon, Total Organic	N/A		Water	12.78 mg/L	10 mL	12.8 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-01	Carbon, Total Organic	CCV		Water	25.74 mg/L	10 mL	25.7 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-02	Carbon, Total Organic	CCV		Water	26.06 mg/L	10 mL	26.1 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-03	Carbon, Total Organic	CCV		Water	25.82 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-04	Carbon, Total Organic	CCV		Water	25.86 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2017240-10	Carbon, Total Organic	LCS		Water	24.00 mg/L	10 mL	24.0 mg/L	1	0.07	0.50	96		11/3/20 11:36:00	N	II
KQ2017240-11	Carbon, Total Organic	MS	K2009641-001	Ground Water	26.31 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	102		11/3/20 11:36:00	N	IV
KQ2017240-12	Carbon, Total Organic	DUP	K2009641-001	Ground Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50		94*	11/3/20 11:36:00	N	IV
KQ2017240-13	Carbon, Total Organic	MS	K2009599-003	Ground Water	30.52 mg/L	10 mL	30.5 mg/L	1	0.07	0.50	88		11/3/20 11:36:00	N	IV
KQ2017240-14	Carbon, Total Organic	DUP	K2009599-003	Ground Water	8.47 mg/L	10 mL	8.47 mg/L	1	0.07	0.50		<1	11/3/20 11:36:00	N	IV
KQ2017240-15	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-16	Carbon, Total Organic	CCV		Ground Water	25.81 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-17	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-18	Carbon, Total Organic	CCV		Ground Water	25.87 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Fusion Report - 11032020
Tuesday, November 03, 2020 11:36 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
*	(clean)		Clean	2020/11/03 11:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.77	29.98	16.21	49.60	05:24
2	TC Clean	39.08	52.21	13.13	50.34	04:05
3	TC Clean	8.61	21.95	13.34	50.36	03:51
4	TC Clean	10.08	23.09	13.01	50.34	03:51

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
*	(clean)		Clean	2020/11/03 11:58

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.19	13.34	13.15	49.82	05:24
2	TC Clean	12.57	25.54	12.97	50.09	04:01
3	TC Clean	5.95	18.94	12.99	50.33	03:49
4	TC Clean	8.24	21.10	12.85	50.24	03:47

Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 12:20

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.36	13.22	12.86	49.50	05:11
2	TC Clean	11.19	24.11	12.92	50.30	04:04
3	TC Clean	5.27	18.13	12.86	50.08	03:46
4	TC Clean	8.34	21.24	12.90	50.07	03:45

Sample Type: Blank (Creating v1471) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/11/03 12:49

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.46	22.30	12.83	49.38	05:13
2	TC Clean	11.94	24.85	12.91	50.24	04:06
3	TC Clean	8.41	21.21	12.79	50.08	03:56
4	TC Clean	8.14	20.76	12.62	50.22	03:56
5	Reagent Blank	13.63	26.37	12.75	50.10	05:06
6	Acid Blank	0.79	13.42	12.63	49.86	05:30

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1929 ppm	0.0000 ppm	0.0000%	2020/11/03 13:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1929	1.9285	11.16	23.76	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0291 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0291	260.2915	192.48	205.17	12.69	50.55	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.44	21.27	12.82	50.57	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 14:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.45	21.04	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.3615 ppm (PASS)	0.0000 ppm	0%	2020/11/03 14:22

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

	Type									
C	TOC	25.0 ppm	1	24.3615	243.6154	180.78	193.55	12.77	50.51	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3202 ppm	0.0000 ppm	0.0000%	2020/11/03 14:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3202	3.2015	12.06	24.80	12.74	50.46	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2009468-008 DOC	0.7621 ppm	0.0319 ppm	4.1800%	2020/11/03 14:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7396	7.3955	15.00	27.80	12.80	50.44	10:26
2	TOC	0.7846	7.8460	15.32	27.92	12.60	50.56	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2009501-001 DOC	10.6458 ppm	0.0354 ppm	0.3300%	2020/11/03 15:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.6708	106.7080	84.66	97.52	12.85	50.50	10:26
2	TOC	10.6208	106.2076	84.31	97.01	12.69	50.48	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2009501-003 DOC 4x	17.4630 ppm	0.0816 ppm	0.4700%	2020/11/03 15:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.4053	174.0525	131.91	144.74	12.83	50.51	10:27
2	TOC	17.5207	175.2072	132.72	145.57	12.86	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC)	CAS_salt_010711	CAS_salt_010711

(v1471) (v4) (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2009501-003DUP DOC 4x	17.0412 ppm	0.0286 ppm	0.1700%	2020/11/03 16:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.0614	170.6141	129.49	141.95	12.45	50.38	10:29
2	TOC	17.0209	170.2092	129.21	141.96	12.75	50.51	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2009501-003MS DOC 5x	40.6505 ppm	0.1104 ppm	0.2700%	2020/11/03 16:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	40.5725	405.7247	294.42	307.16	12.74	50.46	10:25
2	TOC	40.7286	407.2857	295.52	308.25	12.74	50.41	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2009560-001 DOC	1.7795 ppm	0.0095 ppm	0.5300%	2020/11/03 17:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7862	17.8619	22.34	35.19	12.85	50.34	10:28
2	TOC	1.7728	17.7279	22.25	34.85	12.60	50.48	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2009560-002 DOC	0.4700 ppm	0.0203 ppm	4.3100%	2020/11/03 17:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4557	4.5572	13.01	25.84	12.83	50.43	10:28
2	TOC	0.4844	4.8438	13.21	26.02	12.81	50.39	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.7386 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7386	257.3862	190.44	203.18	12.73	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.77	20.63	12.85	50.36	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2009560-004 DOC	1.1781 ppm	0.0266 ppm	2.2600%	2020/11/03 18:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1592	11.5923	17.94	30.81	12.87	50.40	10:30
2	TOC	1.1969	11.9687	18.21	30.97	12.76	50.55	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2009560-005 DOC	0.9729 ppm	0.0276 ppm	2.8400%	2020/11/03 19:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9924	9.9244	16.77	29.26	12.49	50.48	10:28
2	TOC	0.9534	9.5338	16.50	29.20	12.71	50.43	10:26

Dilution	Blank Contribution	Method	Calibration

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2009560-006 DOC	0.7008 ppm	0.0281 ppm	4.0100%	2020/11/03 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6810	6.8096	14.59	27.49	12.90	50.41	10:27
2	TOC	0.7207	7.2073	14.87	27.57	12.70	50.40	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2009560-007 DOC	0.8376 ppm	0.0023 ppm	0.2800%	2020/11/03 20:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8359	8.3592	15.68	28.40	12.73	50.37	10:26
2	TOC	0.8392	8.3920	15.70	28.31	12.61	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2009560-008 DOC	0.5497 ppm	0.0073 ppm	1.3200%	2020/11/03 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5548	5.5480	13.70	26.46	12.75	50.39	10:25
2	TOC	0.5445	5.4453	13.63	26.56	12.93	50.36	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2009560-009 DOC	0.7137 ppm	0.0290 ppm	4.0700%	2020/11/03 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6932	6.9322	14.67	27.47	12.80	50.36	10:27
2	TOC	0.7343	7.3428	14.96	27.64	12.68	50.34	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2009599-001	14.3778 ppm	0.1881 ppm	1.3100%	2020/11/03 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.5108	145.1081	111.60	124.25	12.65	50.36	10:30
2	TOC	14.2448	142.4480	109.74	122.50	12.76	50.38	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2009599-002	3.7353 ppm	0.0174 ppm	0.4700%	2020/11/03 21:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7476	37.4761	36.10	48.70	12.60	50.34	10:27
2	TOC	3.7229	37.2295	35.93	48.72	12.79	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2009599-003	8.4434 ppm	0.2066 ppm	2.4500%	2020/11/03 22:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5895	85.8950	70.06	82.63	12.56	50.38	10:27
2	TOC	8.2973	82.9726	68.02	80.93	12.91	50.37	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2009599-003DUP	8.4682 ppm	0.1266 ppm	1.5000%	2020/11/03 22:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5577	85.5771	69.84	82.73	12.89	50.38	10:28
2	TOC	8.3787	83.7866	68.59	81.35	12.77	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0569 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:18

Pos	Base Analysis	ID	Rep	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run

	Type		#							Time
B	TOC	25 ppm	1	26.0569	260.5694	192.68	205.51	12.83	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.73	12.69	50.35	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 23:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.49	20.24	12.75	50.34	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.0002 ppm (PASS)	0.0000 ppm	0%	2020/11/04 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.0002	240.0016	178.25	191.05	12.80	50.33	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2009599-003MS	30.5199 ppm	0.2792 ppm	0.9100%	2020/11/04 00:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.7173	307.1734	225.29	237.88	12.59	50.33	10:29
2	TOC	30.3225	303.2246	222.52	235.37	12.85	50.33	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2009599-004	4.5248 ppm	0.1496 ppm	3.3100%	2020/11/04 00:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6306	46.3059	42.29	55.23	12.93	50.33	10:26
2	TOC	4.4190	44.1904	40.81	53.60	12.79	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2009599-005 10x	33.2444 ppm	0.4726 ppm	1.4200%	2020/11/04 01:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.9103	329.1027	240.67	253.38	12.71	50.32	10:27
2	TOC	33.5786	335.7857	245.36	258.09	12.73	50.29	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2009641-001	5.3742 ppm	0.2819 ppm	5.2500%	2020/11/04 01:40

-NH carry over

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.5736	55.7360	48.91	61.56	12.66	50.29	10:31
2	TOC	5.1749	51.7487	46.11	59.07	12.95	50.30	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2009641-001DUP	1.9856 ppm	0.0348 ppm	1.7500%	2020/11/04 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.0101	20.1014	23.91	36.68	12.77	50.31	10:28
2	TOC	1.9610	19.6096	23.57	36.34	12.78	50.31	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	26	TOC	K2009641-001MS	26.3108 ppm	0.0841 ppm	0.3200%	2020/11/04 02:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3703	263.7026	194.79	207.61	12.82	50.26	10:31
2	TOC	26.2514	262.5137	193.96	207.12	13.16	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	27	TOC	K2009641-002	14.3894 ppm	0.3804 ppm	2.6400%	2020/11/04 03:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6584	146.5836	112.64	125.62	12.99	50.28	10:27
2	TOC	14.1204	141.2035	108.86	121.75	12.89	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	28	TOC	K2009641-003	7.3487 ppm	0.0012 ppm	0.0200%	2020/11/04 03:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3496	73.4955	61.37	74.32	12.95	50.27	10:30
2	TOC	7.3478	73.4784	61.36	74.16	12.81	50.28	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	29	TOC	K2009641-004	3.9775 ppm	0.0623 ppm	1.5700%	2020/11/04 04:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0216	40.2160	38.02	50.81	12.78	50.28	10:30
2	TOC	3.9335	39.3350	37.40	50.11	12.71	50.27	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2009641-005	2.7030 ppm	0.0247 ppm	0.9100%	2020/11/04 04:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6856	26.8557	28.65	41.18	12.53	50.25	10:26
2	TOC	2.7205	27.2050	28.90	41.84	12.95	50.26	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2009641-006	2.6683 ppm	0.0241 ppm	0.9000%	2020/11/04 04:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6853	26.8529	28.65	41.25	12.61	50.25	10:25
2	TOC	2.6512	26.5122	28.41	41.25	12.84	50.27	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2009641-007	7.3631 ppm	0.0302 ppm	0.4100%	2020/11/04 05:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3417	73.4171	61.31	74.17	12.86	50.27	10:28
2	TOC	7.3845	73.8448	61.61	74.50	12.88	50.25	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8156 ppm (PASS)	0.0000 ppm	0%	2020/11/04 05:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8156	258.1560	190.98	203.77	12.79	50.25	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 06:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.53	20.42	12.89	50.24	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2009670-001	12.7753 ppm	0.0369 ppm	0.2900%	2020/11/04 06:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.7493	127.4926	99.24	112.12	12.88	50.22	10:26
2	TOC	12.8014	128.0143	99.61	112.45	12.84	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2009255-001	31.2797 ppm	0.5426 ppm	1.7300%	2020/11/04 06:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.8960	308.9596	226.54	239.32	12.78	50.19	10:27
2	TOC	31.6633	316.6334	231.92	244.59	12.66	50.28	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2009255-002	14.4665 ppm	0.3169 ppm	2.1900%	2020/11/04 07:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6906	146.9057	112.86	125.76	12.90	50.28	10:27
2	TOC	14.2424	142.4238	109.72	122.66	12.95	50.32	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	36	TOC	K2009255-003	14.3057 ppm	0.2508 ppm	1.7500%	2020/11/04 07:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4830	144.8301	111.41	124.15	12.74	50.45	10:31
2	TOC	14.1283	141.2833	108.92	121.82	12.90	50.31	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2009134-002 100X	0.6368 ppm	0.0439 ppm	6.9000%	2020/11/04 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6678	6.6785	14.50	27.19	12.69	50.33	10:30
2	TOC	0.6057	6.0569	14.06	27.05	12.99	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2009134-003 100X	0.3611 ppm	0.0127 ppm	3.5200%	2020/11/04 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3521	3.5209	12.28	25.08	12.79	50.33	10:32
2	TOC	0.3700	3.7005	12.41	25.02	12.61	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	K2009134-004 100X	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.36	21.09	12.73	50.35	10:30
2	TOC	0.0000	0.0000	8.59	21.35	12.76	50.29	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	19.67	12.84	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.78	19.55	12.77	50.32	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1470	1.6077	0.0460	0.0000	0.0000	0.0000	2020/10/30 19:52	Fusion1 (Fusion1)
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v38	Calibration curve formula:	TOC: y = 7.015x + 9.892
Ver Creation:	2020/06/13 16:40	r^2 value:	TOC: r^2 = 0.99974
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 10:09

Fusion Report - 11032020
Wednesday, November 04, 2020 10:34 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v6)		
Comment:			

Report Results

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8577 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8577	258.5765	191.28	204.17	12.89	50.35	10:27

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.67	20.68	13.01	50.21	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met. (v4) (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml

UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 11:04

Fusion Report - 11042020A
Wednesday, November 04, 2020 12:16 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 14:04 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11042020A	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1)		
Comment:			

Report Results

Sample Type: Sample — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1022 ppm	0.0000 ppm	0.0000%	2020/11/04 12:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1022	1.0219	10.53	23.56	13.03	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8736 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8736	258.7362	191.39	204.35	12.96	50.46	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.94	12.89	50.39	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2009641-001	0.7150 ppm	0.0316 ppm	4.4100%	2020/11/04 13:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7373	7.3727	14.98	27.58	12.60	50.37	10:25
2	TOC	0.6926	6.9265	14.67	27.62	12.95	50.37	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

-Reported Value w/o carry over

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8075 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8075	258.0747	190.93	203.88	12.96	50.42	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.16	20.83	12.67	50.28	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC
Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 13:58

ALS Environmental

StarLIMS Run: 701641

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 19-GEN-8-55J 50 ppm LCS: 19-GEN-8-41K 25.0 ppm

ICAL Date: 6/16/2020

ICAL ID: 19-GEN-8-22-G

ICS ID: 19-GEN-8-35-K

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-55I 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-55K

21 % H3PO4: 19-GEN-08-55L

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: MAS	Date Analyzed: 11/3/2020
Reviewed By:	Date Reviewed: 11/5/20

HS20101079 - Sub Perch Report IV (E2001015)

ALS WO# HS20101079

October 26, 2020 Service Request No:E2001015

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101079

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001015.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001015
Project:	HS20101079	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Seven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD recoveries were outside control limits, Sample result is 10X greater than the spike amount.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001015
Project: HS20101079

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001015-001	16EW01-201020	10/20/2020	0745
E2001015-002	16WW49-201020	10/20/2020	0850
E2001015-003	16WW48-201020	10/20/2020	0955
E2001015-004	16WW51-201020	10/20/2020	1055
E2001015-005	16EW08-201020	10/20/2020	1145
E2001015-006	16EW04-201020	10/20/2020	1230
E2001015-007	16RW01-201020	10/20/2020	1315

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001015-001	16EW01-201020	Ground Water	10/20/20 0745	**IV**
E2001015-002	16WW49-201020	Ground Water	10/20/20 0850	**IV**
E2001015-003	16WW48-201020	Ground Water	10/20/20 0955	**IV**
E2001015-004	16WW51-201020	Ground Water	10/20/20 1055	**IV**
E2001015-005	16EW08-201020	Ground Water	10/20/20 1145	**IV**
E2001015-006	16EW04-201020	Ground Water	10/20/20 1230	**IV**
E2001015-007	16RW01-201020	Ground Water	10/20/20 1315	**IV**

Service Request Summary

Folder #: **E2001015**
Client Name: ALS Environmental - US
Project Name: HS20101079
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
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Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101079
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	Level II due 11/4,level IV 11/11
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

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Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101079
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101079-01**	**16EW01-201020**	**Groundwater**	**20 Oct 2020 07:45**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101079-02**	**16WW49-201020**	**Groundwater**	**20 Oct 2020 08:50**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101079-03**	**16WW48-201020**	**Groundwater**	**20 Oct 2020 09:55**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101079-04**	**16WW51-201020**	**Groundwater**	**20 Oct 2020 10:55**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101079-05**	**16EW08-201020**	**Groundwater**	**20 Oct 2020 11:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101079-06**	**16EW04-201020**	**Groundwater**	**20 Oct 2020 12:30**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101079-07**	**16RW01-201020**	**Groundwater**	**20 Oct 2020 13:15**
	SUB_Perch-6850			04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101079-03 = MS/MSD

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14981**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	J. Mascorro	Date/Time:	10/22/20
Received By:	[illegible]	Date/Time:	10/22/20 1105
Cooler ID(s):		Temperature(s):	

Cooler Receipt Form

ALS Environmental

Project Chemist: IH

Client/Project: ALS-HI

Thermometer ID: IR91

Date/Time Received: 10/22/20 Initials: IH

Date/Time Logged in: 10/22/20 Initials: IH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	IH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381
Team: Semivoa GCMS/GRIVERA
Prep WorkFlow: GenExt28Day
Prep Method: Method
Status: Prepped
Prep Date/Time: 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0745
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW01-201020	**Units:**	µg/L
Lab Code:	E2001015-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**27.5**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:50	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0850
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW49-201020	**Units:**	µg/L
Lab Code:	E2001015-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:58	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:39	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1055
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW51-201020	**Units:**	µg/L
Lab Code:	E2001015-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:36	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW08-201020	**Units:**	µg/L
Lab Code:	E2001015-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:44	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1230
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW04-201020	**Units:**	µg/L
Lab Code:	E2001015-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:52	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 1315
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW01-201020	**Units:**	µg/L
Lab Code:	E2001015-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 22:00	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079
Sample Matrix: Ground Water

Service Request: E2001015
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		16WW48-201020MS				16WW48-201020DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000533-04				EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Collected:**	10/20/20 0955
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW48-201020	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

Initial Calibration

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20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte	Curve Fit	Weighting		
Perchlorate	**Linear**	**Equal**	**R2 = 0.9997655579102110**	**Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

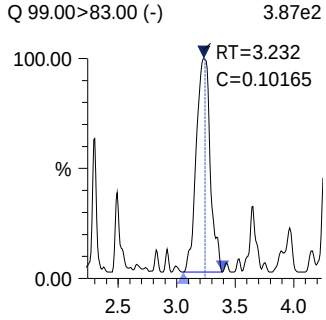
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

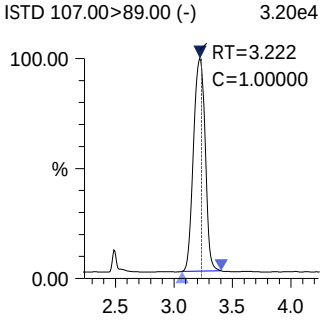
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

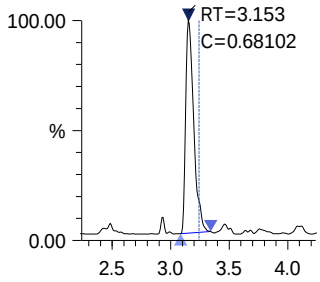
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

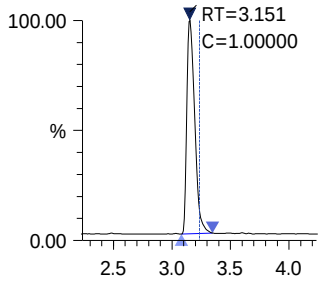
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

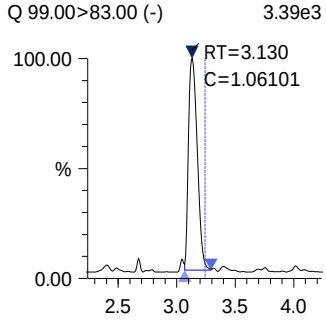
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

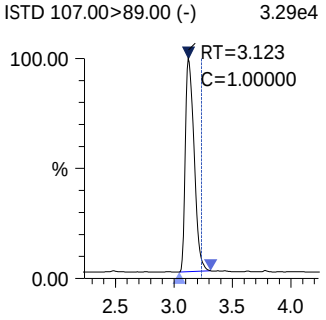
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

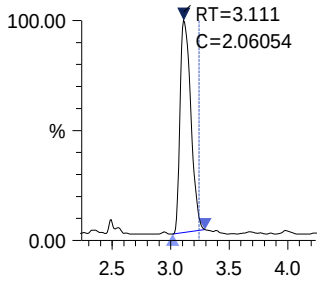
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

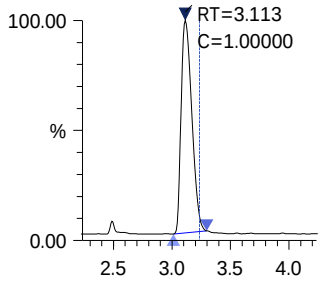
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

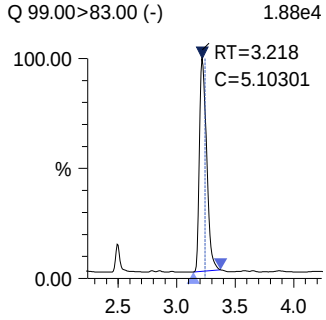
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

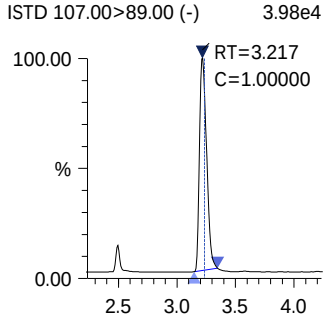
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 166486



ALS Group Houston

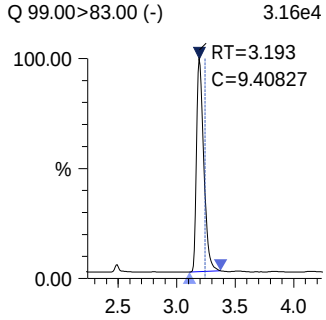
PERCHLORATE6

Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

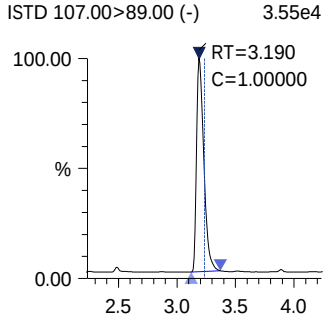
Perchlorate

Conc 9.40827
Area 136097



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693



ALS Group Houston

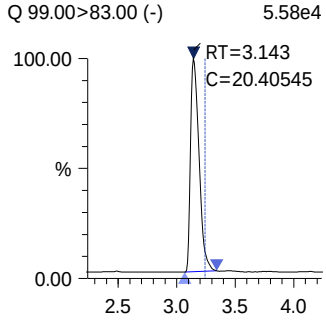
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

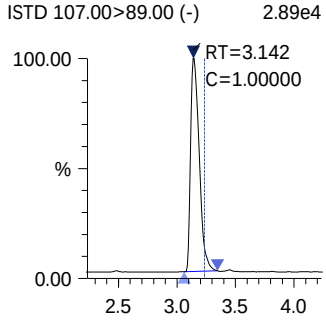
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

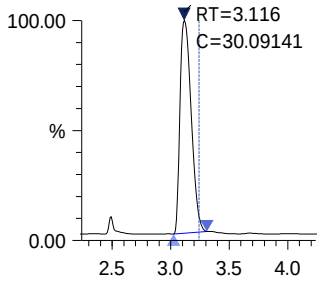
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

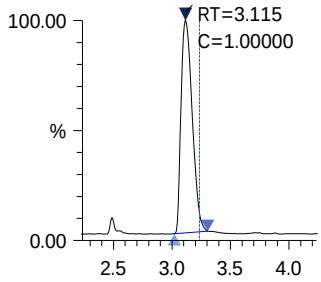
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

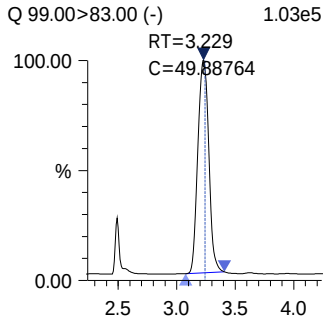
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

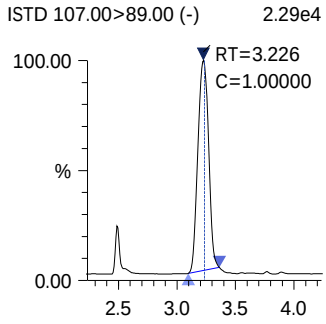
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

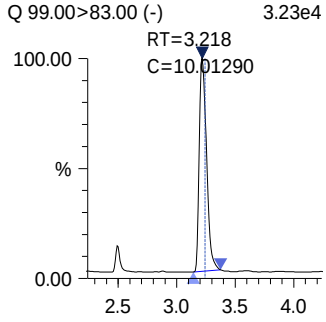
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

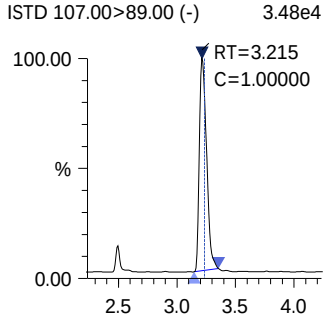
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201023

ALS Environmental

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201023_001	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:39
2	null		20201023_002	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:46
3	IB		20201023_003	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:04
4	IB		20201023_004	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:12
5	LODV		20201023_005	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:20
6	ICS		20201023_006	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:28
7	PERCHLORATE7		20201023_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 16:35
8	EQ2000532-01		20201023_008	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:43
9	EQ2000532-02		20201023_009	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:51
10	EQ2000532-03		20201023_010	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:59
11	E2001001-001		20201023_011	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:07
12	E2001001-002		20201023_012	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:15
13	E2001001-003		20201023_013	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:23
14	E2001001-004		20201023_014	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:31
15	E2001001-005		20201023_015	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:39
16	E2001001-006		20201023_016	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:47
17	E2001001-007		20201023_017	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:55
18	PERCHLORATE7		20201023_018	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 18:02
19	E2001001-008		20201023_019	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:10
20	E2001002-001		20201023_020	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:18
21	E2001003-001		20201023_021	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:26
22	E2001003-002		20201023_022	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:34
23	E2001003-003		20201023_023	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:42
24	E2001003-004		20201023_024	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:50
25	EQ2000533-01		20201023_025	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:58
26	EQ2000533-02		20201023_026	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:06
27	EQ2000533-03		20201023_027	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:13
28	EQ2000533-04		20201023_028	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:21
29	PERCHLORATE7		20201023_029	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 19:29
30	EQ2000533-05		20201023_030	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:37
31	E2001014-001		20201023_031	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:45
32	E2001014-002		20201023_032	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:53
33	E2001014-003		20201023_033	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:01
34	E2001014-004		20201023_034	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:09
35	E2001014-005		20201023_035	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:17
36	E2001014-006		20201023_036	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:24
37	E2001014-007		20201023_037	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:32
38	E2001014-008		20201023_038	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:40
39	E2001014-009		20201023_039	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:48
40	PERCHLORATE7		20201023_040	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 20:56
41	E2001014-010		20201023_041	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:04
42	E2001015-001		20201023_042	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:12
43	E2001015-002		20201023_043	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:20
44	E2001015-003		20201023_044	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:28
45	E2001015-004		20201023_045	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:36
46	E2001015-005		20201023_046	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:44
47	E2001015-006		20201023_047	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:52
48	E2001015-007		20201023_048	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:00
49	E2001016-001		20201023_049	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:07
50	PERCHLORATE7		20201023_050	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 22:15
51	null		20201023_051	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:20
52	null		20201023_052	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:25
53								
54								
55								

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒	3100807-05	10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:07
26								
27								
28								
29								
30								
31								
32								
33								
34								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_029

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.82	NA	NA	NA	-1.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_040

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.53	NA	NA	NA	-4.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_050

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.67	NA	NA	NA	-3.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.74	NA	NA	NA	-2.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.61	NA	NA	NA	-3.9	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_024

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/23/20 19:29

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_029	**Lab Code:**	EQ2000536-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-01	205,363	3.14

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/23/20 20:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_040	**Lab Code:**	EQ2000536-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-02	158,162	3.19
16WW51-201020	E2001015-004	85,324	3.11
16EW08-201020	E2001015-005	194,306	3.08
16EW04-201020	E2001015-006	108,744	3.19
16RW01-201020	E2001015-007	127,222	3.14

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/23/20 22:15

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_050	**Lab Code:**	EQ2000536-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-03	189,894	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/26/20 10:26

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_007	**Lab Code:**	EQ2000540-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-01	226,473	3.06
16EW01-201020	E2001015-001	93,057	3.03
16WW49-201020	E2001015-002	123,619	3.04
Method Blank	EQ2000533-01	248,798	3.06
Lab Control Sample	EQ2000533-02	253,069	3.07
Duplicate Lab Control Sample	EQ2000533-03	254,501	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20 11:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-02
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-02	224,624	3.06
16WW48-201020MS	EQ2000533-04	174,515	3.06
16WW48-201020DMS	EQ2000533-05	173,226	3.06
16WW48-201020	E2001015-003	166,464	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101079

Service Request: E2001015
Date Analyzed: 10/26/20 12:47

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_024
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-03
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-03	229,585	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001015
Project:	HS20101079	**Date Analyzed:**	10/26/20 13:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_026	**Lab Code:**	EQ2000540-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-04	230,699	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

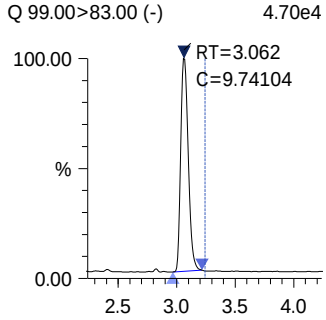
PERCHLORATE7

Date acquired: 10/26/2020 10:26:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 10:26:38 AM	206255	9.74104	20201026_007	3.062	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 10:26:38 AM	226473	1.00000	20201026_007	3.060	25.0000	1.0000	4

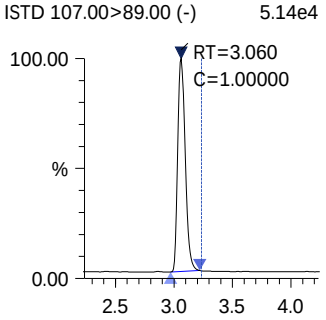
Perchlorate

Conc 9.74104
Area 206255



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 226473



ALS Group Houston

EQ2000533-01

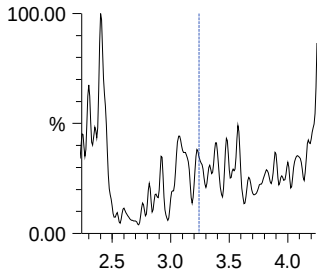
Date acquired: 10/26/2020 11:06:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_012.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-01	10/26/2020 11:06:08 AM	----	----	20201026_012	----	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000533-01	10/26/2020 11:06:08 AM	248798	1.00000	20201026_012	3.064	25.0000	1.0000	17

Perchlorate

Conc ----
Area ----

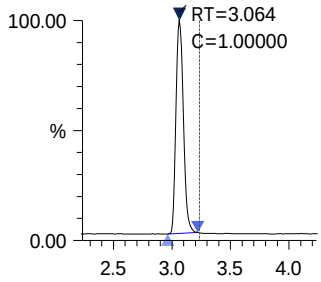
Q 99.00>83.00 (-) 2.84e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 248798

ISTD 107.00>89.00 (-) 5.74e4



ALS Group Houston

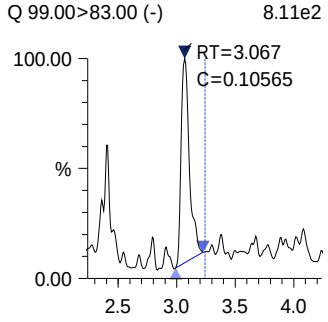
EQ2000533-02

Date acquired: 10/26/2020 11:13:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_013.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-02	10/26/2020 11:13:59 AM	3757	0.10565	20201026_013	3.067	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000533-02	10/26/2020 11:13:59 AM	253069	1.00000	20201026_013	3.065	25.0000	1.0000	18

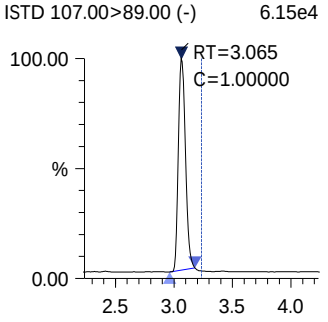
Perchlorate

Conc 0.10565
Area 3757



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 253069



ALS Group Houston

EQ2000533-03

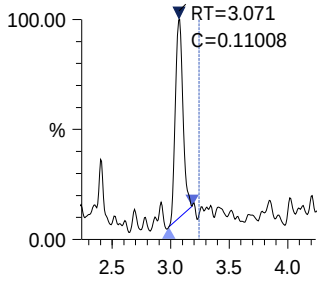
Date acquired: 10/26/2020 11:21:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_014.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-03	10/26/2020 11:21:53 AM	3884	0.11008	20201026_014	3.071	25.0000	1.0000	19
Sodium Perchlorate-18O4_IS	EQ2000533-03	10/26/2020 11:21:53 AM	254501	1.00000	20201026_014	3.065	25.0000	1.0000	19

Perchlorate

Conc 0.11008
Area 3884

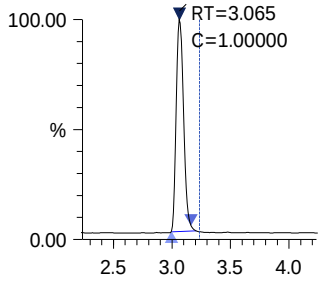
Q 99.00>83.00 (-) 9.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 254501

ISTD 107.00>89.00 (-) 6.16e4



ALS Group Houston

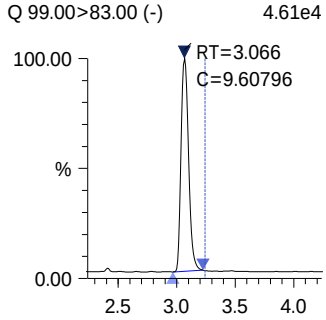
PERCHLORATE7

Date acquired: 10/26/2020 11:29:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 11:29:45 AM	201792	9.60796	20201026_015	3.066	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 11:29:45 AM	224624	1.00000	20201026_015	3.064	25.0000	1.0000	4

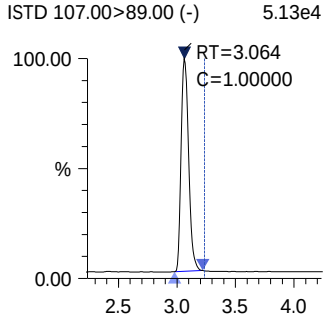
Perchlorate

Conc 9.60796
Area 201792



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 224624



ALS Group Houston

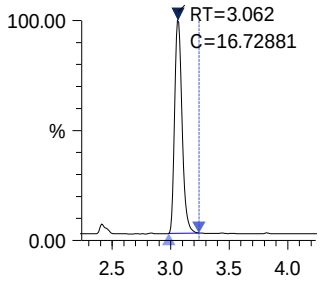
EQ2000533-04X10

Date acquired: 10/26/2020 12:16:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_020.lcd
Vial: 20 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-04X10	10/26/2020 12:16:12 PM	272319	16.72881	20201026_020	3.062	25.0000	1.0000	20
Sodium Perchlorate-18O4_IS	EQ2000533-04X10	10/26/2020 12:16:12 PM	174515	1.00000	20201026_020	3.060	25.0000	1.0000	20

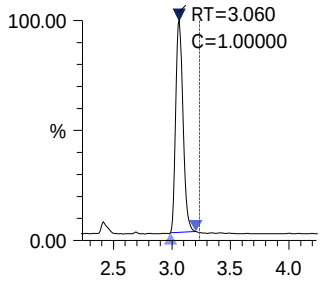
Perchlorate

Conc 16.72881
Area 272319
Q 99.00>83.00 (-) 6.29e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174515
ISTD 107.00>89.00 (-) 4.10e4



ALS Group Houston

EQ2000533-05X10

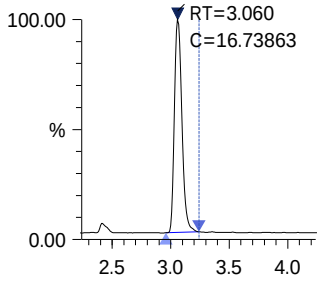
Date acquired: 10/26/2020 12:24:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_021.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-05X10	10/26/2020 12:24:04 PM	270465	16.73863	20201026_021	3.060	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	EQ2000533-05X10	10/26/2020 12:24:04 PM	173226	1.00000	20201026_021	3.058	25.0000	1.0000	21

Perchlorate

Conc 16.73863
Area 270465

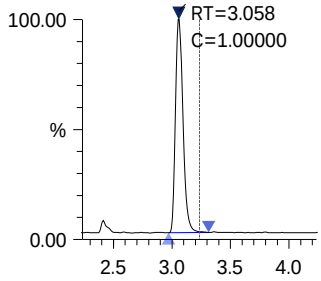
Q 99.00>83.00 (-) 6.19e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 173226

ISTD 107.00>89.00 (-) 3.91e4



ALS Group Houston

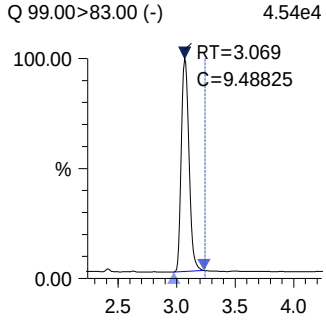
PERCHLORATE7

Date acquired: 10/26/2020 12:47:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_024.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 12:47:43 PM	203693	9.48825	20201026_024	3.069	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 12:47:43 PM	229585	1.00000	20201026_024	3.067	25.0000	1.0000	4

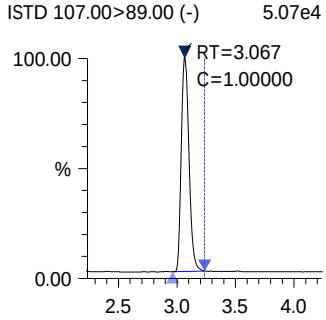
Perchlorate

Conc 9.48825
Area 203693



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 229585



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 30, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101089**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 11 sample(s) on Oct 21, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101089-01	16WW44-201019	Groundwater		19-Oct-2020 07:50	21-Oct-2020 09:30	☐
HS20101089-02	16WW37-201019	Groundwater		19-Oct-2020 08:35	21-Oct-2020 09:30	☐
HS20101089-03	16WW38-201019	Groundwater		19-Oct-2020 09:15	21-Oct-2020 09:30	☐
HS20101089-04	16WW14-201019	Groundwater		19-Oct-2020 10:00	21-Oct-2020 09:30	☐
HS20101089-05	16WW34-201019	Groundwater		19-Oct-2020 10:45	21-Oct-2020 09:30	☐
HS20101089-06	16WW34-201019-FD	Groundwater		19-Oct-2020 10:45	21-Oct-2020 09:30	☐
HS20101089-07	16WW33-201019	Groundwater		19-Oct-2020 11:30	21-Oct-2020 09:30	☐
HS20101089-08	16WW32-201019	Groundwater		19-Oct-2020 12:15	21-Oct-2020 09:30	☐
HS20101089-09	16WW31-201019	Groundwater		19-Oct-2020 12:55	21-Oct-2020 09:30	☐
HS20101089-10	16WW46-201019	Groundwater		19-Oct-2020 13:40	21-Oct-2020 09:30	☐
HS20101089-11	Trip Blank-201019	Groundwater		19-Oct-2020 00:00	21-Oct-2020 09:30	☐

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R371614

Sample ID: HS20101248-06MS

- MS and MSD are for an unrelated sample

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW44-201019
Collection Date: 19-Oct-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 13:57
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 13:57
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: 4-Bromofluorobenzene	*87.6*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: Dibromofluoromethane	*85.9*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: Toluene-d8	*97.4*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 13:57*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW37-201019
Collection Date: 19-Oct-2020 08:35

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 14:39
1,1-Dichloroethene	**0.64**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:39
cis-1,2-Dichloroethene	**5.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 14:39
Trichloroethene	**120**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Vinyl chloride	**1.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Surr: 1,2-Dichloroethane-d4	*84.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: Dibromofluoromethane	*86.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: Toluene-d8	*96.0*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 14:39*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastructure, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW38-201019
Collection Date: 19-Oct-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	29-Oct-2020 15:00
1,1-Dichloroethene	**20**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	29-Oct-2020 15:00
cis-1,2-Dichloroethene	**1,100**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
Methylene chloride	10	U	4.0	10	20	UG/L	10	29-Oct-2020 15:00
Trichloroethene	**3,800**		**20**	**50**	**100**	**UG/L**	100	29-Oct-2020 16:24
Vinyl chloride	**100**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
Surr: 1,2-Dichloroethane-d4	*82.5*			**0**	*81-118*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: 4-Bromofluorobenzene	*87.2*			**0**	*85-114*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: 4-Bromofluorobenzene	*88.9*			**0**	*85-114*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Dibromofluoromethane	*86.8*			**0**	*80-119*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: Toluene-d8	*96.5*			**0**	*89-112*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*100*	*29-Oct-2020 16:24*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW14-201019
Collection Date: 19-Oct-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 14:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 14:18
Trichloroethene	**25**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: 4-Bromofluorobenzene	*87.0*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: Dibromofluoromethane	*82.6*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 14:18*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW34-201019
Collection Date: 19-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 18:52
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:52
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: Toluene-d8	*96.9*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:52*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW34-201019-FD
Collection Date: 19-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 17:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:28
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Surr: 1,2-Dichloroethane-d4	*82.8*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: 4-Bromofluorobenzene	*90.0*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: Dibromofluoromethane	*85.5*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: Toluene-d8	*94.9*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:28*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW33-201019
Collection Date: 19-Oct-2020 11:30

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 17:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Surr: 1,2-Dichloroethane-d4	*84.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: Toluene-d8	*96.7*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:49*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW32-201019
Collection Date: 19-Oct-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 18:10
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:10
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: Toluene-d8	*97.8*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:10*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW31-201019
Collection Date: 19-Oct-2020 12:55

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 18:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:31
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: 4-Bromofluorobenzene	*88.6*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:31*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW46-201019
Collection Date: 19-Oct-2020 13:40

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 17:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:06
Trichloroethene	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 17:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
Surr: 1,2-Dichloroethane-d4	*81.9*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: 4-Bromofluorobenzene	*89.1*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: Toluene-d8	*95.6*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank-201019
Collection Date: 19-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 13:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 13:27
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 13:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371410 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101089-01	16WW44-201019	19 Oct 2020 07:50			27 Oct 2020 14:22	1
HS20101089-02	16WW37-201019	19 Oct 2020 08:35			27 Oct 2020 14:22	1
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			27 Oct 2020 14:22	1
HS20101089-04	16WW14-201019	19 Oct 2020 10:00			27 Oct 2020 14:22	1
HS20101089-05	16WW34-201019	19 Oct 2020 10:45			27 Oct 2020 14:22	1
HS20101089-06	16WW34-201019-FD	19 Oct 2020 10:45			27 Oct 2020 14:22	1
HS20101089-07	16WW33-201019	19 Oct 2020 11:30			27 Oct 2020 14:22	1
HS20101089-08	16WW32-201019	19 Oct 2020 12:15			27 Oct 2020 14:22	1
HS20101089-09	16WW31-201019	19 Oct 2020 12:55			27 Oct 2020 14:22	1
HS20101089-10	16WW46-201019	19 Oct 2020 13:40			27 Oct 2020 14:22	1
Batch ID: R371614 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101089-01	16WW44-201019	19 Oct 2020 07:50			29 Oct 2020 13:57	1
HS20101089-02	16WW37-201019	19 Oct 2020 08:35			29 Oct 2020 14:39	1
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			29 Oct 2020 16:24	100
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			29 Oct 2020 15:00	10
HS20101089-04	16WW14-201019	19 Oct 2020 10:00			29 Oct 2020 14:18	1
HS20101089-05	16WW34-201019	19 Oct 2020 10:45			29 Oct 2020 18:52	1
HS20101089-06	16WW34-201019-FD	19 Oct 2020 10:45			29 Oct 2020 17:28	1
HS20101089-07	16WW33-201019	19 Oct 2020 11:30			29 Oct 2020 17:49	1
HS20101089-08	16WW32-201019	19 Oct 2020 12:15			29 Oct 2020 18:10	1
HS20101089-09	16WW31-201019	19 Oct 2020 12:55			29 Oct 2020 18:31	1
HS20101089-10	16WW46-201019	19 Oct 2020 13:40			29 Oct 2020 17:06	1
HS20101089-11	Trip Blank-201019	19 Oct 2020 00:00			29 Oct 2020 13:27	1

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

QC BATCH REPORT

Batch ID: R371614 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201029** Units: **UG/L** Analysis Date: **29-Oct-2020 13:05**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808455** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.79*	*1.0*	*50*	*0*	*83.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.87*	*1.0*	*50*	*0*	*87.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.31*	*1.0*	*50*	*0*	*84.6*	*80 - 119*				
Surr: Toluene-d8	*48.23*	*1.0*	*50*	*0*	*96.5*	*89 - 112*				

LCS Sample ID: **VLCSW-201029** Units: **UG/L** Analysis Date: **29-Oct-2020 12:23**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808454** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.97	1.0	20	0	105	80 - 119				
1,1-Dichloroethene	16.86	1.0	20	0	84.3	71 - 131				
1,2-Dichloroethane	23.98	1.0	20	0	120	73 - 128				
cis-1,2-Dichloroethene	22.31	1.0	20	0	112	78 - 123				
Methylene chloride	19.68	2.0	20	0	98.4	74 - 124				
Trichloroethene	22.6	1.0	20	0	113	79 - 123				
Vinyl chloride	16.02	1.0	20	0	80.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.21*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.4*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*53.14*	*1.0*	*50*	*0*	*106*	*80 - 119*				
Surr: Toluene-d8	*50.31*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

QC BATCH REPORT

Batch ID: R371614 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20101248-06MS** Units: **UG/L** Analysis Date: **29-Oct-2020 15:42**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	23.16	1.0	20	0	116	80 - 119				
1,1-Dichloroethene	17.61	1.0	20	0	88.1	71 - 131				
1,2-Dichloroethane	25.12	1.0	20	0	126	73 - 128				
cis-1,2-Dichloroethene	21.66	1.0	20	0	108	78 - 123				
Methylene chloride	19.42	2.0	20	0	97.1	74 - 124				
Trichloroethene	26.79	1.0	20	0	134	79 - 123				S
Vinyl chloride	17.31	1.0	20	0	86.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*41.55*	*1.0*	*50*	*0*	*83.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.99*	*1.0*	*50*	*0*	*88.0*	*85 - 114*				
Surr: Dibromofluoromethane	*44.45*	*1.0*	*50*	*0*	*88.9*	*80 - 119*				
Surr: Toluene-d8	*49.29*	*1.0*	*50*	*0*	*98.6*	*89 - 112*				

MSD Sample ID: **HS20101248-06MSD** Units: **UG/L** Analysis Date: **29-Oct-2020 16:03**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.91	1.0	20	0	105	80 - 119	23.16	10.2	20	
1,1-Dichloroethene	16.45	1.0	20	0	82.2	71 - 131	17.61	6.84	20	
1,2-Dichloroethane	24.09	1.0	20	0	120	73 - 128	25.12	4.19	20	
cis-1,2-Dichloroethene	19.77	1.0	20	0	98.8	78 - 123	21.66	9.16	20	
Methylene chloride	18.71	2.0	20	0	93.5	74 - 124	19.42	3.74	20	
Trichloroethene	25.11	1.0	20	0	126	79 - 123	26.79	6.47	20	S
Vinyl chloride	16.75	1.0	20	0	83.7	58 - 137	17.31	3.33	20	
Surr: 1,2-Dichloroethane-d4	*41.11*	*1.0*	*50*	*0*	*82.2*	*81 - 118*	*41.55*	*1.08*	*20*	
Surr: 4-Bromofluorobenzene	*42.84*	*1.0*	*50*	*0*	*85.7*	*85 - 114*	*43.99*	*2.64*	*20*	
Surr: Dibromofluoromethane	*43.51*	*1.0*	*50*	*0*	*87.0*	*80 - 119*	*44.45*	*2.13*	*20*	
Surr: Toluene-d8	*46.37*	*1.0*	*50*	*0*	*92.7*	*89 - 112*	*49.29*	*6.1*	*20*	

The following samples were analyzed in this batch:

HS20101089-01	HS20101089-02	HS20101089-03	HS20101089-04
HS20101089-05	HS20101089-06	HS20101089-07	HS20101089-08
HS20101089-09	HS20101089-10	HS20101089-11	

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101089**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US Date: 30-Oct-20

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	Sub
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	WET209
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	VOA091
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	RSK008
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	Sub

ALS Houston, US Date: 30-Oct-20

Sample Receipt Checklist

Work Order ID: HS20101089 **Date/Time Received:** **21-Oct-2020 09:30**

Client Name: CBI-Houston **Received by:** **Jared R. Makan**

Completed By:	/S/ Paresh M. Giga	21-Oct-2020 13:23	**Reviewed by:**	/S/ RJ Modashia	21-Oct-2020 16:37
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	1.5C U/c	IR31
Cooler(s)/Kit(s):	43016	
Date/Time sample(s) sent to storage:	10/21/2020 14:40	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW44-201019	WG	10/19/20/0750		4	X					X					
16WW37-201019	WG	10/19/20/0835		4	X					X					
16WW38-201019	WG	10/19/20/0915		4	X					X					
16WW14-201019	WG	10/19/20/1000		4	X					X					
16WW34-201019	WG	10/19/20/1045		4	X					X					
16WW34-201019-FD	WG	10/19/20/1045		4	X					X					
16WW33-201019	WG	10/19/20/1130		4	X					X					
16WW32-201019	WG	10/19/20/1215		4	X					X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Mascorro	10/21/20	07:30							

Remarks: Cooler 43016 Temp 1.5°C 1231 CFO

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101089

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: APTIM LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. 501032
Job: **LHAAP 16 October 2020**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D. / Time	Sample Matrix	Date /	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW31-201019	WG	10/19/20/1255		4	X					X					
16WW46-201019	WG	10/19/20/1340		4	X					X					
TRIP BLANK-201019	W	10/19/20		2	Y										

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Mumm	10/21/20	09:30							

Remarks:

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101089

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

u3016

CUSTODY SEAL

Date: 10/20/20 Time: 1430
Name: Seth Beesinger
Company: ALS

Seal Broken By:
Date: 10/21/20

u3016

Must Deliver Next Business Day
Time and Tempature Sensitive!

u3016

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
AP1JM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 23JUN20
ACTWGT: 1.00 LB MAN
CAD: 3001307/CAFE3211
DIMS: 15x10x1 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 16 - 8072394 - RJ
RMA:

FedEx Express

FedEx TRK# 0221 1891 8877 8325

WED - 21 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

FID: 779552 [illegible] GCCA SNKO/AFTT/05A2

October 26, 2020 Service Request No:E2001014

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101089

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001014.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001014
Project:	HS20101089	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Ten samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD was performed on an unrelated sample.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001014
Project: HS20101089

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001014-001	16WW44-201019	10/19/2020	0750
E2001014-002	16WW37-201019	10/19/2020	0835
E2001014-003	16WW38-201019	10/19/2020	0915
E2001014-004	16WW14-201019	10/19/2020	1000
E2001014-005	16WW34-201019	10/19/2020	1045
E2001014-006	16WW34-201019-FD	10/19/2020	1045
E2001014-007	16WW33-201019	10/19/2020	1130
E2001014-008	16WW32-201019	10/19/2020	1215
E2001014-009	16WW31-201019	10/19/2020	1255
E2001014-010	16WW46-201019	10/19/2020	1340

Service Request Summary

Folder #: **E2001014**
Client Name: ALS Environmental - US
Project Name: HS20101089
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101089
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001014-001	16WW44-201019	Ground Water	10/19/20 0750	**IV**
E2001014-002	16WW37-201019	Ground Water	10/19/20 0835	**IV**
E2001014-003	16WW38-201019	Ground Water	10/19/20 0915	**IV**
E2001014-004	16WW14-201019	Ground Water	10/19/20 1000	**IV**
E2001014-005	16WW34-201019	Ground Water	10/19/20 1045	**IV**
E2001014-006	16WW34-201019-FD	Ground Water	10/19/20 1045	**IV**
E2001014-007	16WW33-201019	Ground Water	10/19/20 1130	**IV**
E2001014-008	16WW32-201019	Ground Water	10/19/20 1215	**IV**
E2001014-009	16WW31-201019	Ground Water	10/19/20 1255	**IV**
E2001014-010	16WW46-201019	Ground Water	10/19/20 1340	**IV**

Service Request Summary

Folder #:	**E2001014**
Client Name:	ALS Environmental - US
Project Name:	HS20101089
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	10/22/20
Internal Due Date:	11/4/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20101089
EDD:	No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	10	Level II due 11/4,level IV 11/11

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

Chain of Custody

ALS Environmental - Houston HRMS
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14983**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101089
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101089-01**	**16WW44-201019**	**Groundwater**	**19 Oct 2020 07:50**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101089-02**	**16WW37-201019**	**Groundwater**	**19 Oct 2020 08:35**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101089-03**	**16WW38-201019**	**Groundwater**	**19 Oct 2020 09:15**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101089-04**	**16WW14-201019**	**Groundwater**	**19 Oct 2020 10:00**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101089-05**	**16WW34-201019**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101089-06**	**16WW34-201019-FD**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101089-07**	**16WW33-201019**	**Groundwater**	**19 Oct 2020 11:30**
	SUB_Perch-6850			04 Nov 2020
8.	**HS20101089-08**	**16WW32-201019**	**Groundwater**	**19 Oct 2020 12:15**
	SUB_Perch-6850			04 Nov 2020
9.	**HS20101089-09**	**16WW31-201019**	**Groundwater**	**19 Oct 2020 12:55**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14983**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED		DUE DATE
	SUB_Perch-6850		04 Nov 2020
10. HS20101089-10	**16WW46-201019**	**Groundwater**	**19 Oct 2020 13:40**
	SUB_Perch-6850		04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. Mauerman Date/Time: 10/22/20

Received By: [signature] Date/Time: 10/22/20 1105

Cooler ID(s): Temperature(s):

Cooler Receipt Form

ALS Environmental

Project Chemist: IH

Client/Project: ALS-HI

Thermometer ID: IR31

Date/Time Received: 10/22/20 Initials: IH

Date/Time Logged in: 10/22/20 Initials: IH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	IH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

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F: +1 713 266 1599
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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW44-201019	**Units:**	µg/L
Lab Code:	E2001014-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:42	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0835
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW37-201019	**Units:**	µg/L
Lab Code:	E2001014-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.393**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 12:59	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0915
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW38-201019	**Units:**	µg/L
Lab Code:	E2001014-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:01	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1000
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW14-201019	**Units:**	µg/L
Lab Code:	E2001014-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:09	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019	**Units:**	µg/L
Lab Code:	E2001014-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:17	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019-FD	**Units:**	µg/L
Lab Code:	E2001014-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:24	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1130
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW33-201019	**Units:**	µg/L
Lab Code:	E2001014-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0259**	J	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:32	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1215
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW32-201019	**Units:**	µg/L
Lab Code:	E2001014-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:40	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1255
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW31-201019	**Units:**	µg/L
Lab Code:	E2001014-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:48	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1340
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW46-201019	**Units:**	µg/L
Lab Code:	E2001014-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:04	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089
Sample Matrix: Ground Water

Service Request: E2001014
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS				Batch QCDMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000533-04				EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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20201020

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte **Curve Fit** **Weighting**

Perchlorate **Linear** **Equal** **R2 = 0.9997655579102110** **Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

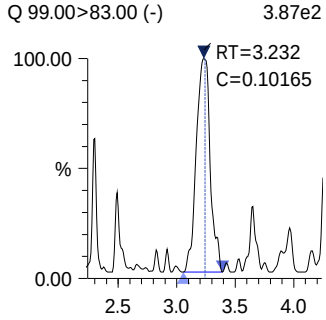
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

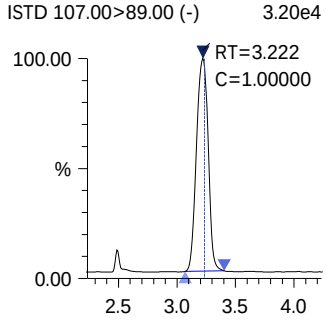
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

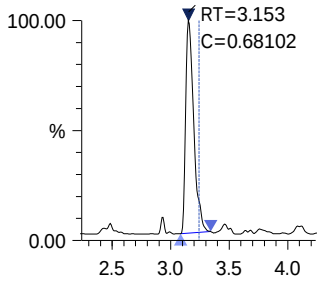
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

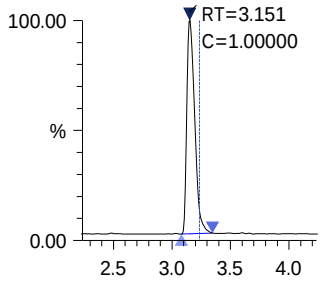
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

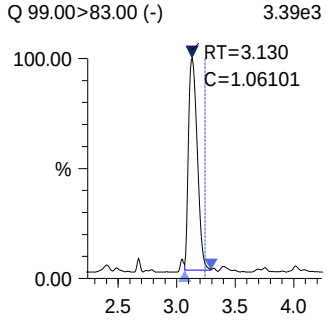
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

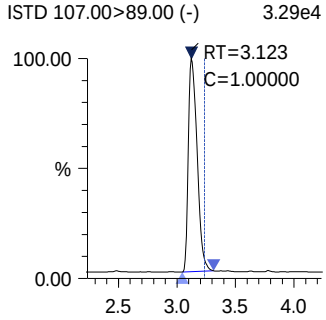
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

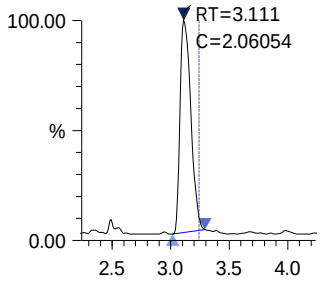
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

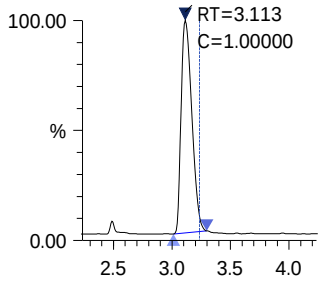
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

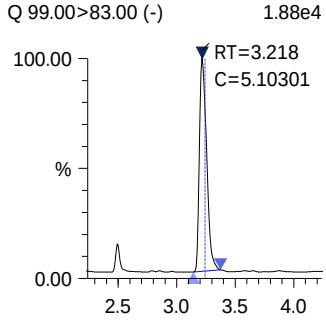
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

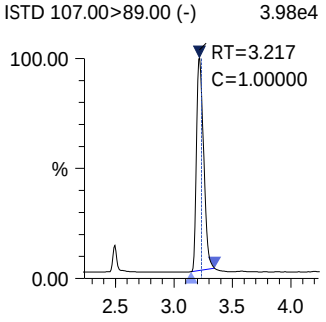
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

PERCHLORATE6

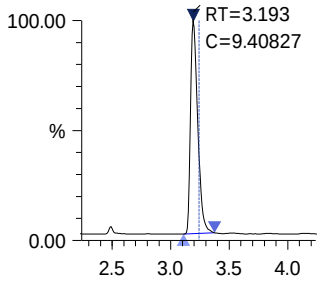
Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

Perchlorate

Conc 9.40827
Area 136097

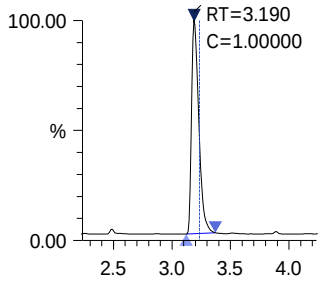
Q 99.00>83.00 (-) 3.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693

ISTD 107.00>89.00 (-) 3.55e4



ALS Group Houston

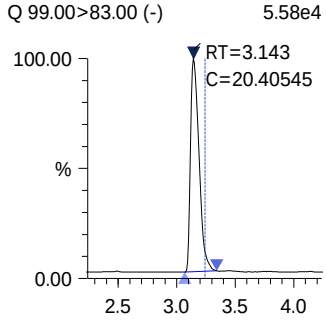
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

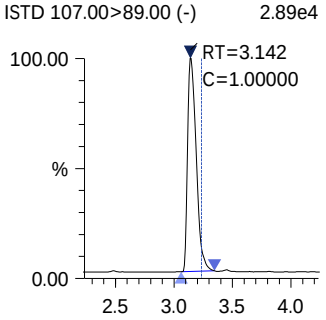
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

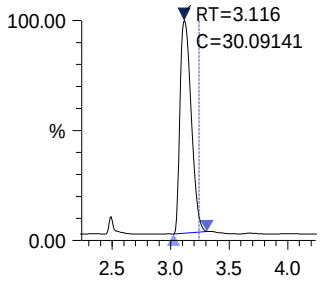
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

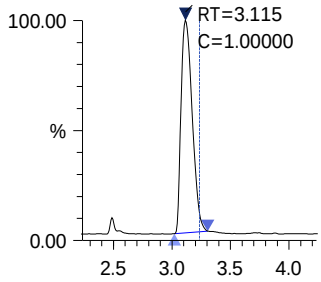
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

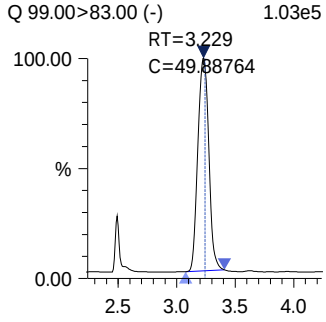
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

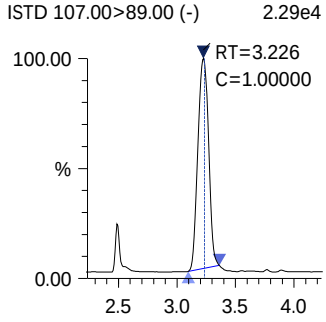
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

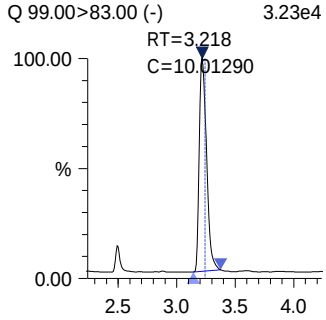
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

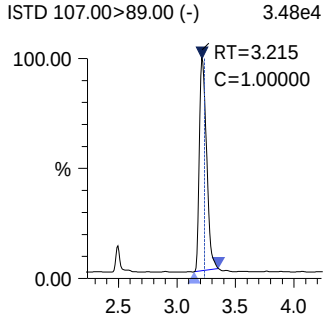
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201023

ALS Environmental

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201023_001	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:39
2	null		20201023_002	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:46
3	IB		20201023_003	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:04
4	IB		20201023_004	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:12
5	LODV		20201023_005	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:20
6	ICS		20201023_006	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:28
7	PERCHLORATE7		20201023_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 16:35
8	EQ2000532-01		20201023_008	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:43
9	EQ2000532-02		20201023_009	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:51
10	EQ2000532-03		20201023_010	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:59
11	E2001001-001		20201023_011	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:07
12	E2001001-002		20201023_012	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:15
13	E2001001-003		20201023_013	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:23
14	E2001001-004		20201023_014	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:31
15	E2001001-005		20201023_015	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:39
16	E2001001-006		20201023_016	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:47
17	E2001001-007		20201023_017	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:55
18	PERCHLORATE7		20201023_018	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 18:02
19	E2001001-008		20201023_019	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:10
20	E2001002-001		20201023_020	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:18
21	E2001003-001		20201023_021	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:26
22	E2001003-002		20201023_022	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:34
23	E2001003-003		20201023_023	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:42
24	E2001003-004		20201023_024	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:50
25	EQ2000533-01		20201023_025	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:58
26	EQ2000533-02		20201023_026	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:06
27	EQ2000533-03		20201023_027	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:13
28	EQ2000533-04		20201023_028	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:21
29	PERCHLORATE7		20201023_029	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 19:29
30	EQ2000533-05		20201023_030	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:37
31	E2001014-001		20201023_031	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:45
32	E2001014-002		20201023_032	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:53
33	E2001014-003		20201023_033	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:01
34	E2001014-004		20201023_034	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:09
35	E2001014-005		20201023_035	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:17
36	E2001014-006		20201023_036	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:24
37	E2001014-007		20201023_037	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:32
38	E2001014-008		20201023_038	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:40
39	E2001014-009		20201023_039	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:48
40	PERCHLORATE7		20201023_040	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 20:56
41	E2001014-010		20201023_041	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:04
42	E2001015-001		20201023_042	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:12
43	E2001015-002		20201023_043	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:20
44	E2001015-003		20201023_044	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:28
45	E2001015-004		20201023_045	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:36
46	E2001015-005		20201023_046	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:44
47	E2001015-006		20201023_047	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:52
48	E2001015-007		20201023_048	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:00
49	E2001016-001		20201023_049	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:07
50	PERCHLORATE7		20201023_050	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 22:15
51	null		20201023_051	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:20
52	null		20201023_052	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:25
53								
54								
55								

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒	3100807-05	10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:07
26								
27								
28								
29								
30								
31								
32								
33								
34								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_029

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.82	NA	NA	NA	-1.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_040

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.53	NA	NA	NA	-4.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_050

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.67	NA	NA	NA	-3.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.74	NA	NA	NA	-2.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.61	NA	NA	NA	-3.9	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_024

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 19:29

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_029	**Lab Code:**	EQ2000536-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-01	205,363	3.14
16WW38-201019	E2001014-003	137,403	3.12
16WW14-201019	E2001014-004	94,522	3.07
16WW34-201019	E2001014-005	202,842	3.15
16WW34-201019-FD	E2001014-006	179,043	3.19
16WW33-201019	E2001014-007	146,998	3.16
16WW32-201019	E2001014-008	148,270	3.11
16WW31-201019	E2001014-009	181,986	3.10

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 20:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_040	**Lab Code:**	EQ2000536-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-02	158,162	3.19
16WW46-201019	E2001014-010	85,083	3.12

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 22:15

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_050	**Lab Code:**	EQ2000536-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-03	189,894	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 10:26

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_007	**Lab Code:**	EQ2000540-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-01	226,473	3.06
16WW44-201019	E2001014-001	253,840	3.06
Method Blank	EQ2000533-01	248,798	3.06
Lab Control Sample	EQ2000533-02	253,069	3.07
Duplicate Lab Control Sample	EQ2000533-03	254,501	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 11:29

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_015	**Lab Code:**	EQ2000540-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-02	224,624	3.06
Batch QCMS	EQ2000533-04	174,515	3.06
Batch QCDMS	EQ2000533-05	173,226	3.06
Batch QC	E2001015-003	166,464	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 12:47

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_024	**Lab Code:**	EQ2000540-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-03	229,585	3.07
16WW37-201019	E2001014-002	173,136	2.98

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 13:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_026	**Lab Code:**	EQ2000540-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-04	230,699	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

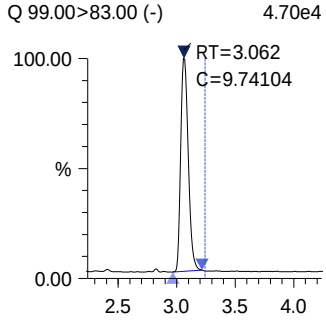
PERCHLORATE7

Date acquired: 10/26/2020 10:26:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 10:26:38 AM	206255	9.74104	20201026_007	3.062	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 10:26:38 AM	226473	1.00000	20201026_007	3.060	25.0000	1.0000	4

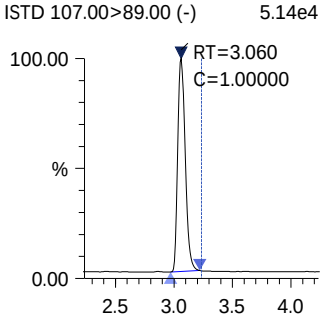
Perchlorate

Conc 9.74104
Area 206255



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 226473



ALS Group Houston

EQ2000533-01

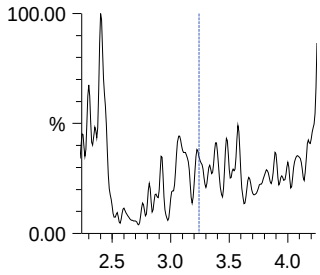
Date acquired: 10/26/2020 11:06:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_012.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-01	10/26/2020 11:06:08 AM	----	----	20201026_012	----	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000533-01	10/26/2020 11:06:08 AM	248798	1.00000	20201026_012	3.064	25.0000	1.0000	17

Perchlorate

Conc ----
Area ----

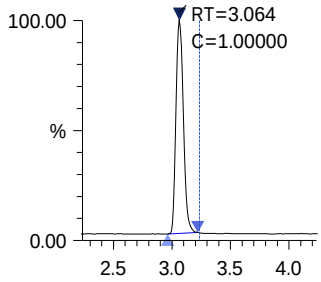
Q 99.00>83.00 (-) 2.84e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 248798

ISTD 107.00>89.00 (-) 5.74e4



ALS Group Houston

EQ2000533-02

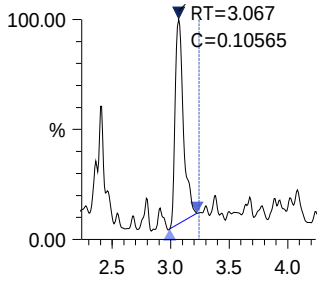
Date acquired: 10/26/2020 11:13:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_013.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-02	10/26/2020 11:13:59 AM	3757	0.10565	20201026_013	3.067	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000533-02	10/26/2020 11:13:59 AM	253069	1.00000	20201026_013	3.065	25.0000	1.0000	18

Perchlorate

Conc 0.10565
Area 3757

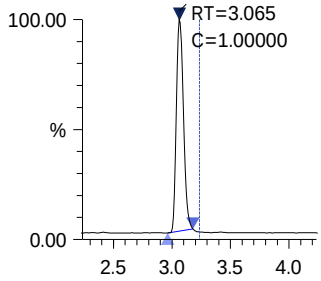
Q 99.00>83.00 (-) 8.11e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 253069

ISTD 107.00>89.00 (-) 6.15e4



ALS Group Houston

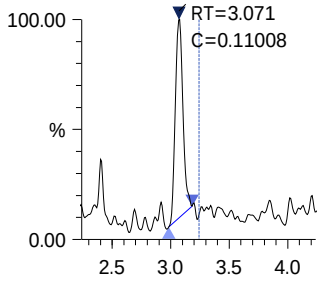
EQ2000533-03

Date acquired: 10/26/2020 11:21:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_014.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-03	10/26/2020 11:21:53 AM	3884	0.11008	20201026_014	3.071	25.0000	1.0000	19
Sodium Perchlorate-18O4_IS	EQ2000533-03	10/26/2020 11:21:53 AM	254501	1.00000	20201026_014	3.065	25.0000	1.0000	19

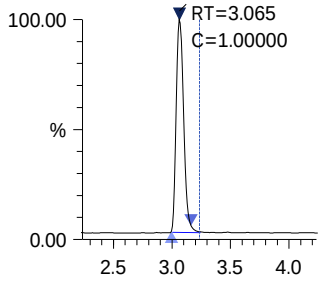
Perchlorate

Conc 0.11008
Area 3884
Q 99.00>83.00 (-) 9.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 254501
ISTD 107.00>89.00 (-) 6.16e4



ALS Group Houston

PERCHLORATE7

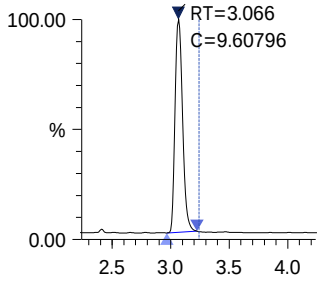
Date acquired: 10/26/2020 11:29:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 11:29:45 AM	201792	9.60796	20201026_015	3.066	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 11:29:45 AM	224624	1.00000	20201026_015	3.064	25.0000	1.0000	4

Perchlorate

Conc 9.60796
Area 201792

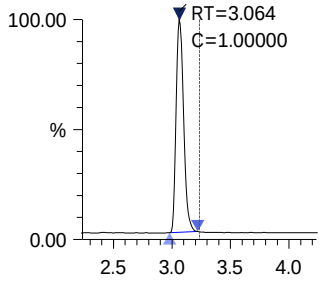
Q 99.00>83.00 (-) 4.61e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 224624

ISTD 107.00>89.00 (-) 5.13e4



ALS Group Houston

EQ2000533-04X10

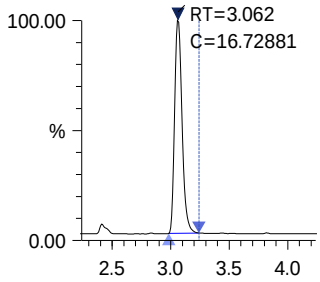
Date acquired: 10/26/2020 12:16:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_020.lcd
Vial: 20 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-04X10	10/26/2020 12:16:12 PM	272319	16.72881	20201026_020	3.062	25.0000	1.0000	20
Sodium Perchlorate-18O4_IS	EQ2000533-04X10	10/26/2020 12:16:12 PM	174515	1.00000	20201026_020	3.060	25.0000	1.0000	20

Perchlorate

Conc 16.72881
Area 272319

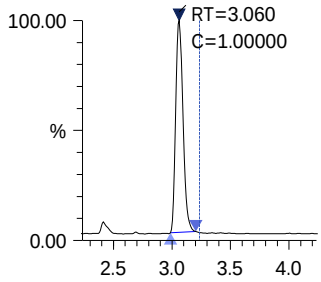
Q 99.00>83.00 (-) 6.29e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174515

ISTD 107.00>89.00 (-) 4.10e4



ALS Group Houston

EQ2000533-05X10

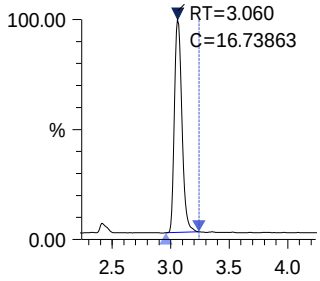
Date acquired: 10/26/2020 12:24:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_021.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-05X10	10/26/2020 12:24:04 PM	270465	16.73863	20201026_021	3.060	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	EQ2000533-05X10	10/26/2020 12:24:04 PM	173226	1.00000	20201026_021	3.058	25.0000	1.0000	21

Perchlorate

Conc 16.73863
Area 270465

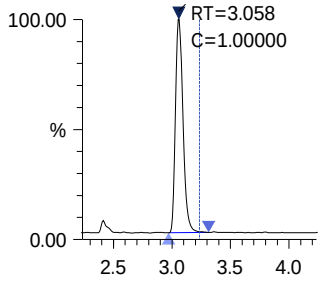
Q 99.00>83.00 (-) 6.19e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173226

ISTD 107.00>89.00 (-) 3.91e4



ALS Group Houston

PERCHLORATE7

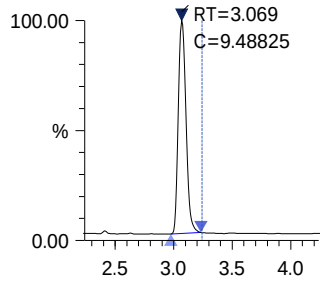
Date acquired: 10/26/2020 12:47:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_024.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 12:47:43 PM	203693	9.48825	20201026_024	3.069	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 12:47:43 PM	229585	1.00000	20201026_024	3.067	25.0000	1.0000	4

Perchlorate

Conc 9.48825
Area 203693

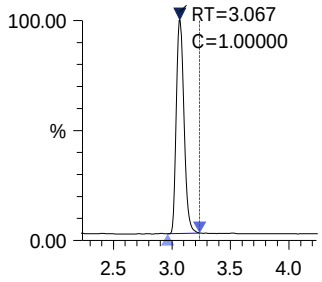
Q 99.00>83.00 (-) 4.54e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 229585

ISTD 107.00>89.00 (-) 5.07e4



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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

WorkOrder: HS20101089

LHAAP 16 October 2020

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

01-Dec-2020

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ALS Group USA, Corp
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Accuracy and Precision
Initial Calibration
Chromatogram

HS20101089 LHAAP 16 October 2020 Final

ALS WO# HS20101089

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October 30, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101089**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 11 sample(s) on Oct 21, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101089-01	16WW44-201019	Groundwater		19-Oct-2020 07:50	21-Oct-2020 09:30	☐
HS20101089-02	16WW37-201019	Groundwater		19-Oct-2020 08:35	21-Oct-2020 09:30	☐
HS20101089-03	16WW38-201019	Groundwater		19-Oct-2020 09:15	21-Oct-2020 09:30	☐
HS20101089-04	16WW14-201019	Groundwater		19-Oct-2020 10:00	21-Oct-2020 09:30	☐
HS20101089-05	16WW34-201019	Groundwater		19-Oct-2020 10:45	21-Oct-2020 09:30	☐
HS20101089-06	16WW34-201019-FD	Groundwater		19-Oct-2020 10:45	21-Oct-2020 09:30	☐
HS20101089-07	16WW33-201019	Groundwater		19-Oct-2020 11:30	21-Oct-2020 09:30	☐
HS20101089-08	16WW32-201019	Groundwater		19-Oct-2020 12:15	21-Oct-2020 09:30	☐
HS20101089-09	16WW31-201019	Groundwater		19-Oct-2020 12:55	21-Oct-2020 09:30	☐
HS20101089-10	16WW46-201019	Groundwater		19-Oct-2020 13:40	21-Oct-2020 09:30	☐
HS20101089-11	Trip Blank-201019	Groundwater		19-Oct-2020 00:00	21-Oct-2020 09:30	☐

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R371614

Sample ID: HS20101248-06MS

- MS and MSD are for an unrelated sample

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW44-201019
Collection Date: 19-Oct-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 13:57
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 13:57
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:57
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: 4-Bromofluorobenzene	*87.6*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: Dibromofluoromethane	*85.9*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 13:57*
Surr: Toluene-d8	*97.4*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 13:57*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW37-201019
Collection Date: 19-Oct-2020 08:35

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 14:39
1,1-Dichloroethene	**0.64**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:39
cis-1,2-Dichloroethene	**5.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 14:39
Trichloroethene	**120**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Vinyl chloride	**1.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:39
Surr: 1,2-Dichloroethane-d4	*84.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: Dibromofluoromethane	*86.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 14:39*
Surr: Toluene-d8	*96.0*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 14:39*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW38-201019
Collection Date: 19-Oct-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	29-Oct-2020 15:00
1,1-Dichloroethene	**20**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	29-Oct-2020 15:00
cis-1,2-Dichloroethene	**1,100**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
Methylene chloride	10	U	4.0	10	20	UG/L	10	29-Oct-2020 15:00
Trichloroethene	**3,800**		**20**	**50**	**100**	**UG/L**	100	29-Oct-2020 16:24
Vinyl chloride	**100**		**2.0**	**5.0**	**10**	**UG/L**	10	29-Oct-2020 15:00
Surr: 1,2-Dichloroethane-d4	*82.5*			**0**	*81-118*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: 4-Bromofluorobenzene	*87.2*			**0**	*85-114*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: 4-Bromofluorobenzene	*88.9*			**0**	*85-114*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Dibromofluoromethane	*86.8*			**0**	*80-119*	*%REC*	*100*	*29-Oct-2020 16:24*
Surr: Toluene-d8	*96.5*			**0**	*89-112*	*%REC*	*10*	*29-Oct-2020 15:00*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*100*	*29-Oct-2020 16:24*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW14-201019
Collection Date: 19-Oct-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 14:18
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 14:18
Trichloroethene	**25**		**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 14:18
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 14:18
Surr: 1,2-Dichloroethane-d4	*81.1*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: 4-Bromofluorobenzene	*87.0*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: Dibromofluoromethane	*82.6*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 14:18*
Surr: Toluene-d8	*97.0*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 14:18*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW34-201019
Collection Date: 19-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 18:52
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:52
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:52
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:52*
Surr: Toluene-d8	*96.9*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:52*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW34-201019-FD
Collection Date: 19-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 17:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:28
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:28
Surr: 1,2-Dichloroethane-d4	*82.8*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: 4-Bromofluorobenzene	*90.0*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: Dibromofluoromethane	*85.5*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:28*
Surr: Toluene-d8	*94.9*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:28*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW33-201019
Collection Date: 19-Oct-2020 11:30

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 17:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:49
Surr: 1,2-Dichloroethane-d4	*84.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:49*
Surr: Toluene-d8	*96.7*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:49*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW32-201019
Collection Date: 19-Oct-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 18:10
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:10
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:10
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:10*
Surr: Toluene-d8	*97.8*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:10*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW31-201019
Collection Date: 19-Oct-2020 12:55

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 18:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 18:31
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 18:31
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: 4-Bromofluorobenzene	*88.6*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 18:31*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 18:31*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW46-201019
Collection Date: 19-Oct-2020 13:40

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	29-Oct-2020 17:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 17:06
Trichloroethene	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	29-Oct-2020 17:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 17:06
Surr: 1,2-Dichloroethane-d4	*81.9*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: 4-Bromofluorobenzene	*89.1*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: Dibromofluoromethane	*84.7*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 17:06*
Surr: Toluene-d8	*95.6*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 17:06*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Oct-2020 14:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank-201019
Collection Date: 19-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101089
Lab ID:HS20101089-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	29-Oct-2020 13:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	29-Oct-2020 13:27
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	29-Oct-2020 13:27
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*29-Oct-2020 13:27*
Surr: Toluene-d8	*97.2*			**0**	*89-112*	*%REC*	*1*	*29-Oct-2020 13:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371410 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101089-01	16WW44-201019	19 Oct 2020 07:50			27 Oct 2020 14:22	1
HS20101089-02	16WW37-201019	19 Oct 2020 08:35			27 Oct 2020 14:22	1
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			27 Oct 2020 14:22	1
HS20101089-04	16WW14-201019	19 Oct 2020 10:00			27 Oct 2020 14:22	1
HS20101089-05	16WW34-201019	19 Oct 2020 10:45			27 Oct 2020 14:22	1
HS20101089-06	16WW34-201019-FD	19 Oct 2020 10:45			27 Oct 2020 14:22	1
HS20101089-07	16WW33-201019	19 Oct 2020 11:30			27 Oct 2020 14:22	1
HS20101089-08	16WW32-201019	19 Oct 2020 12:15			27 Oct 2020 14:22	1
HS20101089-09	16WW31-201019	19 Oct 2020 12:55			27 Oct 2020 14:22	1
HS20101089-10	16WW46-201019	19 Oct 2020 13:40			27 Oct 2020 14:22	1
Batch ID: R371614 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101089-01	16WW44-201019	19 Oct 2020 07:50			29 Oct 2020 13:57	1
HS20101089-02	16WW37-201019	19 Oct 2020 08:35			29 Oct 2020 14:39	1
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			29 Oct 2020 16:24	100
HS20101089-03	16WW38-201019	19 Oct 2020 09:15			29 Oct 2020 15:00	10
HS20101089-04	16WW14-201019	19 Oct 2020 10:00			29 Oct 2020 14:18	1
HS20101089-05	16WW34-201019	19 Oct 2020 10:45			29 Oct 2020 18:52	1
HS20101089-06	16WW34-201019-FD	19 Oct 2020 10:45			29 Oct 2020 17:28	1
HS20101089-07	16WW33-201019	19 Oct 2020 11:30			29 Oct 2020 17:49	1
HS20101089-08	16WW32-201019	19 Oct 2020 12:15			29 Oct 2020 18:10	1
HS20101089-09	16WW31-201019	19 Oct 2020 12:55			29 Oct 2020 18:31	1
HS20101089-10	16WW46-201019	19 Oct 2020 13:40			29 Oct 2020 17:06	1
HS20101089-11	Trip Blank-201019	19 Oct 2020 00:00			29 Oct 2020 13:27	1

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

QC BATCH REPORT

Batch ID: R371614 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201029** Units: **UG/L** Analysis Date: **29-Oct-2020 13:05**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808455** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.79*	*1.0*	*50*	*0*	*83.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.87*	*1.0*	*50*	*0*	*87.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.31*	*1.0*	*50*	*0*	*84.6*	*80 - 119*				
Surr: Toluene-d8	*48.23*	*1.0*	*50*	*0*	*96.5*	*89 - 112*				

LCS Sample ID: **VLCSW-201029** Units: **UG/L** Analysis Date: **29-Oct-2020 12:23**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808454** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.97	1.0	20	0	105	80 - 119				
1,1-Dichloroethene	16.86	1.0	20	0	84.3	71 - 131				
1,2-Dichloroethane	23.98	1.0	20	0	120	73 - 128				
cis-1,2-Dichloroethene	22.31	1.0	20	0	112	78 - 123				
Methylene chloride	19.68	2.0	20	0	98.4	74 - 124				
Trichloroethene	22.6	1.0	20	0	113	79 - 123				
Vinyl chloride	16.02	1.0	20	0	80.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.21*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.4*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*53.14*	*1.0*	*50*	*0*	*106*	*80 - 119*				
Surr: Toluene-d8	*50.31*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101089

QC BATCH REPORT

Batch ID: R371614 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101248-06MS** Units: **UG/L** Analysis Date: **29-Oct-2020 15:42**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	23.16	1.0	20	0	116	80 - 119				
1,1-Dichloroethene	17.61	1.0	20	0	88.1	71 - 131				
1,2-Dichloroethane	25.12	1.0	20	0	126	73 - 128				
cis-1,2-Dichloroethene	21.66	1.0	20	0	108	78 - 123				
Methylene chloride	19.42	2.0	20	0	97.1	74 - 124				
Trichloroethene	26.79	1.0	20	0	134	79 - 123				S
Vinyl chloride	17.31	1.0	20	0	86.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*41.55*	*1.0*	*50*	*0*	*83.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.99*	*1.0*	*50*	*0*	*88.0*	*85 - 114*				
Surr: Dibromofluoromethane	*44.45*	*1.0*	*50*	*0*	*88.9*	*80 - 119*				
Surr: Toluene-d8	*49.29*	*1.0*	*50*	*0*	*98.6*	*89 - 112*				

MSD Sample ID: **HS20101248-06MSD** Units: **UG/L** Analysis Date: **29-Oct-2020 16:03**
Client ID: Run ID: **VOA6_371614** SeqNo: **5808463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	20.91	1.0	20	0	105	80 - 119	23.16	10.2	20	
1,1-Dichloroethene	16.45	1.0	20	0	82.2	71 - 131	17.61	6.84	20	
1,2-Dichloroethane	24.09	1.0	20	0	120	73 - 128	25.12	4.19	20	
cis-1,2-Dichloroethene	19.77	1.0	20	0	98.8	78 - 123	21.66	9.16	20	
Methylene chloride	18.71	2.0	20	0	93.5	74 - 124	19.42	3.74	20	
Trichloroethene	25.11	1.0	20	0	126	79 - 123	26.79	6.47	20	S
Vinyl chloride	16.75	1.0	20	0	83.7	58 - 137	17.31	3.33	20	
Surr: 1,2-Dichloroethane-d4	*41.11*	*1.0*	*50*	*0*	*82.2*	*81 - 118*	*41.55*	*1.08*	*20*	
Surr: 4-Bromofluorobenzene	*42.84*	*1.0*	*50*	*0*	*85.7*	*85 - 114*	*43.99*	*2.64*	*20*	
Surr: Dibromofluoromethane	*43.51*	*1.0*	*50*	*0*	*87.0*	*80 - 119*	*44.45*	*2.13*	*20*	
Surr: Toluene-d8	*46.37*	*1.0*	*50*	*0*	*92.7*	*89 - 112*	*49.29*	*6.1*	*20*	

The following samples were analyzed in this batch:

HS20101089-01	HS20101089-02	HS20101089-03	HS20101089-04
HS20101089-05	HS20101089-06	HS20101089-07	HS20101089-08
HS20101089-09	HS20101089-10	HS20101089-11	

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101089**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 30-Oct-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101089

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	Sub
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	WET209
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	VOA091
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	RSK008
HS20101089-01	16WW44-201019	Login	10/21/2020 2:15:30 PM	PMG	Sub

ALS Houston, US Date: 30-Oct-20

Sample Receipt Checklist

Work Order ID: HS20101089 **Date/Time Received:** 21-Oct-2020 09:30

Client Name: CBI-Houston **Received by:** Jared R. Makan

Completed By:	/S/ Paresh M. Giga	21-Oct-2020 13:23	**Reviewed by:**	/S/ RJ Modashia	21-Oct-2020 16:37
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.5C U/c	IR31	
Cooler(s)/Kit(s):	43016		
Date/Time sample(s) sent to storage:	10/21/2020 14:40		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101089

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: LHAAP 16 October 2020

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW44-201019	WG	10/19/20/0750		4	X					X					
16WW37-201019	WG	10/19/20/0835		4	X					X					
16WW38-201019	WG	10/19/20/0915		4	X					X					
16WW14-201019	WG	10/19/20/1000		4	X					X					
16WW34-201019	WG	10/19/20/1045		4	X					X					
16WW34-201019-FD	WG	10/19/20/1045		4	X					X					
16WW33-201019	WG	10/19/20/1130		4	X					X					
16WW32-201019	WG	10/19/20/1215		4	X					X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Mummy	10/21/20	07:30							

Remarks: Cooler 43016 Temp 1.5°C 1231 CFO

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: APTIM LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. 501032
Job: **LHAAP 16 October 2020**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW31-201019	WG	10/19/20/1255		4	X					X					
16WW46-201019	WG	10/19/20/1340		4	X					X					
TRIP BLANK-201019	W	10/19/20		2	X										

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/20/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Mummy	10/21/20	09:30							

Remarks:

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101089

(Word) S:\M-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

13016

CUSTODY SEAL

Date: 10/20/20 Time: 1430
Name: Seth Beesinger
Company: BHMTX

Seal Broken By: SW
Date: 10/21/20

U3016

Must Deliver Next Business Day
Time and Tempature Sensitive!

U3016

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
AP11M
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 23JUN20
ACTWGT: 1.00 LB MAN
CAD: 3001300/INFE3211
DIMS: 19x16x1 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 16 – 8072394 – RJ
RMA:

FedEx Express

FedEx
TRK# 0221 1891 8877 8325

WED - 21 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

October 26, 2020 Service Request No:E2001014

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101089

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001014.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001014
Project:	HS20101089	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Ten samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD was performed on an unrelated sample.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001014
Project: HS20101089

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001014-001	16WW44-201019	10/19/2020	0750
E2001014-002	16WW37-201019	10/19/2020	0835
E2001014-003	16WW38-201019	10/19/2020	0915
E2001014-004	16WW14-201019	10/19/2020	1000
E2001014-005	16WW34-201019	10/19/2020	1045
E2001014-006	16WW34-201019-FD	10/19/2020	1045
E2001014-007	16WW33-201019	10/19/2020	1130
E2001014-008	16WW32-201019	10/19/2020	1215
E2001014-009	16WW31-201019	10/19/2020	1255
E2001014-010	16WW46-201019	10/19/2020	1340

Service Request Summary

Folder #: **E2001014**
Client Name: ALS Environmental - US
Project Name: HS20101089
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101089
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001014-001	16WW44-201019	Ground Water	10/19/20 0750	**IV**
E2001014-002	16WW37-201019	Ground Water	10/19/20 0835	**IV**
E2001014-003	16WW38-201019	Ground Water	10/19/20 0915	**IV**
E2001014-004	16WW14-201019	Ground Water	10/19/20 1000	**IV**
E2001014-005	16WW34-201019	Ground Water	10/19/20 1045	**IV**
E2001014-006	16WW34-201019-FD	Ground Water	10/19/20 1045	**IV**
E2001014-007	16WW33-201019	Ground Water	10/19/20 1130	**IV**
E2001014-008	16WW32-201019	Ground Water	10/19/20 1215	**IV**
E2001014-009	16WW31-201019	Ground Water	10/19/20 1255	**IV**
E2001014-010	16WW46-201019	Ground Water	10/19/20 1340	**IV**

Service Request Summary

Folder #:	**E2001014**
Client Name:	ALS Environmental - US
Project Name:	HS20101089
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	10/22/20
Internal Due Date:	11/4/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20101089
EDD:	No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	10	Level II due 11/4,level IV 11/11

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14983**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101089
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101089-01**	**16WW44-201019**	**Groundwater**	**19 Oct 2020 07:50**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101089-02**	**16WW37-201019**	**Groundwater**	**19 Oct 2020 08:35**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101089-03**	**16WW38-201019**	**Groundwater**	**19 Oct 2020 09:15**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101089-04**	**16WW14-201019**	**Groundwater**	**19 Oct 2020 10:00**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101089-05**	**16WW34-201019**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101089-06**	**16WW34-201019-FD**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101089-07**	**16WW33-201019**	**Groundwater**	**19 Oct 2020 11:30**
	SUB_Perch-6850			04 Nov 2020
8.	**HS20101089-08**	**16WW32-201019**	**Groundwater**	**19 Oct 2020 12:15**
	SUB_Perch-6850			04 Nov 2020
9.	**HS20101089-09**	**16WW31-201019**	**Groundwater**	**19 Oct 2020 12:55**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14983**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED		DUE DATE
	SUB_Perch-6850		04 Nov 2020
10. HS20101089-10	**16WW46-201019**	**Groundwater**	**19 Oct 2020 13:40**
	SUB_Perch-6850		04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. Mangum Date/Time: 10/22/20

Received By: [signature] Date/Time: 10/22/20 1105

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: IH

Client/Project: ALS-H

Thermometer ID: IR31

Date/Time Received: 10/22/20 Initials: IH

Date/Time Logged in: 10/22/20 Initials: IH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	IH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW44-201019	**Units:**	µg/L
Lab Code:	E2001014-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:42	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0835
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW37-201019	**Units:**	µg/L
Lab Code:	E2001014-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.393**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 12:59	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0915
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW38-201019	**Units:**	µg/L
Lab Code:	E2001014-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:01	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1000
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW14-201019	**Units:**	µg/L
Lab Code:	E2001014-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:09	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019	**Units:**	µg/L
Lab Code:	E2001014-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:17	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019-FD	**Units:**	µg/L
Lab Code:	E2001014-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:24	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1130
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW33-201019	**Units:**	µg/L
Lab Code:	E2001014-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0259**	J	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:32	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1215
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW32-201019	**Units:**	µg/L
Lab Code:	E2001014-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:40	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1255
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW31-201019	**Units:**	µg/L
Lab Code:	E2001014-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:48	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1340
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW46-201019	**Units:**	µg/L
Lab Code:	E2001014-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:04	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	10/26/20

Matrix Spike Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS Matrix Spike EQ2000533-04				Batch QCDMS Duplicate Matrix Spike EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

Initial Calibration

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20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte	Curve Fit	Weighting		
Perchlorate	**Linear**	**Equal**	**R2 = 0.9997655579102110**	**Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

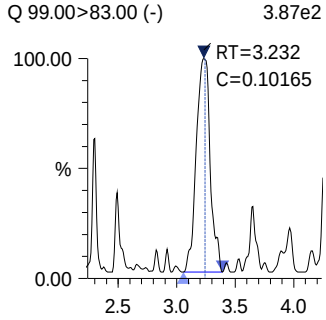
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

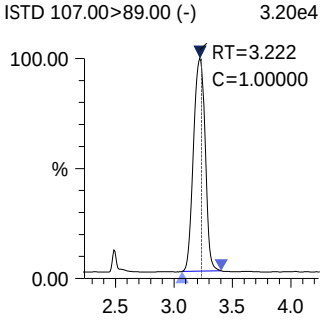
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

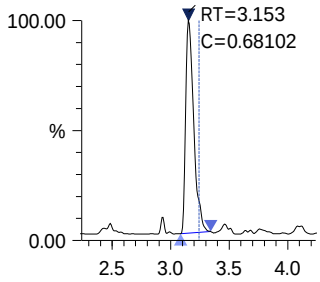
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

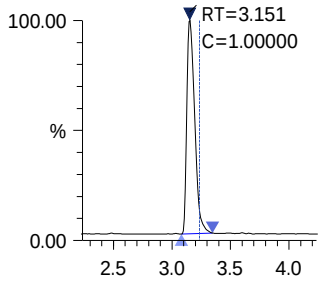
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

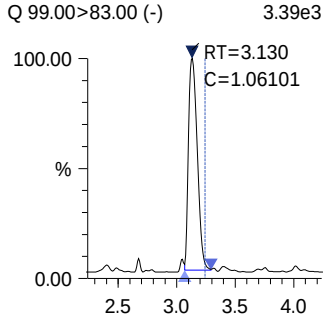
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

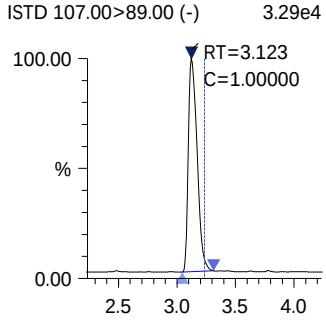
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

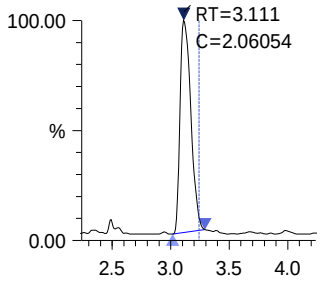
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

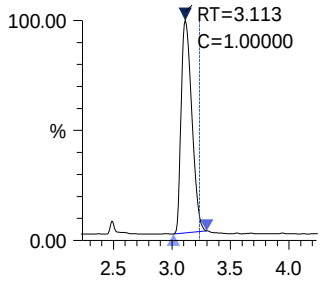
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

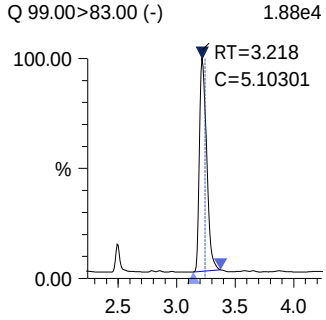
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

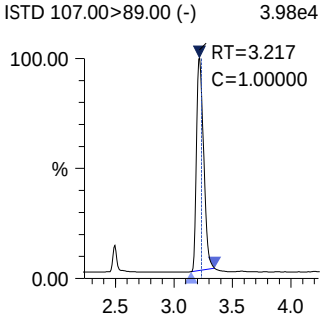
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

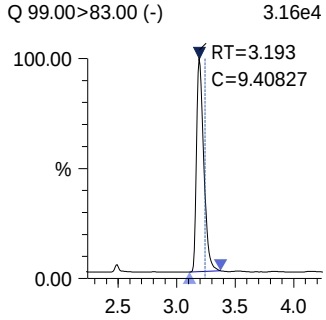
PERCHLORATE6

Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

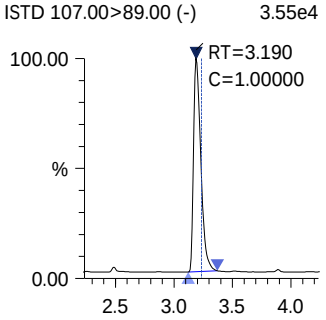
Perchlorate

Conc 9.40827
Area 136097



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693



ALS Group Houston

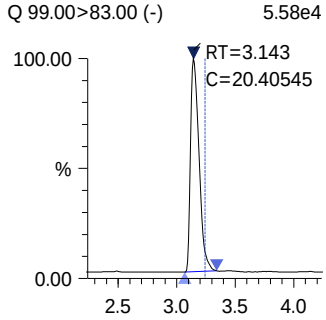
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

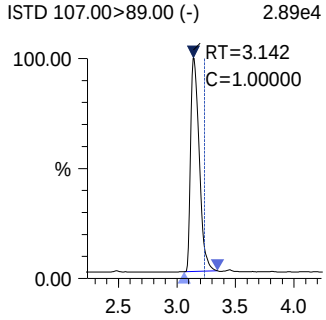
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

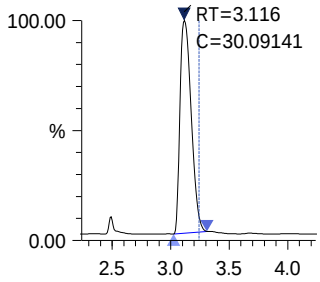
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

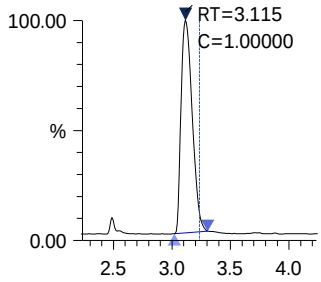
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

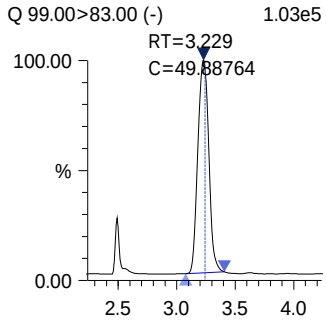
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

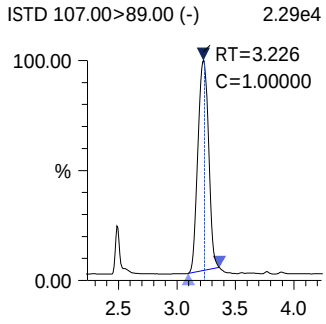
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

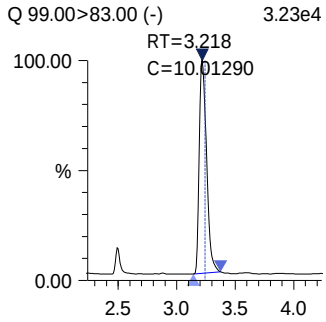
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

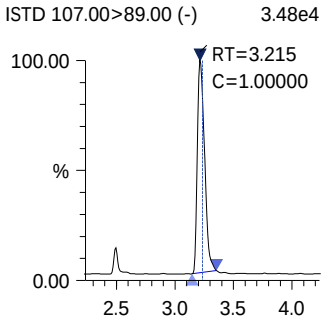
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201023

ALS Environmental

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201023_001	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:39
2	null		20201023_002	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:46
3	IB		20201023_003	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:04
4	IB		20201023_004	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:12
5	LODV		20201023_005	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:20
6	ICS		20201023_006	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:28
7	PERCHLORATE7		20201023_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 16:35
8	EQ2000532-01		20201023_008	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:43
9	EQ2000532-02		20201023_009	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:51
10	EQ2000532-03		20201023_010	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:59
11	E2001001-001		20201023_011	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:07
12	E2001001-002		20201023_012	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:15
13	E2001001-003		20201023_013	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:23
14	E2001001-004		20201023_014	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:31
15	E2001001-005		20201023_015	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:39
16	E2001001-006		20201023_016	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:47
17	E2001001-007		20201023_017	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:55
18	PERCHLORATE7		20201023_018	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 18:02
19	E2001001-008		20201023_019	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:10
20	E2001002-001		20201023_020	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:18
21	E2001003-001		20201023_021	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:26
22	E2001003-002		20201023_022	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:34
23	E2001003-003		20201023_023	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:42
24	E2001003-004		20201023_024	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:50
25	EQ2000533-01		20201023_025	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:58
26	EQ2000533-02		20201023_026	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:06
27	EQ2000533-03		20201023_027	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:13
28	EQ2000533-04		20201023_028	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:21
29	PERCHLORATE7		20201023_029	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 19:29
30	EQ2000533-05		20201023_030	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:37
31	E2001014-001		20201023_031	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:45
32	E2001014-002		20201023_032	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:53
33	E2001014-003		20201023_033	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:01
34	E2001014-004		20201023_034	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:09
35	E2001014-005		20201023_035	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:17
36	E2001014-006		20201023_036	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:24
37	E2001014-007		20201023_037	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:32
38	E2001014-008		20201023_038	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:40
39	E2001014-009		20201023_039	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:48
40	PERCHLORATE7		20201023_040	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 20:56
41	E2001014-010		20201023_041	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:04
42	E2001015-001		20201023_042	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:12
43	E2001015-002		20201023_043	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:20
44	E2001015-003		20201023_044	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:28
45	E2001015-004		20201023_045	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:36
46	E2001015-005		20201023_046	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:44
47	E2001015-006		20201023_047	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:52
48	E2001015-007		20201023_048	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:00
49	E2001016-001		20201023_049	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:07
50	PERCHLORATE7		20201023_050	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 22:15
51	null		20201023_051	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:20
52	null		20201023_052	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:25
53								
54								
55								

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒	3100807-05	10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:07
26								
27								
28								
29								
30								
31								
32								
33								
34								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_029

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.82	NA	NA	NA	-1.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_040

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.53	NA	NA	NA	-4.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_050

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.67	NA	NA	NA	-3.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.74	NA	NA	NA	-2.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.61	NA	NA	NA	-3.9	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_024

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20 19:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201023\20201023_029
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000536-01
Analysis Lot: 700781
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-01	205,363	3.14
16WW38-201019	E2001014-003	137,403	3.12
16WW14-201019	E2001014-004	94,522	3.07
16WW34-201019	E2001014-005	202,842	3.15
16WW34-201019-FD	E2001014-006	179,043	3.19
16WW33-201019	E2001014-007	146,998	3.16
16WW32-201019	E2001014-008	148,270	3.11
16WW31-201019	E2001014-009	181,986	3.10

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 20:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_040	**Lab Code:**	EQ2000536-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-02	158,162	3.19
16WW46-201019	E2001014-010	85,083	3.12

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 22:15

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_050	**Lab Code:**	EQ2000536-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-03	189,894	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20 10:26

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_007
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-01
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-01	226,473	3.06
16WW44-201019	E2001014-001	253,840	3.06
Method Blank	EQ2000533-01	248,798	3.06
Lab Control Sample	EQ2000533-02	253,069	3.07
Duplicate Lab Control Sample	EQ2000533-03	254,501	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20 11:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-02
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-02	224,624	3.06
Batch QCMS	EQ2000533-04	174,515	3.06
Batch QCDMS	EQ2000533-05	173,226	3.06
Batch QC	E2001015-003	166,464	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20 12:47

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_024
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-03
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-03	229,585	3.07
16WW37-201019	E2001014-002	173,136	2.98

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 13:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_026	**Lab Code:**	EQ2000540-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-04	230,699	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

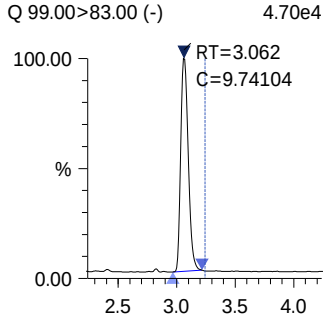
PERCHLORATE7

Date acquired: 10/26/2020 10:26:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 10:26:38 AM	206255	9.74104	20201026_007	3.062	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 10:26:38 AM	226473	1.00000	20201026_007	3.060	25.0000	1.0000	4

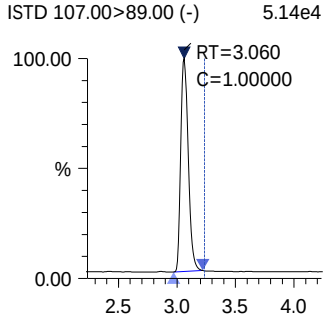
Perchlorate

Conc 9.74104
Area 206255



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 226473



ALS Group Houston

EQ2000533-01

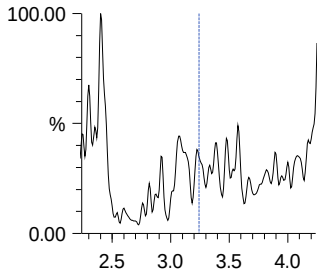
Date acquired: 10/26/2020 11:06:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_012.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-01	10/26/2020 11:06:08 AM	----	----	20201026_012	----	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000533-01	10/26/2020 11:06:08 AM	248798	1.00000	20201026_012	3.064	25.0000	1.0000	17

Perchlorate

Conc ----
Area ----

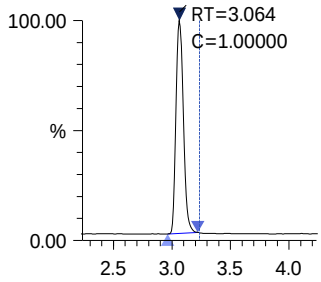
Q 99.00>83.00 (-) 2.84e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 248798

ISTD 107.00>89.00 (-) 5.74e4



ALS Group Houston

EQ2000533-02

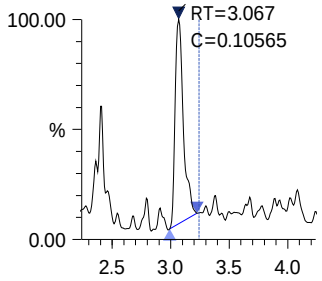
Date acquired: 10/26/2020 11:13:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_013.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-02	10/26/2020 11:13:59 AM	3757	0.10565	20201026_013	3.067	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000533-02	10/26/2020 11:13:59 AM	253069	1.00000	20201026_013	3.065	25.0000	1.0000	18

Perchlorate

Conc 0.10565
Area 3757

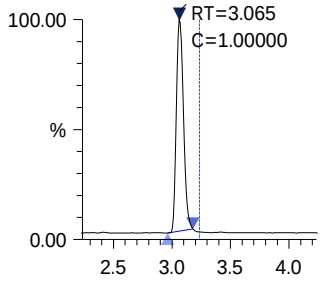
Q 99.00>83.00 (-) 8.11e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 253069

ISTD 107.00>89.00 (-) 6.15e4



ALS Group Houston

EQ2000533-03

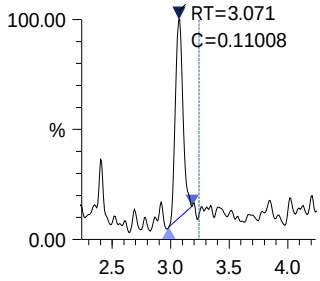
Date acquired: 10/26/2020 11:21:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_014.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-03	10/26/2020 11:21:53 AM	3884	0.11008	20201026_014	3.071	25.0000	1.0000	19
Sodium Perchlorate-18O4_IS	EQ2000533-03	10/26/2020 11:21:53 AM	254501	1.00000	20201026_014	3.065	25.0000	1.0000	19

Perchlorate

Conc 0.11008
Area 3884

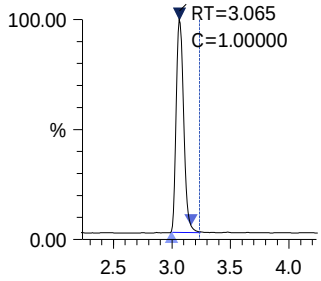
Q 99.00>83.00 (-) 9.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 254501

ISTD 107.00>89.00 (-) 6.16e4



ALS Group Houston

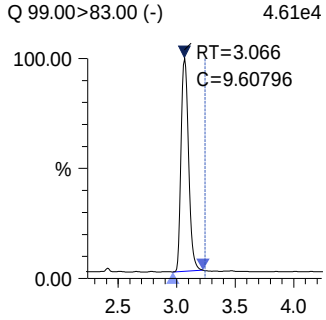
PERCHLORATE7

Date acquired: 10/26/2020 11:29:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 11:29:45 AM	201792	9.60796	20201026_015	3.066	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 11:29:45 AM	224624	1.00000	20201026_015	3.064	25.0000	1.0000	4

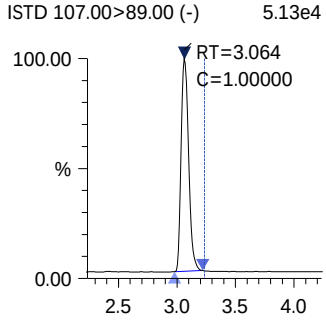
Perchlorate

Conc 9.60796
Area 201792



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 224624



ALS Group Houston

EQ2000533-04X10

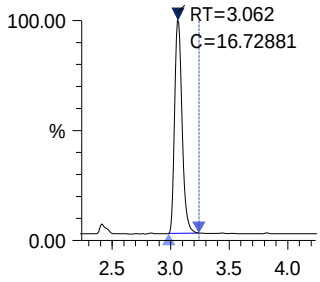
Date acquired: 10/26/2020 12:16:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_020.lcd
Vial: 20 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-04X10	10/26/2020 12:16:12 PM	272319	16.72881	20201026_020	3.062	25.0000	1.0000	20
Sodium Perchlorate-18O4_IS	EQ2000533-04X10	10/26/2020 12:16:12 PM	174515	1.00000	20201026_020	3.060	25.0000	1.0000	20

Perchlorate

Conc 16.72881
Area 272319

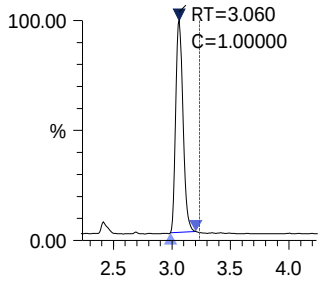
Q 99.00>83.00 (-) 6.29e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174515

ISTD 107.00>89.00 (-) 4.10e4



ALS Group Houston

EQ2000533-05X10

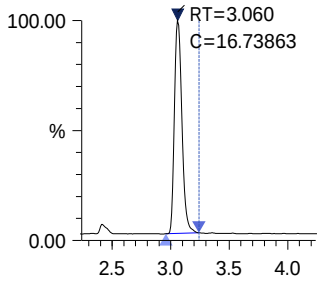
Date acquired: 10/26/2020 12:24:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_021.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-05X10	10/26/2020 12:24:04 PM	270465	16.73863	20201026_021	3.060	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	EQ2000533-05X10	10/26/2020 12:24:04 PM	173226	1.00000	20201026_021	3.058	25.0000	1.0000	21

Perchlorate

Conc 16.73863
Area 270465

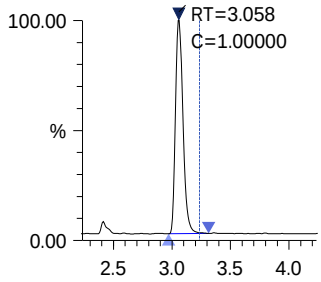
Q 99.00>83.00 (-) 6.19e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173226

ISTD 107.00>89.00 (-) 3.91e4



ALS Group Houston

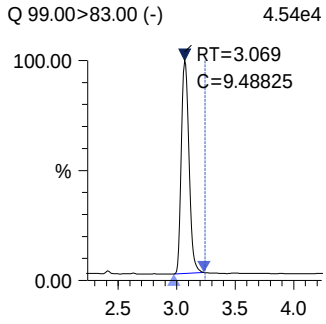
PERCHLORATE7

Date acquired: 10/26/2020 12:47:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_024.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 12:47:43 PM	203693	9.48825	20201026_024	3.069	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 12:47:43 PM	229585	1.00000	20201026_024	3.067	25.0000	1.0000	4

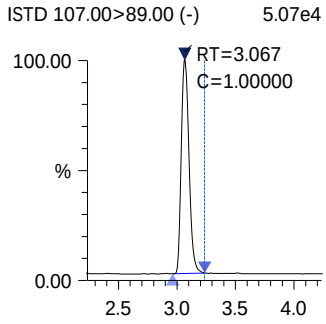
Perchlorate

Conc 9.48825
Area 203693



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 229585



HS20101089 8260_W_DOD Raw Data

ALS WO# HS20101089

MSVOA06 -Logbook

Batch: 42421 **Analyst:** Presenta Cabascango

Date: 10-25-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	10-25-2020 04:21 pm	1.00	50 mL	50 mL	X102501.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	10-25-2020 04:42 pm	1.00	50 mL	50 mL	X102502.D	Liquid	Y	NA
	0.10 uL cal std/100 mL DI									
3	VSTD000.5	ICAL2	10-25-2020 05:24 pm	1.00	50 mL	50 mL	X102503.D	Liquid	Y	NA
	0.10 uL cal std/50 mL DI									
4	VSTD001	ICAL3	10-25-2020 05:45 pm	1.00	50 mL	50 mL	X102504.D	Liquid	Y	NA
	0.20 uL cal std/50 mL DI									
5	VSTD002	ICAL4	10-25-2020 06:06 pm	1.00	50 mL	50 mL	X102505.D	Liquid	Y	NA
	0.40 uL cal std/50 mL DI									
6	VSTD005	ICAL5	10-25-2020 06:27 pm	1.00	50 mL	50 mL	X102506.D	Liquid	Y	NA
	1.0 uL cal std/50 mL DI									
7	VSTD020	ICAL6	10-25-2020 06:48 pm	1.00	50 mL	50 mL	X102507.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
8	VSTD050	ICAL7	10-25-2020 07:09 pm	1.00	50 mL	50 mL	X102508.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
9	VSTD100	ICAL8	10-25-2020 07:29 pm	1.00	50 mL	50 mL	X102509.D	Liquid	Y	NA
	20 uL cal std/50 mL DI									
10	VSTD150	ICAL9	10-25-2020 07:50 pm	1.00	50 mL	50 mL	X102510.D	Liquid	Y	NA
	30 uL cal std/50 mL DI									
11	VSTD200	ICAL	10-25-2020 08:11 pm	1.00	50 mL	50 mL	X102511.D	Liquid	Y	NA
	40 uL cal std/50 mL DI									
12	BLANK	SAMP	10-25-2020 08:32 pm	1.00	50 mL	50 mL	X102512.D	Liquid	Y	NA
13	BLANK	SAMP	10-25-2020 08:53 pm	1.00	50 mL	50 mL	X102513.D	Liquid	Y	NA
14	VSTD050	ICV	10-25-2020 09:14 pm	1.00	50 mL	50 mL	X102514.D	Liquid	Y	NA
	10 uL ical std/50 mL DI									
15	BLANK	SAMP	10-25-2020 09:35 pm	1.00	50 mL	50 mL	X102515.D	Liquid	Y	NA
16	VLCSW-201025	LCS	10-25-2020 09:56 pm	1.00	50 mL	50 mL	X102516.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
17	BLK	SAMP	10-25-2020 10:17 pm	1.00	50 mL	50 mL	X102517.D	Liquid	Y	NA
18	VBLKW-201025	MBLK	10-25-2020 10:38 pm	1.00	50 mL	50 mL	X102518.D	Liquid	Y	NA
19	HS20101167-11	SAMP	10-25-2020 10:59 pm	1.00	50 mL	50 mL	X102519.D	Liquid	Y	NA
20	HS20101167-01	SAMP	10-25-2020 11:21 pm	1.00	50 mL	50 mL	X102520.D	Liquid	Y	NA
21	HS20101167-01MS	MS	10-25-2020 11:42 pm	1.00	50 mL	50 mL	X102521.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
22	HS20101167-01MSD	MSD	10-26-2020 12:03 am	1.00	50 mL	50 mL	X102522.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
23	HS20101167-02	SAMP	10-26-2020 12:24 am	1.00	50 mL	50 mL	X102523.D	Liquid	Y	NA
24	HS20101167-03	SAMP	10-26-2020 12:45 am	1.00	50 mL	50 mL	X102524.D	Liquid	Y	NA
25	HS20101167-04	SAMP	10-26-2020 01:06 am	1.00	50 mL	50 mL	X102525.D	Liquid	Y	NA
26	HS20101167-05	SAMP	10-26-2020 01:27 am	1.00	50 mL	50 mL	X102526.D	Liquid	Y	NA
27	HS20101167-06	SAMP	10-26-2020 01:48 am	1.00	50 mL	50 mL	X102527.D	Liquid	Y	NA
28	HS20101167-07	SAMP	10-26-2020 02:09 am	1.00	50 mL	50 mL	X102528.D	Liquid	Y	NA
29	HS20101167-08	SAMP	10-26-2020 02:30 am	1.00	50 mL	50 mL	X102529.D	Liquid	Y	NA
30	HS20101167-09	SAMP	10-26-2020 02:51 am	1.00	50 mL	50 mL	X102530.D	Liquid	Y	NA
31	HS20101167-10	SAMP	10-26-2020 03:12 am	1.00	50 mL	50 mL	X102531.D	Liquid	Y	NA
32	HS20101049-01	SAMP	10-26-2020 03:33 am	1.00	50 mL	50 mL	X102532.D	Liquid	Y	NA
33	HS20101270-01	SAMP	10-26-2020 03:54 am	1.00	50 mL	50 mL	X102533.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-06
LCS/MS ID	
CAL STD ID	31106-52-01-02
BFB ID	31106-51-06
pH Paper	634-64-10

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
1,2-Dichloroethane	50.00	46.31	93	80-120
Trichloroethene	50.00	47.81	96	80-120
Methylene Chloride	50.00	43.89	88	80-120
cis-1,2-Dichloroethene	50.00	46.68	93	80-120
Vinyl Chloride	50.00	46.16	92	80-120
1,1,2-Trichloroethane	50.00	44.14	88	80-120
1,1-Dichloroethene	50.00	46.19	92	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Lab File ID: X102501 BFB Injection Date: 10/25/20

Instrument ID: VOA6 BFB Injection Time: 1621

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.0
75	30.0 - 60.0% of mass 95	58.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.4 (0.4)1
174	Greater than 50.0% of mass 95	89.4
175	5.0 - 9.0% of mass 174	7.9 (8.9)1
176	95.0 - 101.0% of mass 174	86.9 (97.2)1
177	5.0 - 9.0% of mass 176	4.6 (5.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X102502	10/25/20	1642
02	VSTD000.5	VSTD000.5	X102503	10/25/20	1724
03	VSTD001	VSTD001	X102504	10/25/20	1745
04	VSTD002	VSTD002	X102505	10/25/20	1806
05	VSTD005	VSTD005	X102506	10/25/20	1827
06	VSTD020	VSTD020	X102507	10/25/20	1848
07	VSTD050	VSTD050	X102508	10/25/20	1909
08	VSTD100	VSTD100	X102509	10/25/20	1929
09	VSTD150	VSTD150	X102510	10/25/20	1950
10	VSTD200	VSTD200	X102511	10/25/20	2011
11	ICV	ICV	X102514	10/25/20	2114
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Instrument ID: VOA6 Calibration Date(s): 10/25/20 10/25/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1642 2011

LAB FILE ID: RF0.25: X102502 RF0.5: X102503 RF1: X102504
RF2: X102505 RF5: X102506 RF20: X102507

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
1,2-Dichloroethane		0.637	0.568	0.501	0.543	0.544
Trichloroethene		0.381	0.339	0.298	0.298	0.347
Methylene Chloride		0.998	0.868	0.781	0.768	0.727
cis-1,2-Dichloroethene		0.789	0.854	0.729	0.765	0.758
Vinyl Chloride		1.990	1.608	1.560	1.358	1.533
1,1,2-Trichloroethane		0.371	0.338	0.317	0.355	0.317
1,1-Dichloroethene		1.458	1.408	1.256	1.196	1.172
4-Bromofluorobenzene		1363	2133	4602	10188	42426
Dibromofluoromethane		0.683	0.653	0.617	0.673	0.662
Toluene-d8		4504	5855	11754	31270	131486
1,2-Dichloroethane-d4		1543	2362	4999	11402	46344

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010108

Instrument ID: VOA6 Calibration Date(s): 10/25/20 10/25/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1642 2011

LAB FILE ID: RF50: X102508 RF100: X102509 RF150: X102510
RF200: X102511

COMPOUND	RF50	RF100	RF150	RF200
1,2-Dichloroethane	0.534	0.542	0.484	0.508
Trichloroethene	0.316	0.342	0.317	0.321
Methylene Chloride	0.670	0.761	0.771	0.767
cis-1,2-Dichloroethene	0.716	0.815	0.786	0.828
Vinyl Chloride	1.312	1.538	1.504	1.429
1,1,2-Trichloroethane	0.299	0.307	0.310	0.312
1,1-Dichloroethene	1.020	1.171	1.144	1.133
4-Bromofluorobenzene	108164	251093	410237	592427
Dibromofluoromethane	0.672	0.756	0.723	0.755
Toluene-d8	324408	742483	1192701	1743873
1,2-Dichloroethane-d4	123233	245566	392180	519723

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010108

Instrument ID: VOA6 Calibration Date(s): 10/25/20 10/25/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1642 2011

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
1,2-Dichloroethane	AVRG		0.54001827	8.254	15.000
Trichloroethene	AVRG		0.32886398	8.008	15.000
Methylene Chloride	AVRG		0.79011013	11.841	15.000
cis-1,2-Dichloroethene	AVRG		0.78242092	5.776	15.000
Vinyl Chloride	AVRG		1.53714306	12.735	15.000
1,1,2-Trichloroethane	AVRG		0.32523954	7.480	15.000
1,1-Dichloroethene	AVRG		1.21777783	11.302	15.000
4-Bromofluorobenzene	LINR	3.987e-002	2.00729845	0.9979045	0.9900000
Dibromofluoromethane	AVRG		0.68831108	6.846	15.000
Toluene-d8	LINR	3.444e-002	0.68472816	0.9978314	0.9900000
1,2-Dichloroethane-d4	LINR	6.198e-004	1.14170833	0.9993034	0.9900000

FORM VI VOA

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

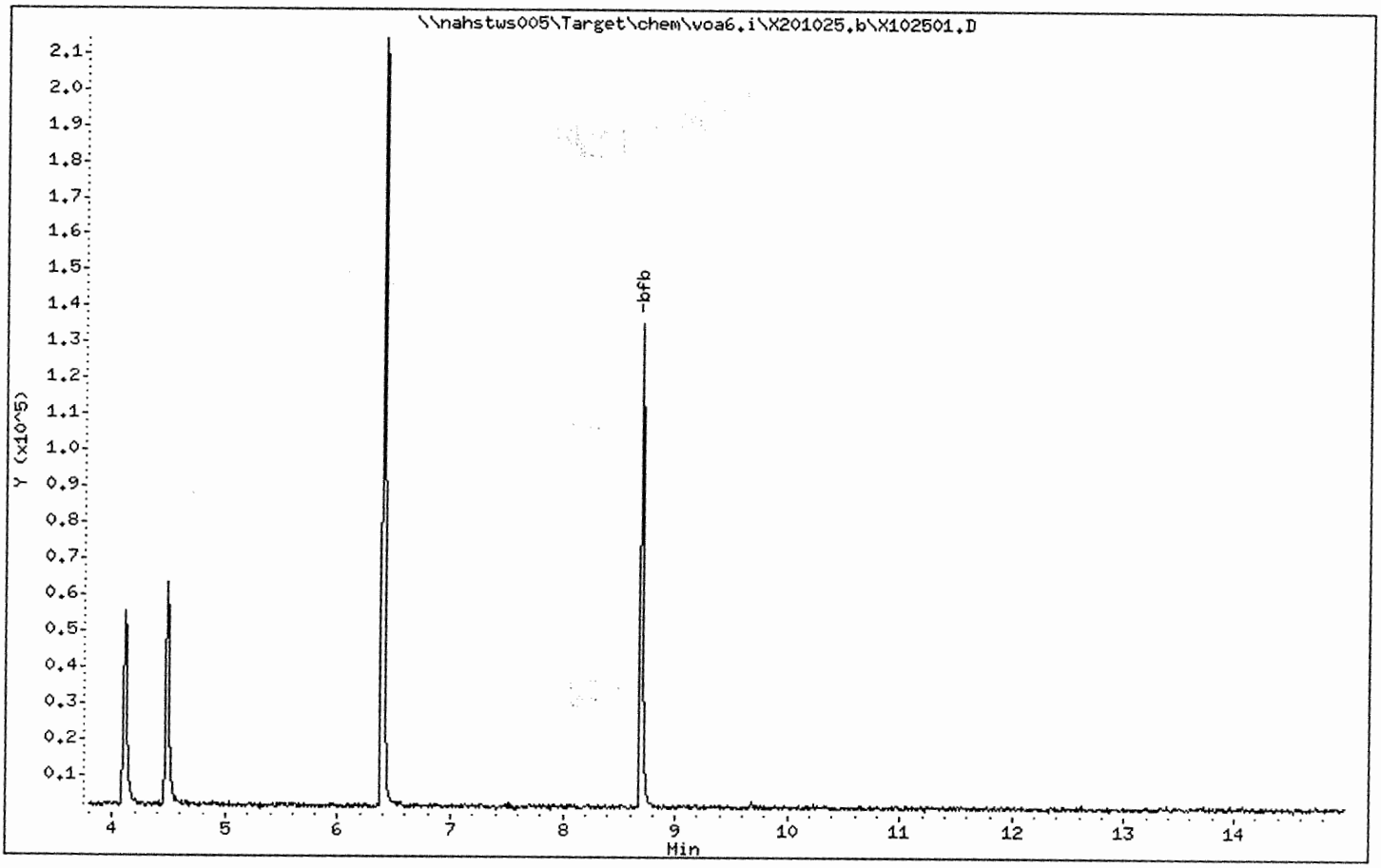
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

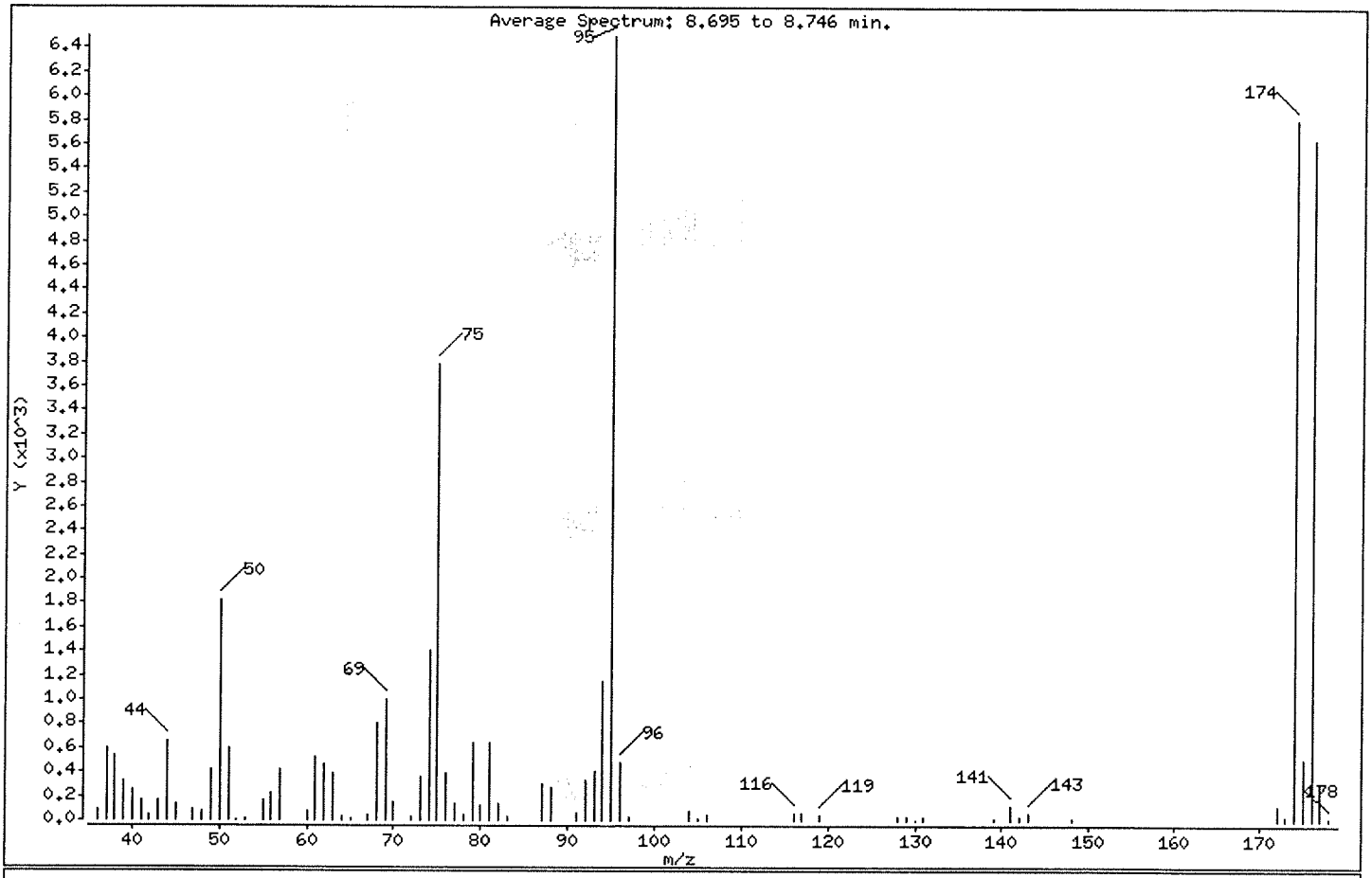
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	28.00
75	30.00 - 60.00% of mass 95	58.21
96	5.00 - 9.00% of mass 95	7.39
173	Less than 2.00% of mass 174	0.37 (0.41)
174	Greater than 50.00% of mass 95	89.43
175	5.00 - 9.00% of mass 174	7.93 (8.86)
176	95.00 - 101.00% of mass 174	86.92 (97.19)
177	5.00 - 9.00% of mass 176	4.59 (5.28)

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102501.D

Date : 25-OCT-2020 16:21

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X102501.D

Spectrum: Average Spectrum: 8.695 to 8.746 min.

Location of Maximum: 95.00

Number of points: 73

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	85	57.00	418	80.00	125	128.00	32
37.00	598	60.00	77	81.00	647	129.00	25
38.00	531	61.00	530	82.00	136	130.00	7
39.00	331	62.00	462	83.00	25	131.00	23
40.00	251	63.00	389	87.00	304	139.00	11
41.00	162	64.00	32	88.00	276	141.00	125
42.00	45	65.00	13	91.00	58	142.00	27
43.00	158	67.00	40	92.00	323	143.00	62
44.00	662	68.00	802	93.00	396	148.00	14
45.00	129	69.00	1002	94.00	1155	172.00	117
47.00	83	70.00	155	95.00	6497	173.00	24
48.00	71	72.00	34	96.00	480	174.00	5810
49.00	419	73.00	365	97.00	24	175.00	515
50.00	1819	74.00	1406	104.00	74	176.00	5647
51.00	597	75.00	3782	105.00	12	177.00	298
52.00	7	76.00	391	106.00	41	178.00	13
53.00	16	77.00	127	116.00	58		
55.00	158	78.00	44	117.00	53		
56.00	225	79.00	645	119.00	46		

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102502.D Page 1
Report Date: 30-Nov-2020 13:13

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102502.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 25-OCT-2020 16:42
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

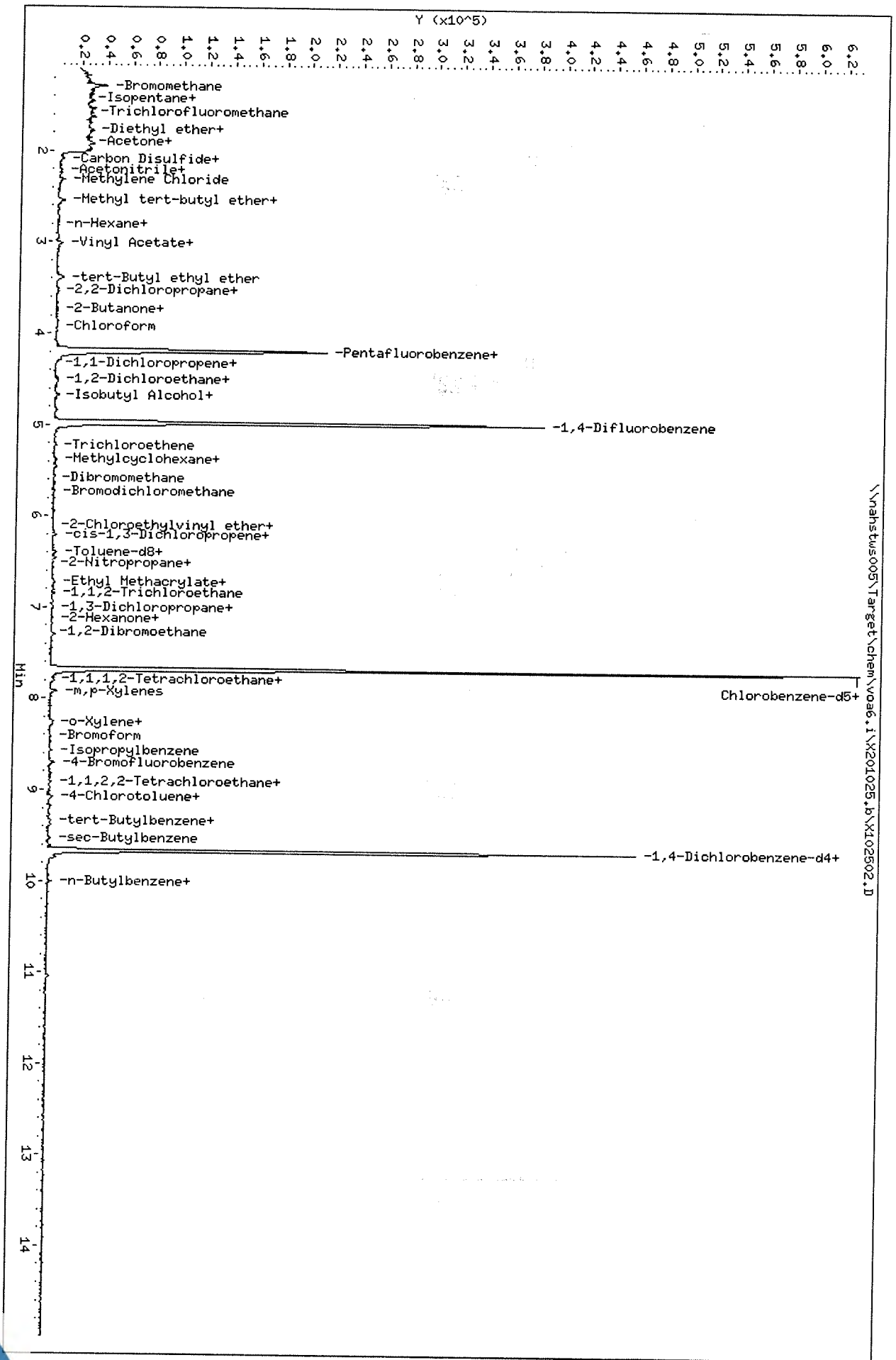
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150152	50.0000	
* 36 1,4-Difluorobenzene	114	4.977	4.977	(1.000)	287204	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	254000	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	90115	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	930	0.25000	0.38(Ta)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	1264	0.25000	2.49(a)
$ 30 Dibromofluoromethane	113	4.125	4.125	(0.985)	683	0.25000	0.33(aM)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	2041	0.25000	1.99(Ta)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	445	0.25000	0.26(aM)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	948	0.25000	0.25(aM)
33 1,2-Dichloroethane	62	4.576	4.576	(0.919)	1008	0.25000	0.32(a)
27 cis-1,2-Dichloroethene	96	3.559	3.559	(0.850)	630	0.25000	0.26(aM)
17 Methylene Chloride	84	2.313	2.313	(0.552)	1009	0.25000	0.42(aM)
38 Trichloroethene	130	5.228	5.228	(1.050)	367	0.25000	0.19(aM)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	1201	0.25000	0.26(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102502.D
Date : 25-OCT-2020 16:42
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D Page 1
Report Date: 30-Nov-2020 13:13

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 25-OCT-2020 17:24
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 16:42 Cal File: X102502.D
Als bottle: 6 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

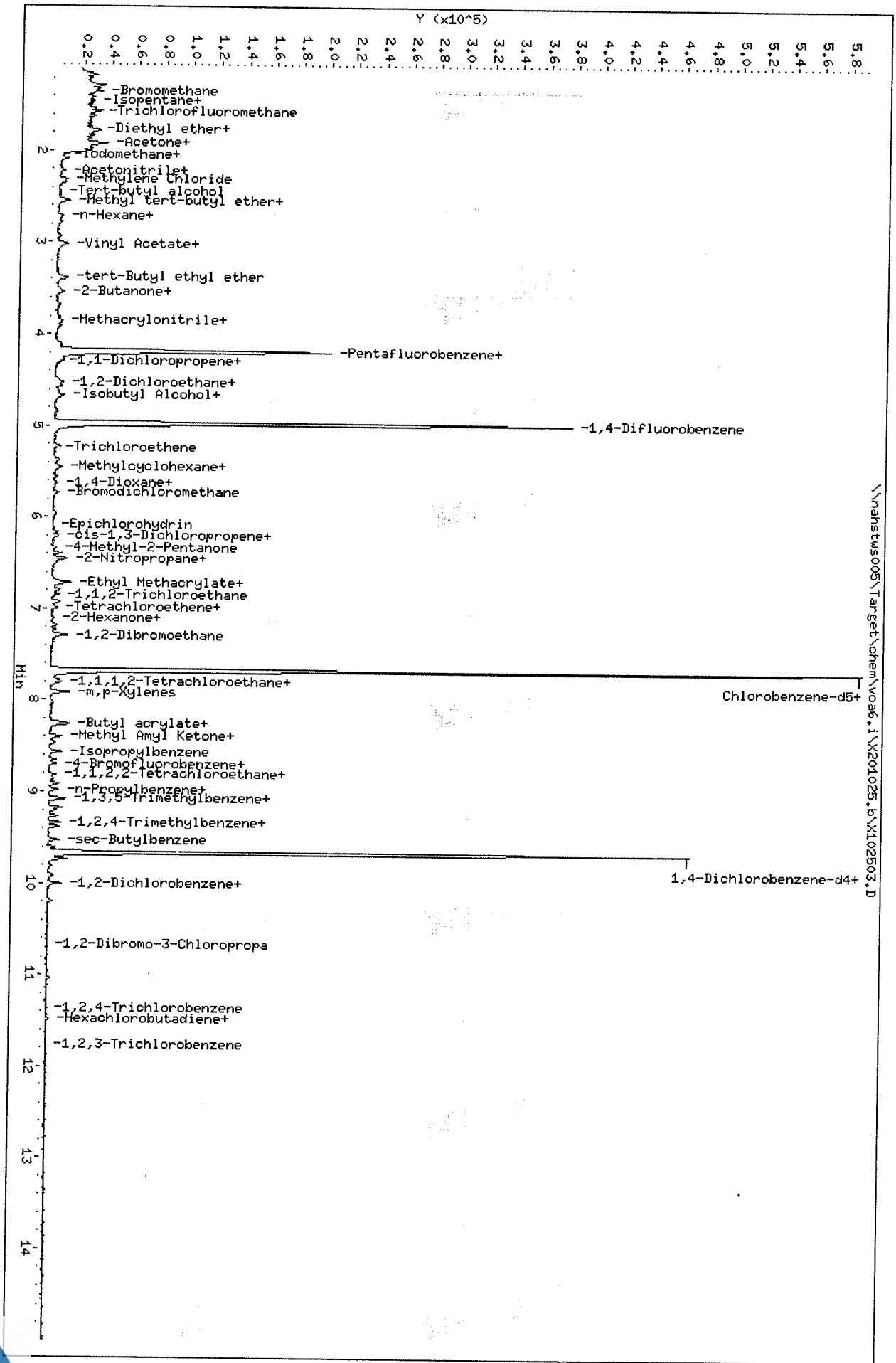
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	137561	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274062	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	236128	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	90393	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.490	4.490	(1.072)	1543	0.50000	0.67(TaM)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	1363	0.50000	2.57(a)
$ 30 Dibromofluoromethane	113	4.118	4.118	(0.983)	940	0.50000	0.49(a)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	4504	0.50000	2.37(Ta)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.894)	877	0.50000	0.57(aM)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	2005	0.50000	0.59(aM)
33 1,2-Dichloroethane	62	4.583	4.583	(0.922)	1745	0.50000	0.58(a)
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	1086	0.50000	0.50(aM)
17 Methylene Chloride	84	2.320	2.320	(0.554)	1373	0.50000	0.63(a)
38 Trichloroethene	130	5.235	5.235	(1.053)	1044	0.50000	0.57(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	2738	0.50000	0.64(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

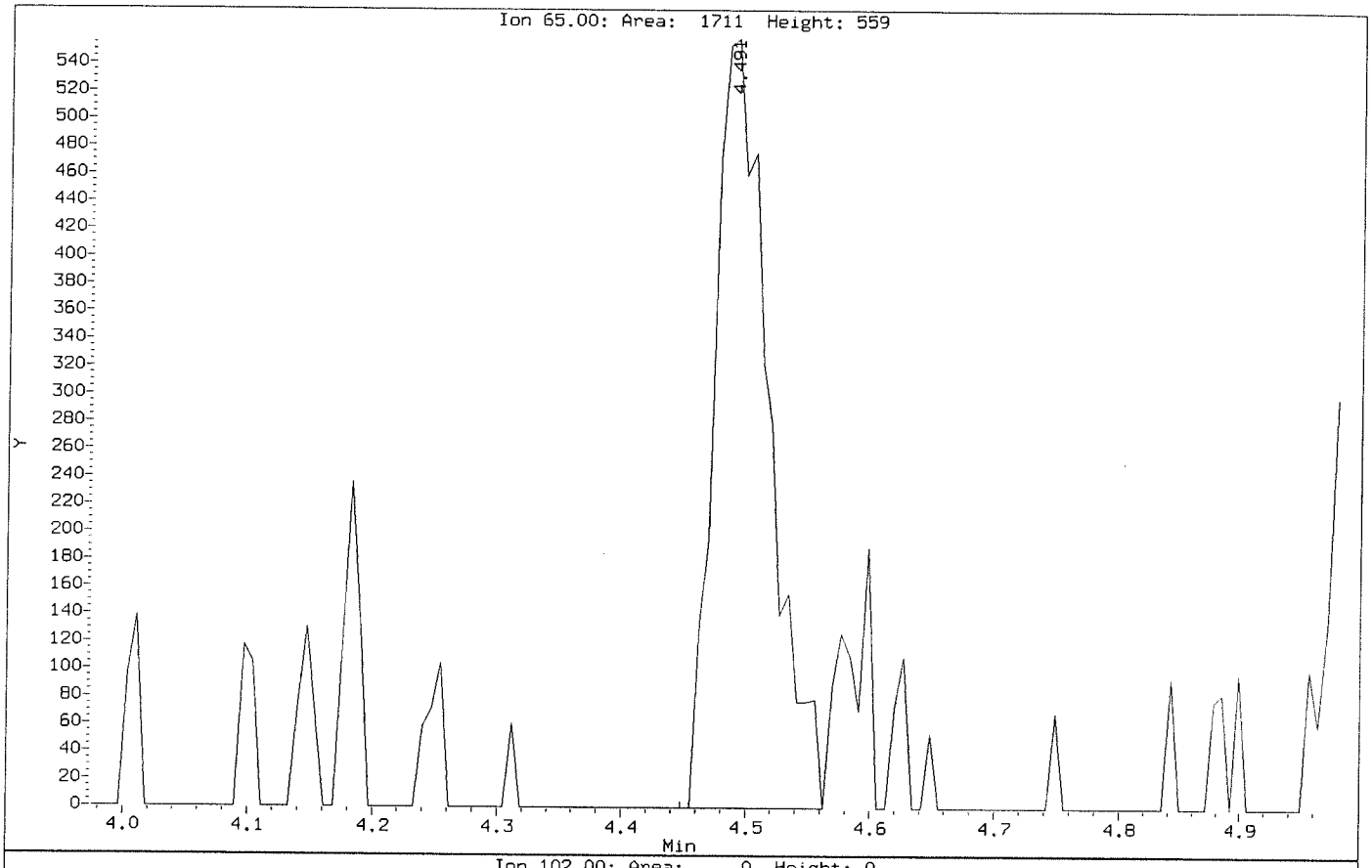


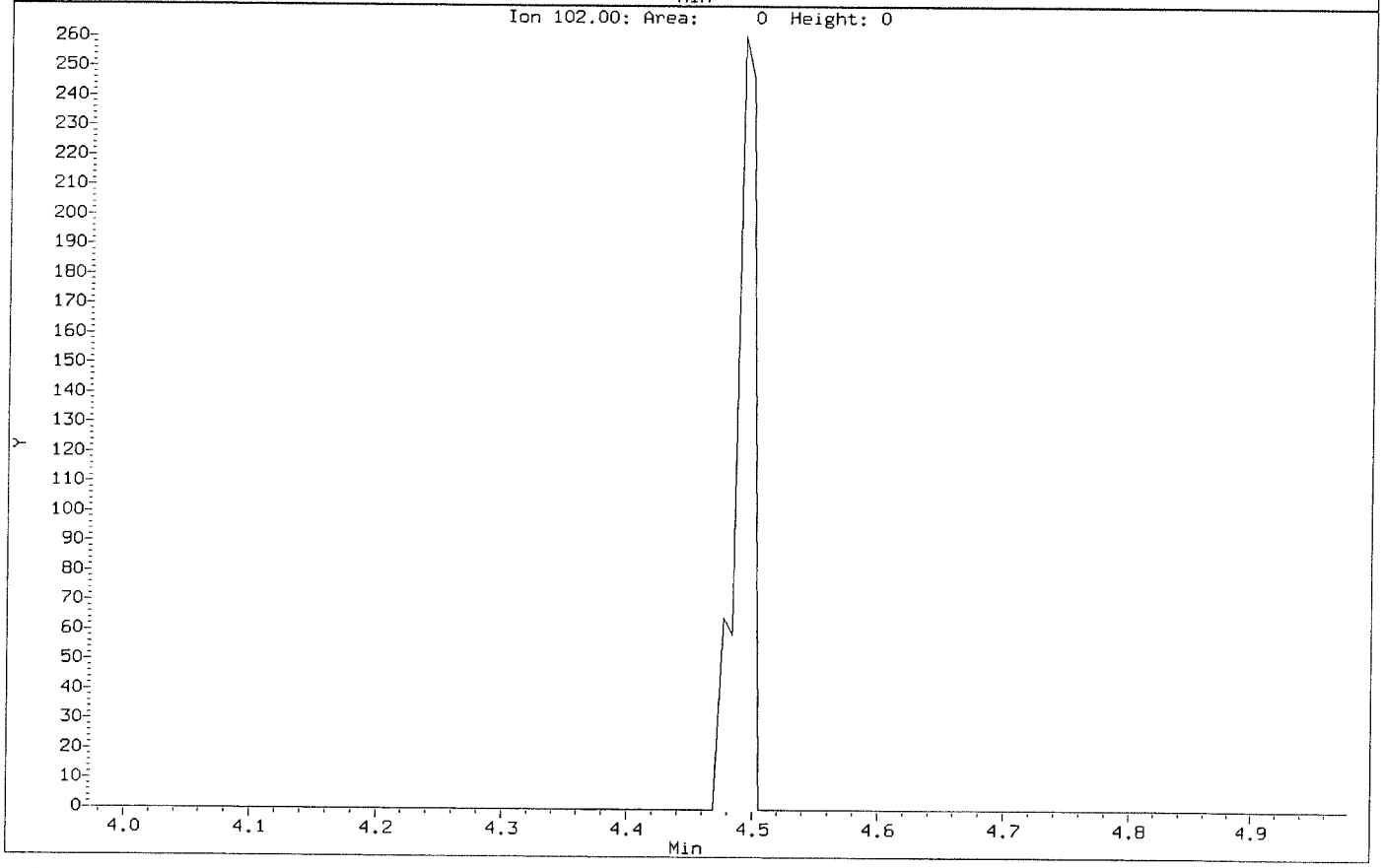
Data File: \\nahstus005\Target\chem\voa6.i\X201025.b\X102503.D
Date : 25-OCT-2020 17:24
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

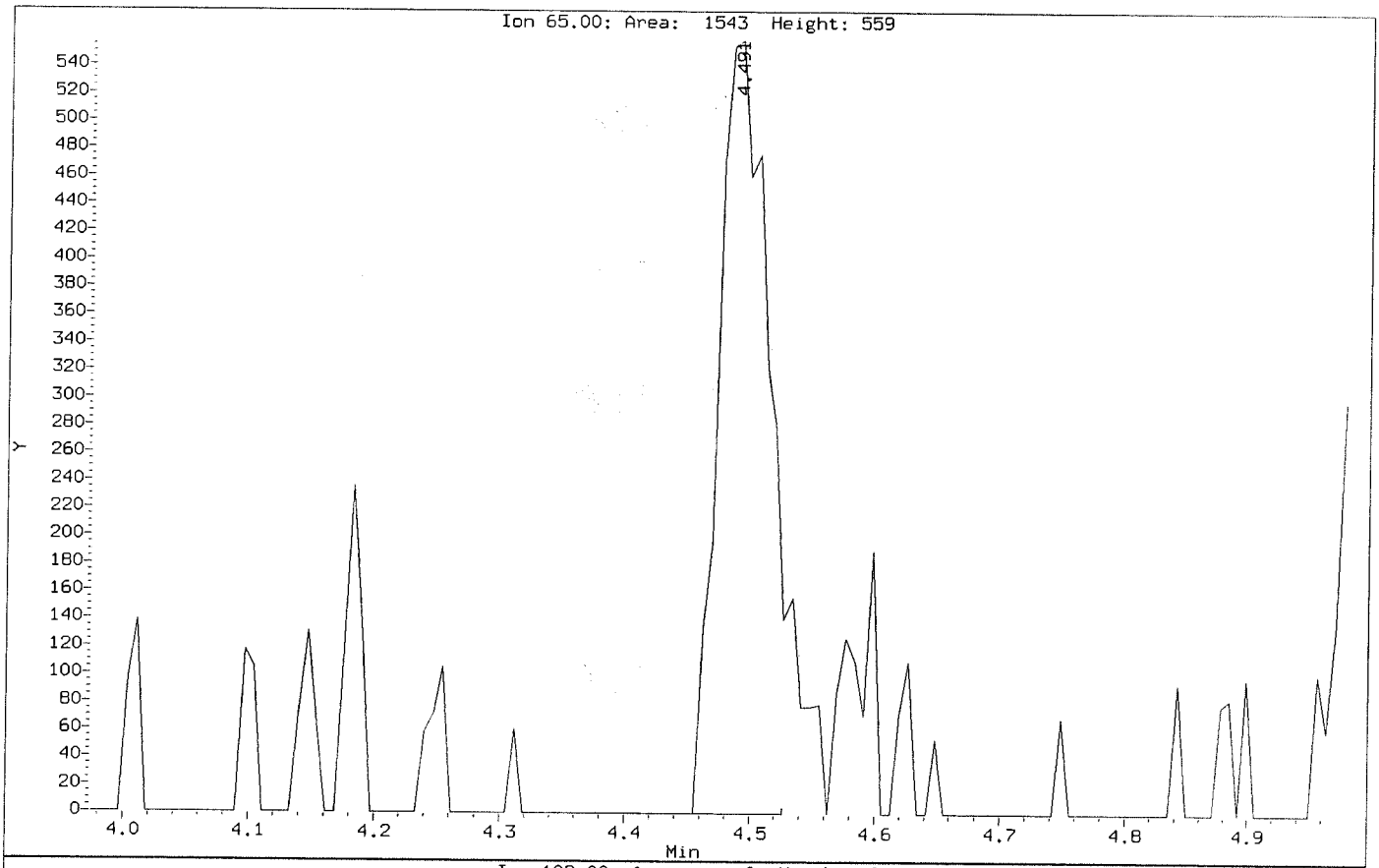
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

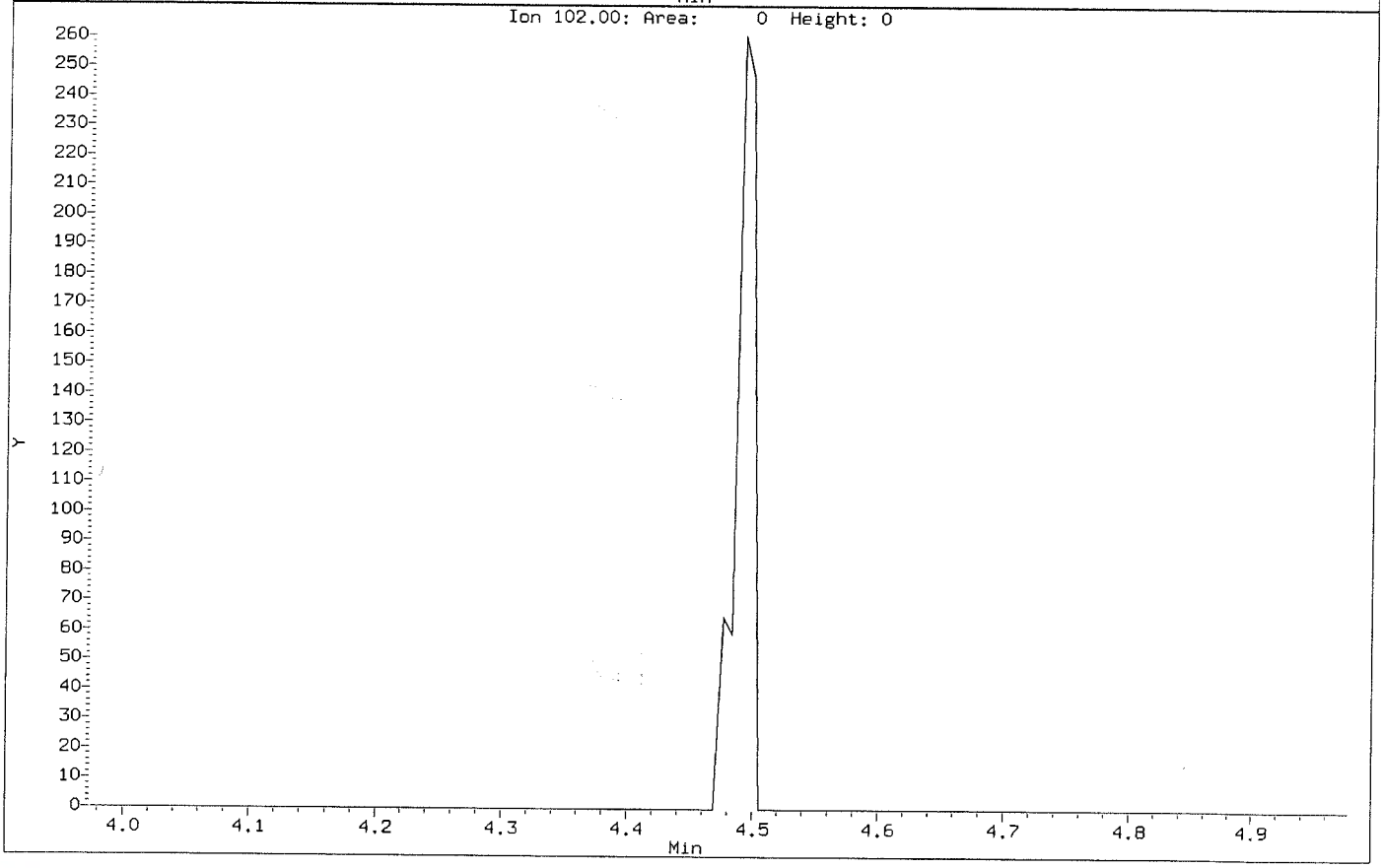




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

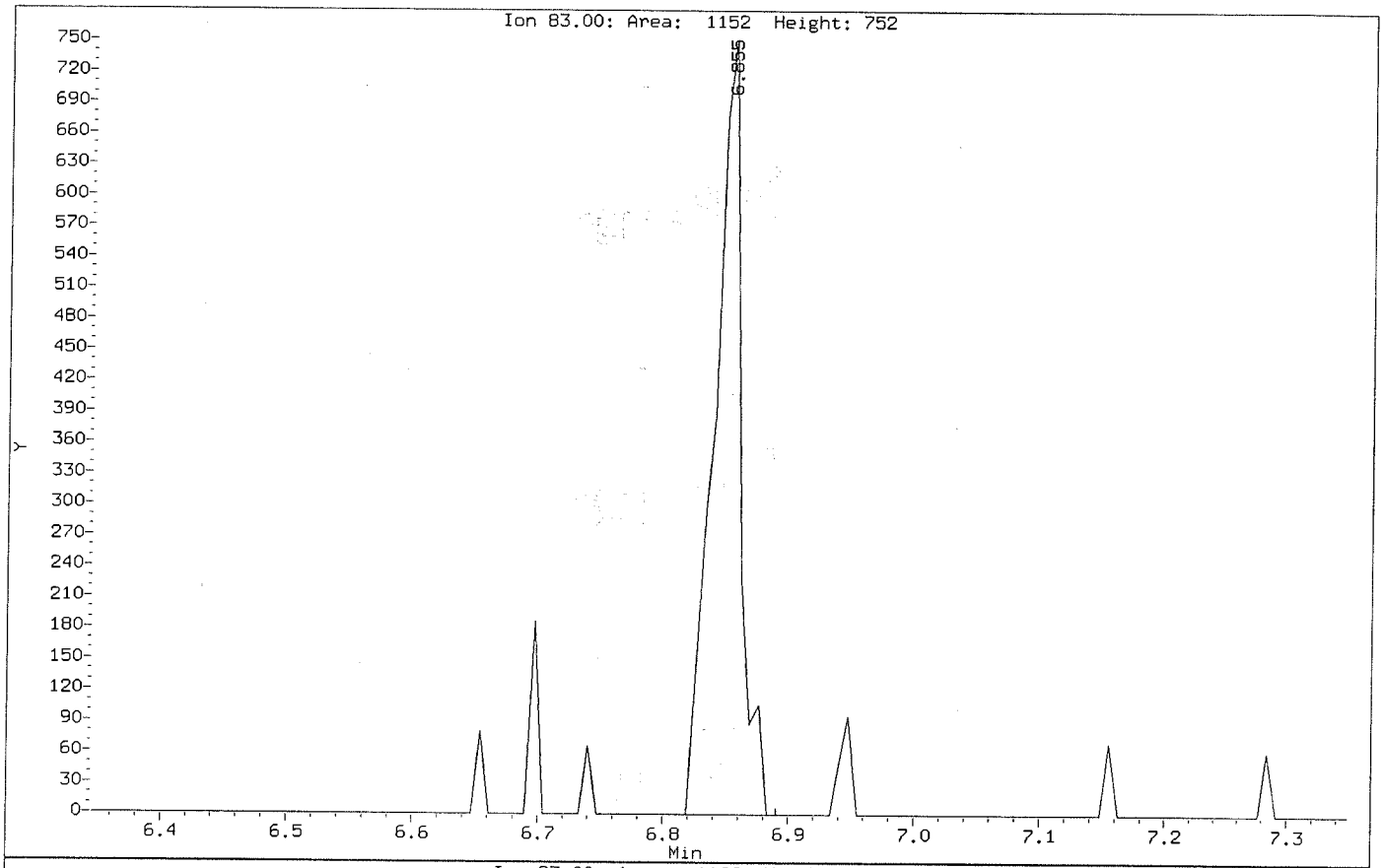
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

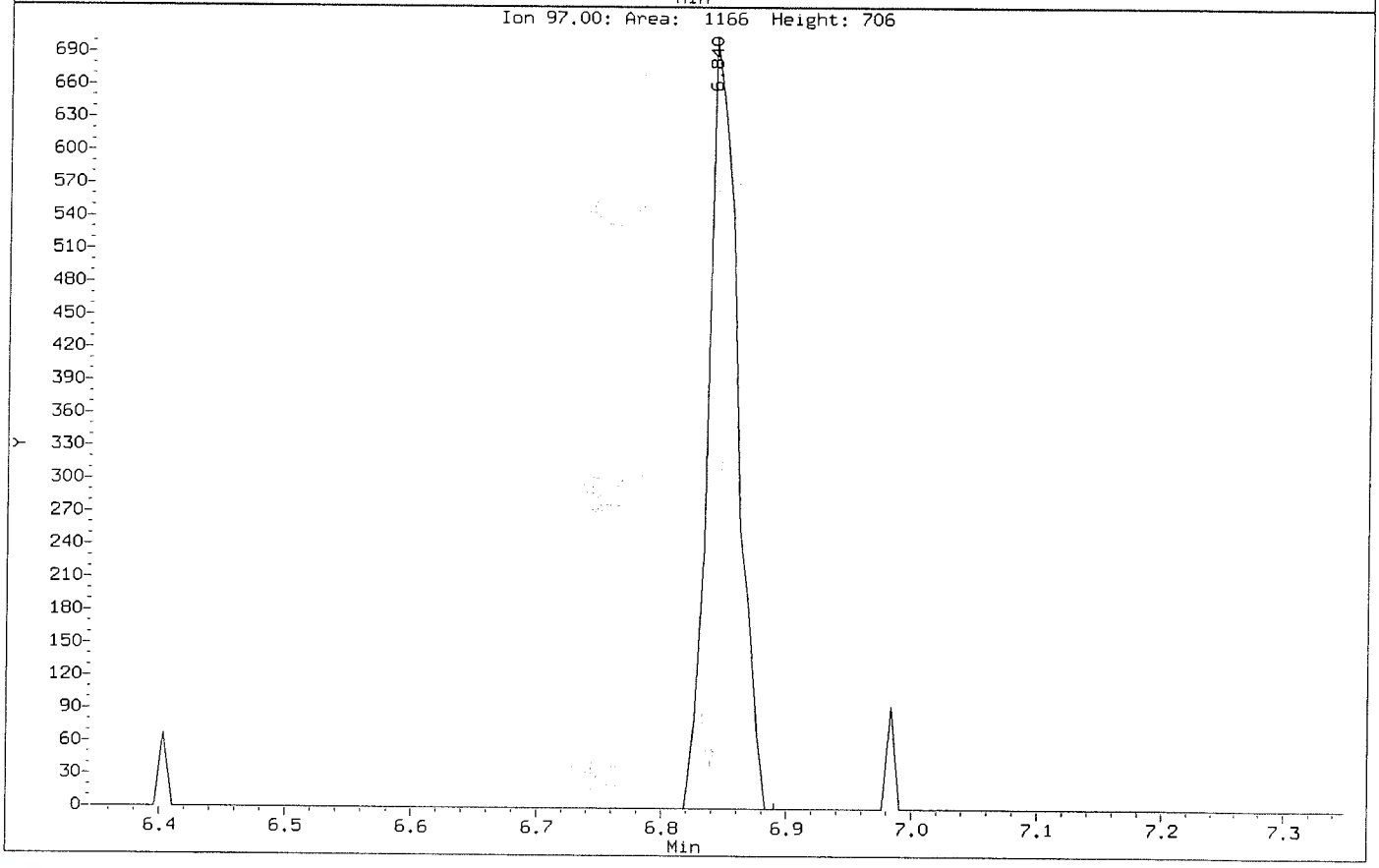




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

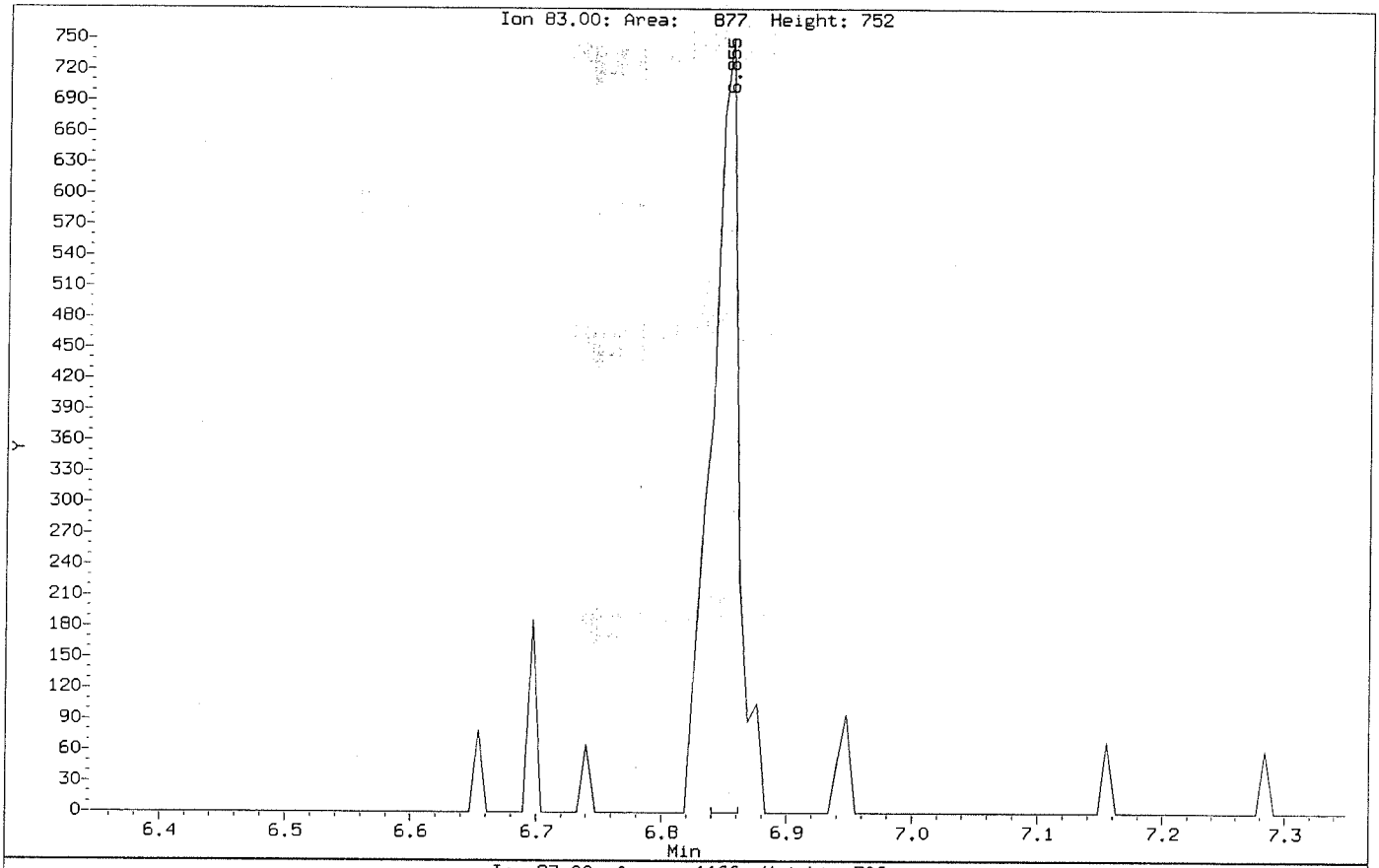
Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5

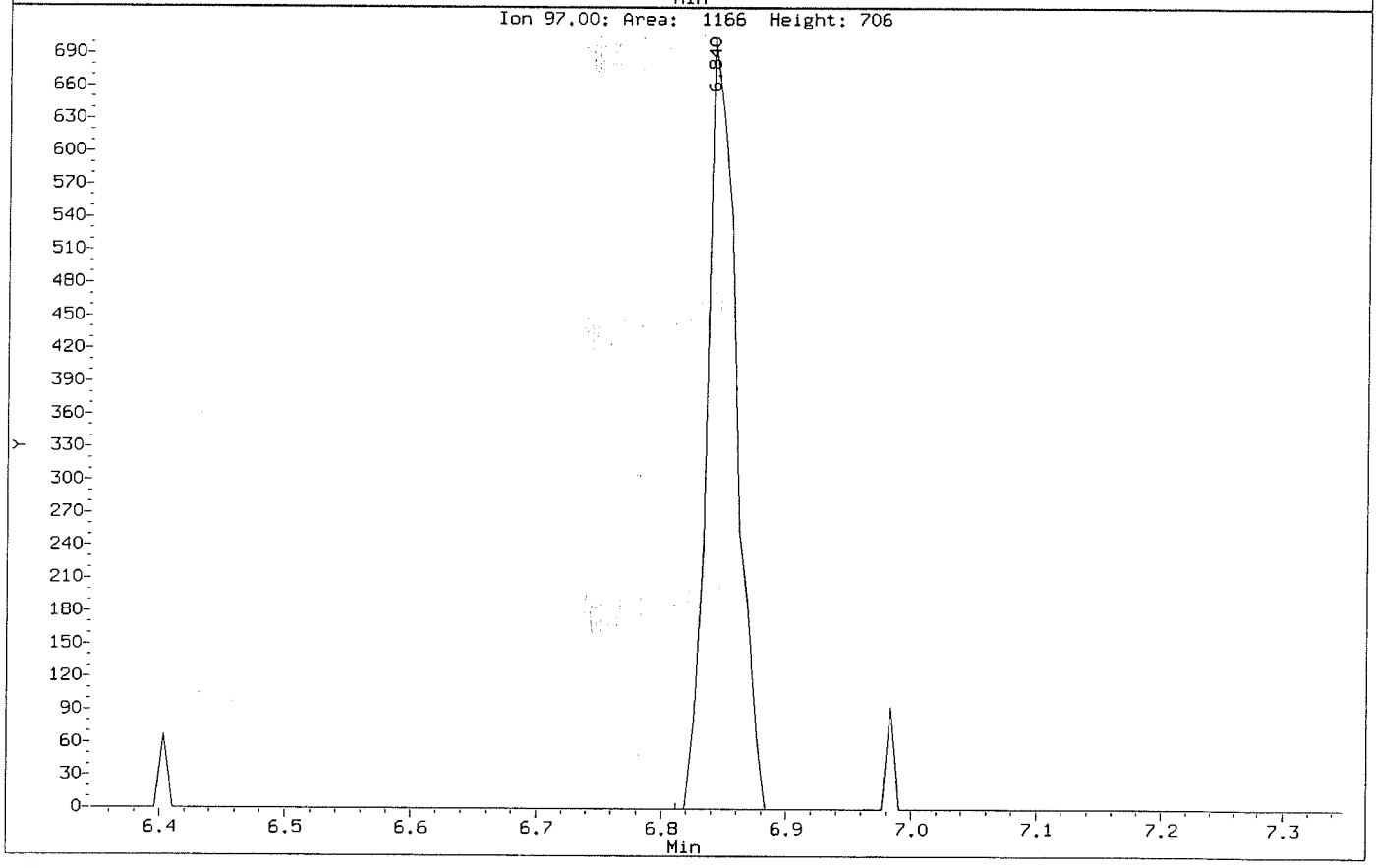




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

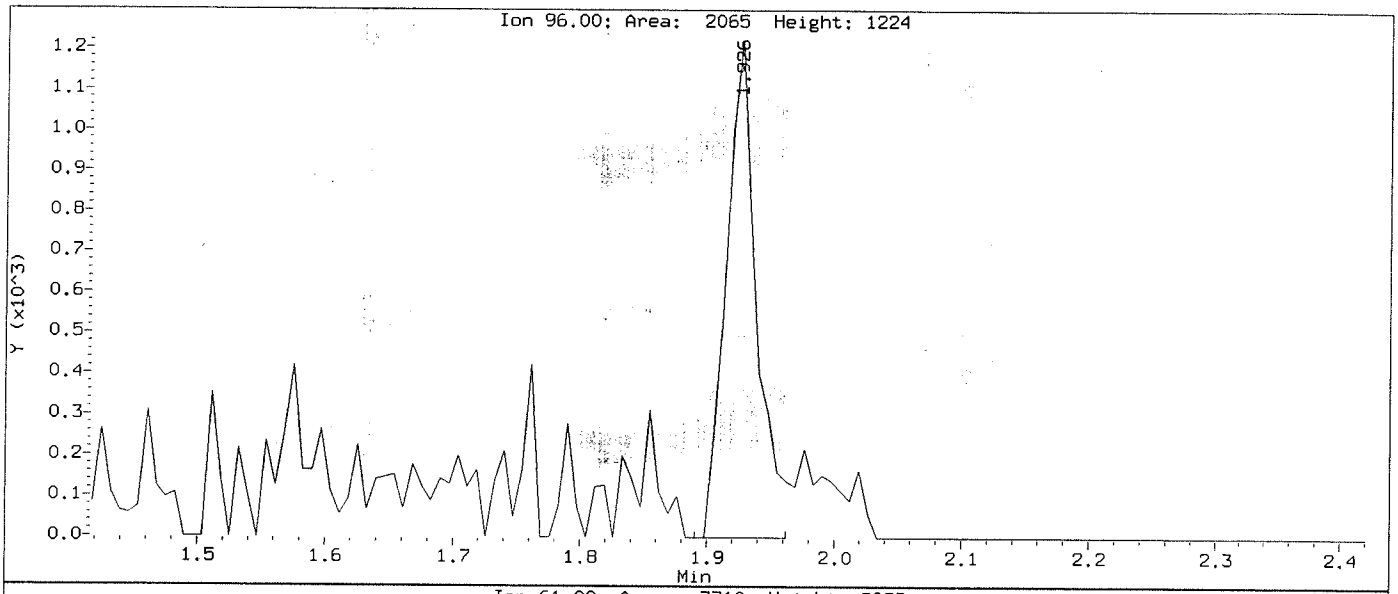
Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5

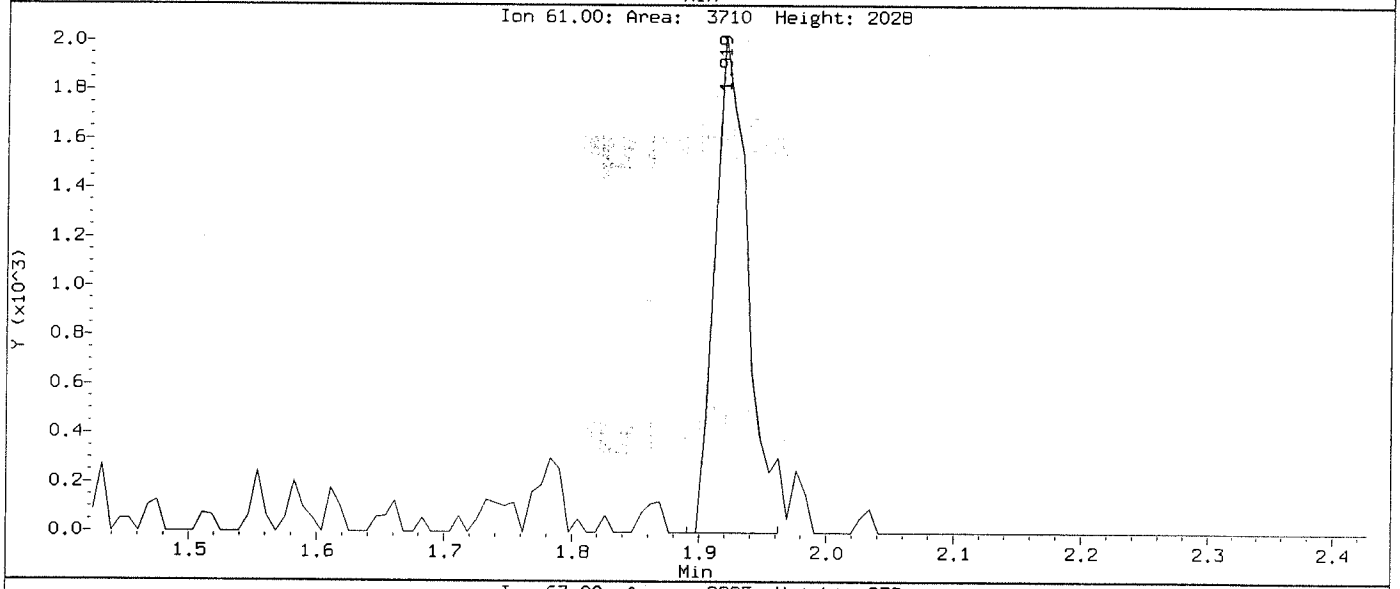


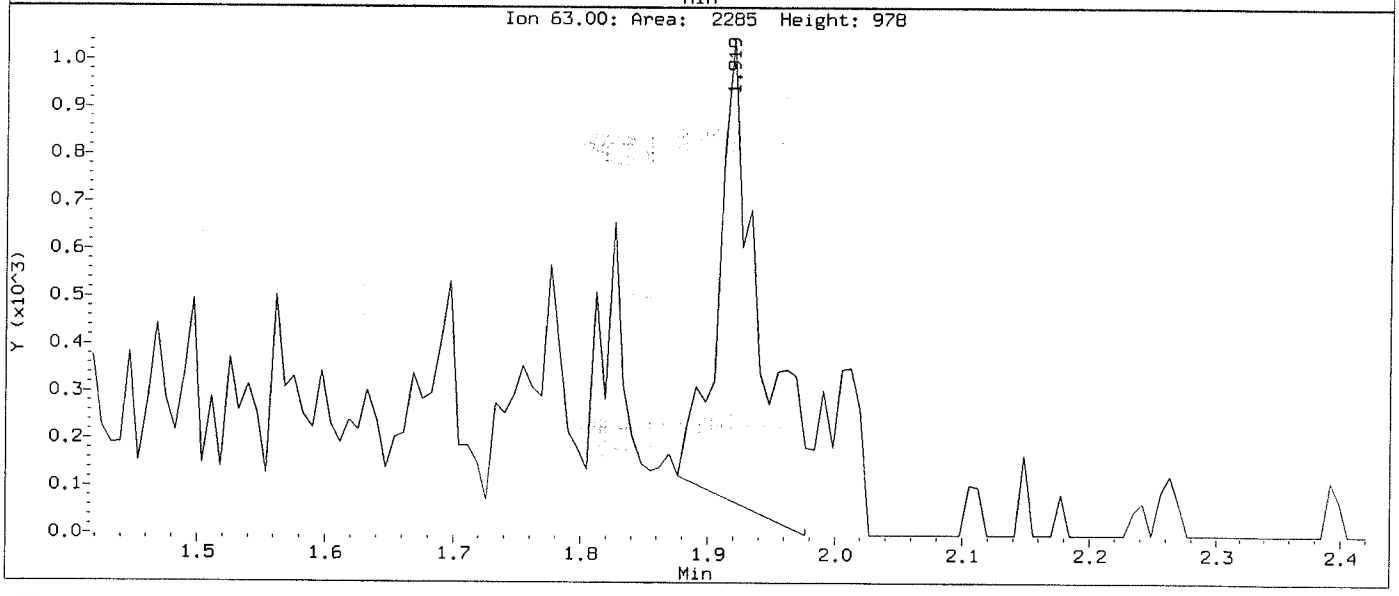


Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

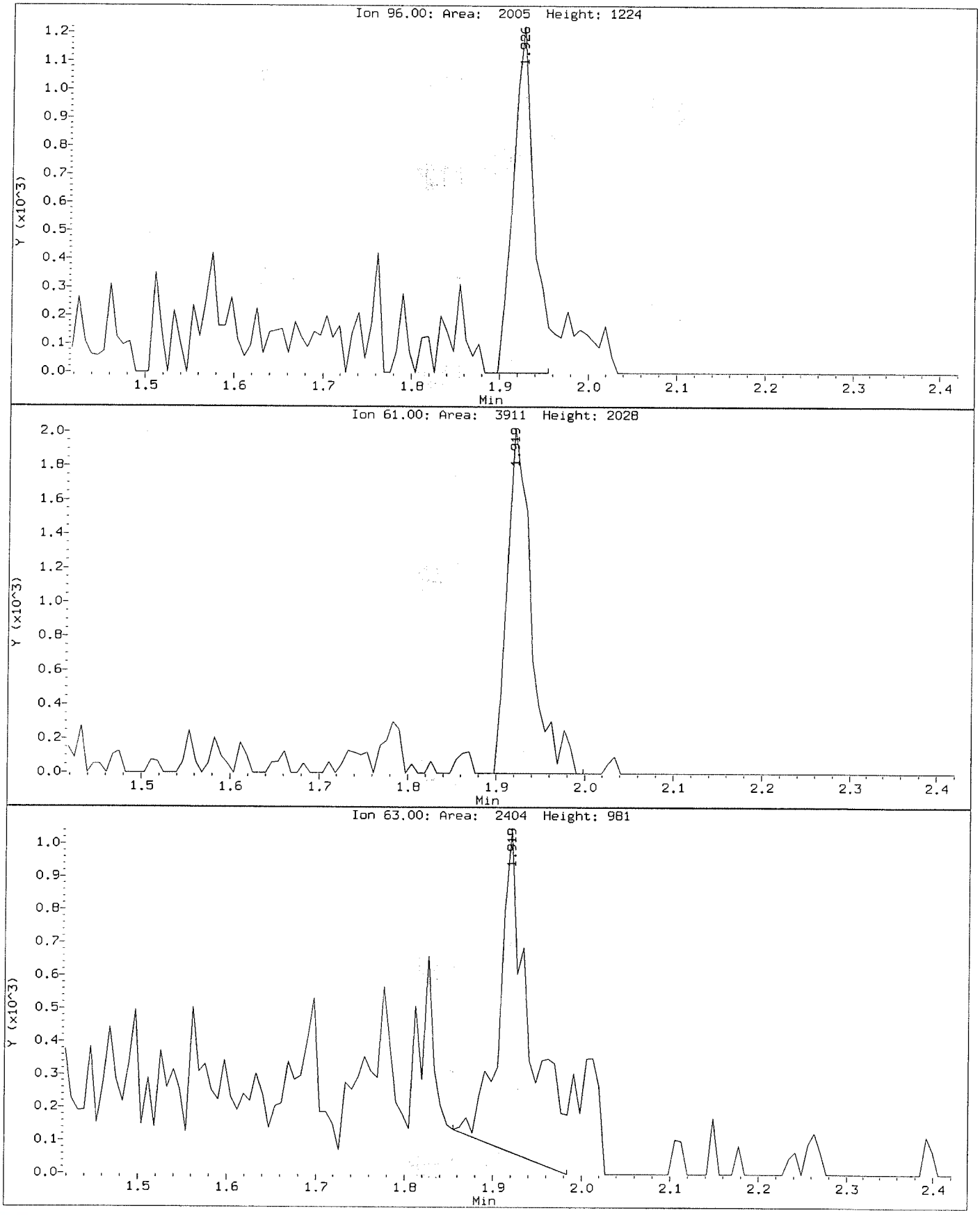






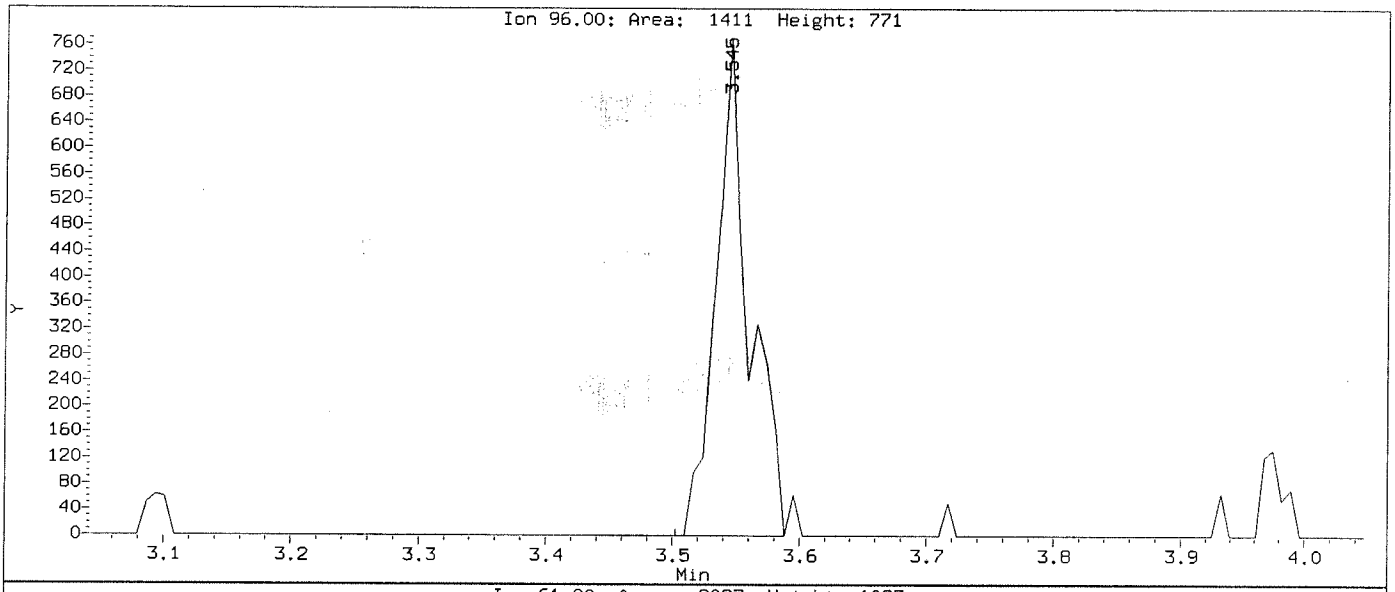
Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

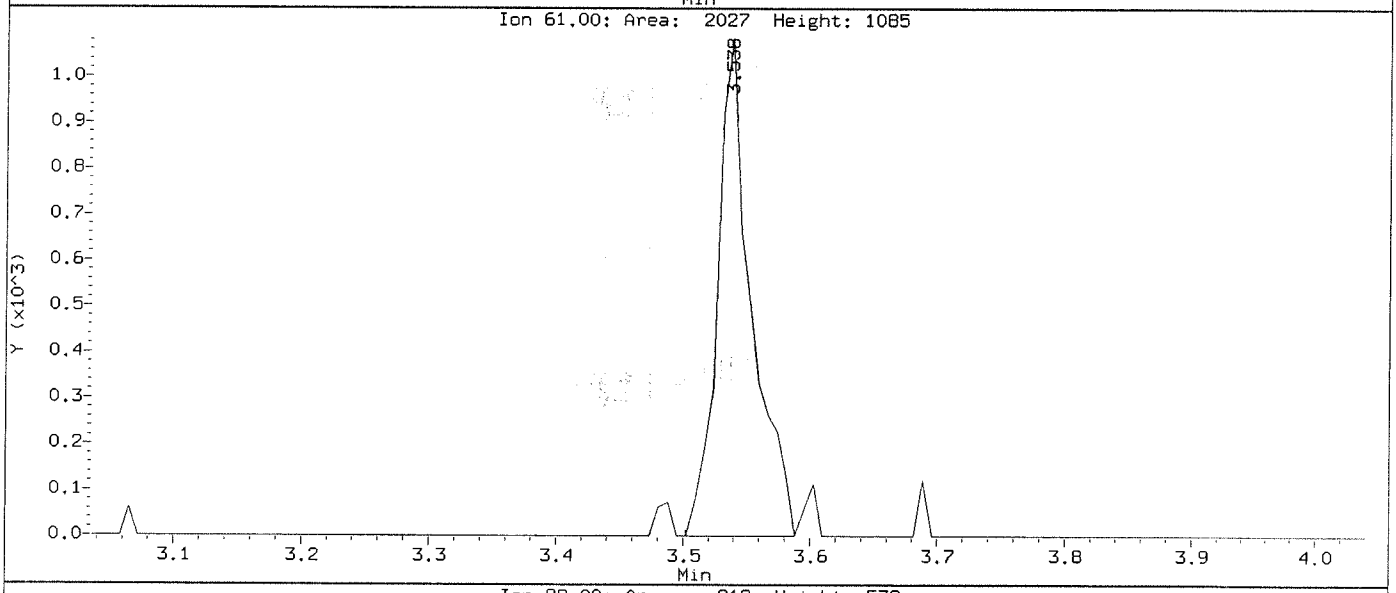
Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

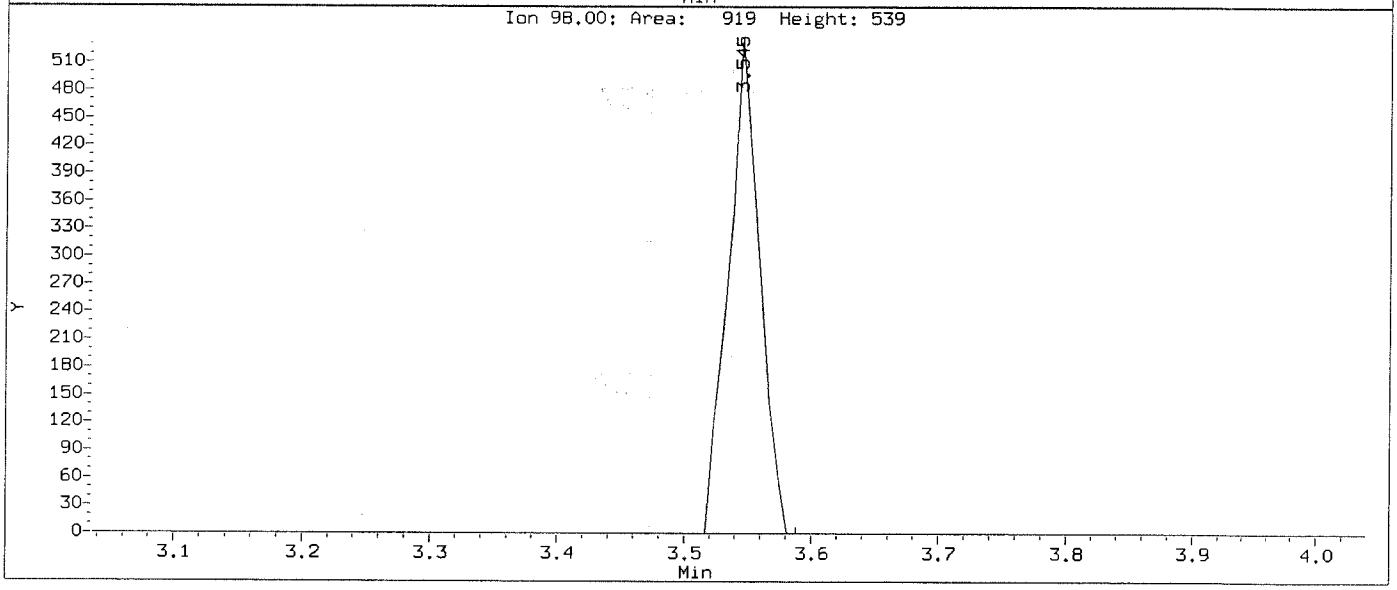


Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2

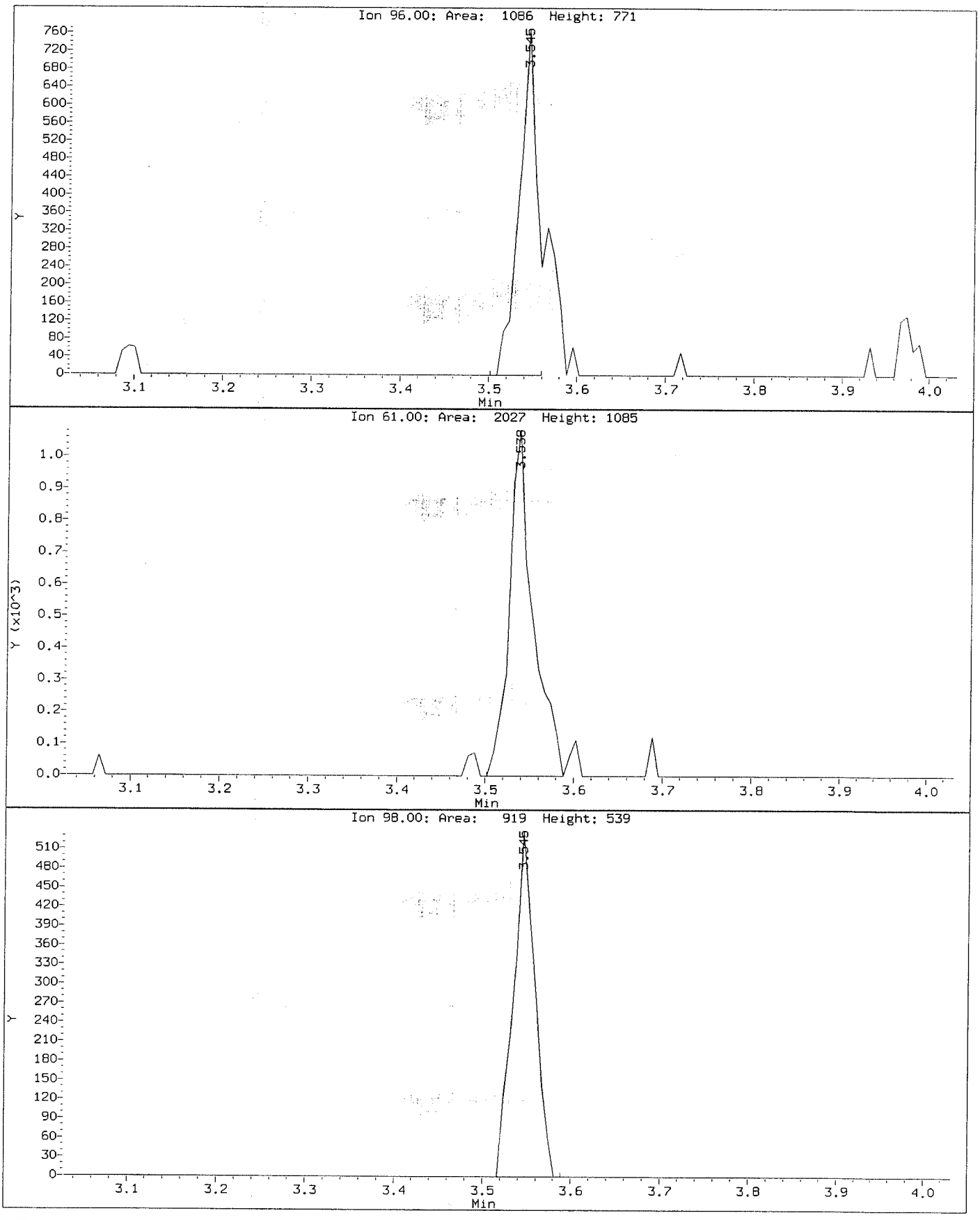






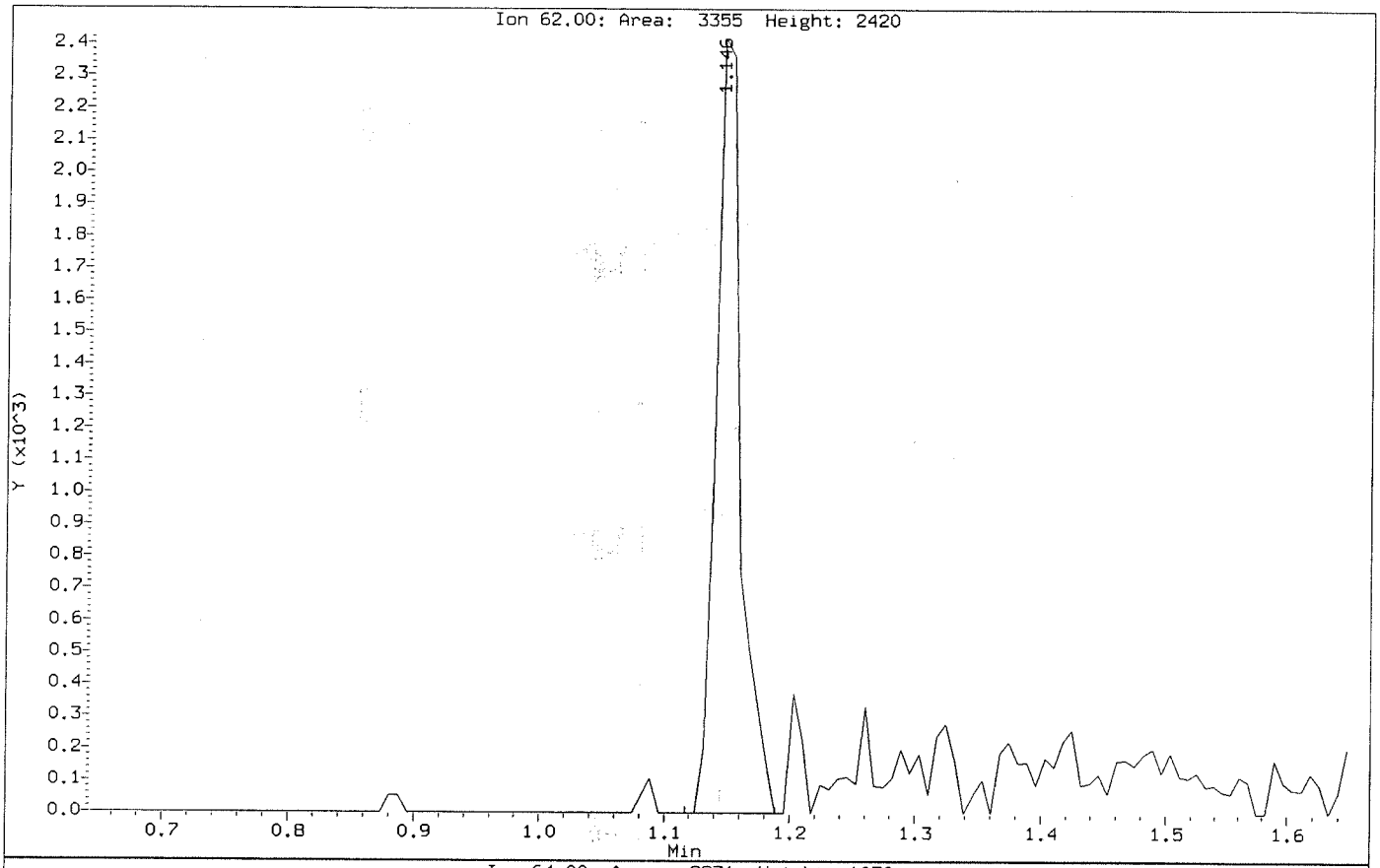
Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

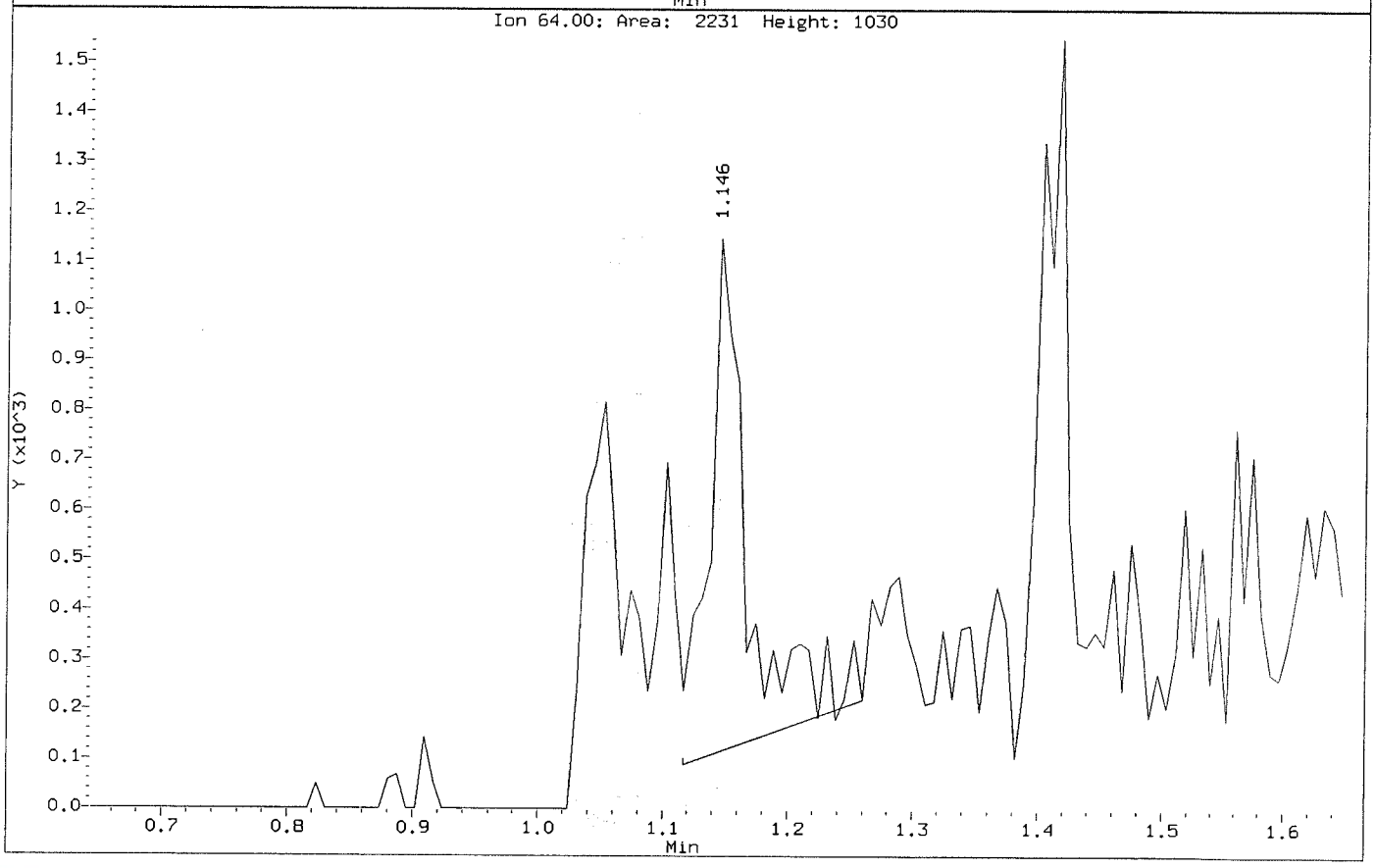
Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

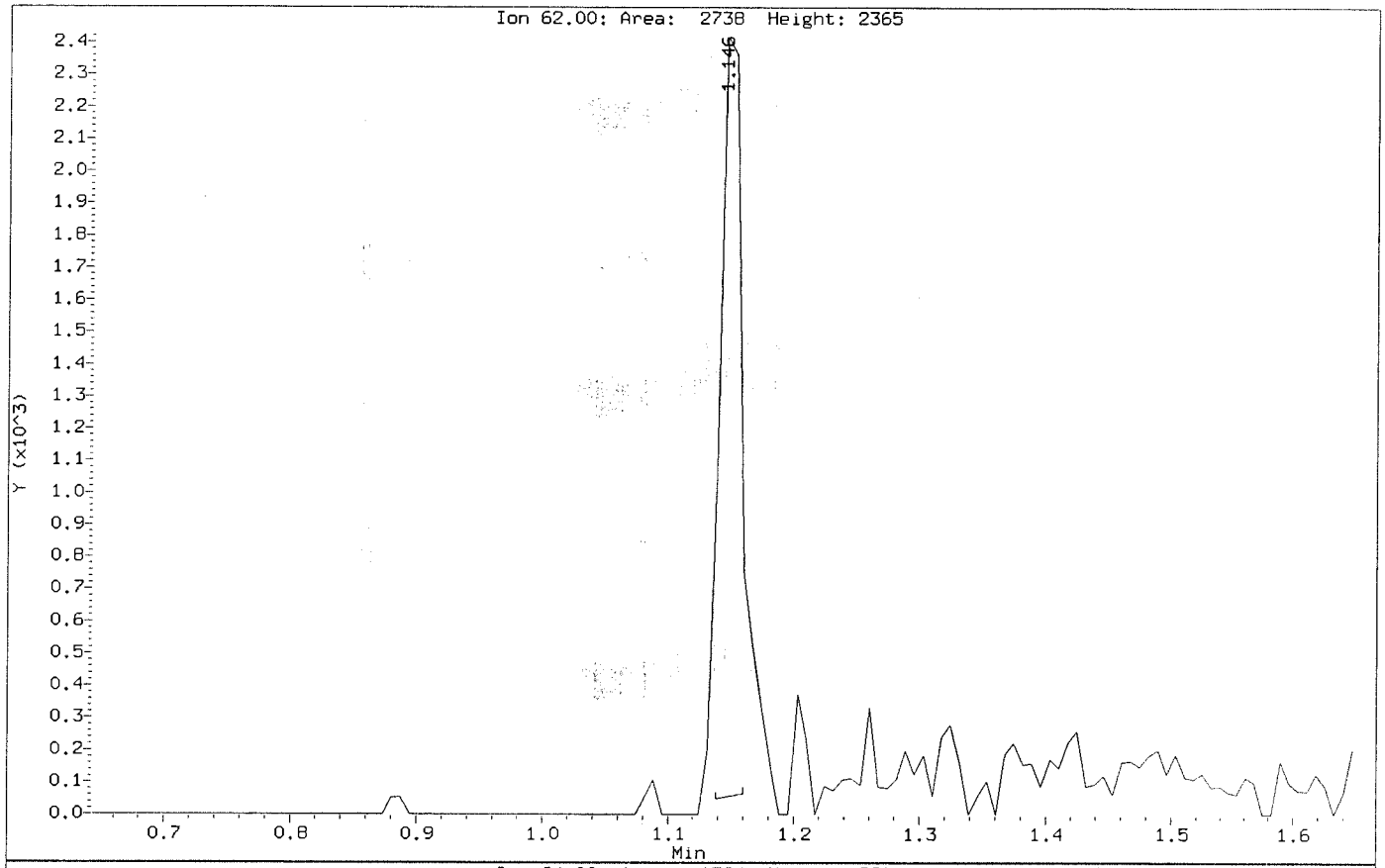
Compound: Vinyl Chloride
CAS Number: 75-01-4

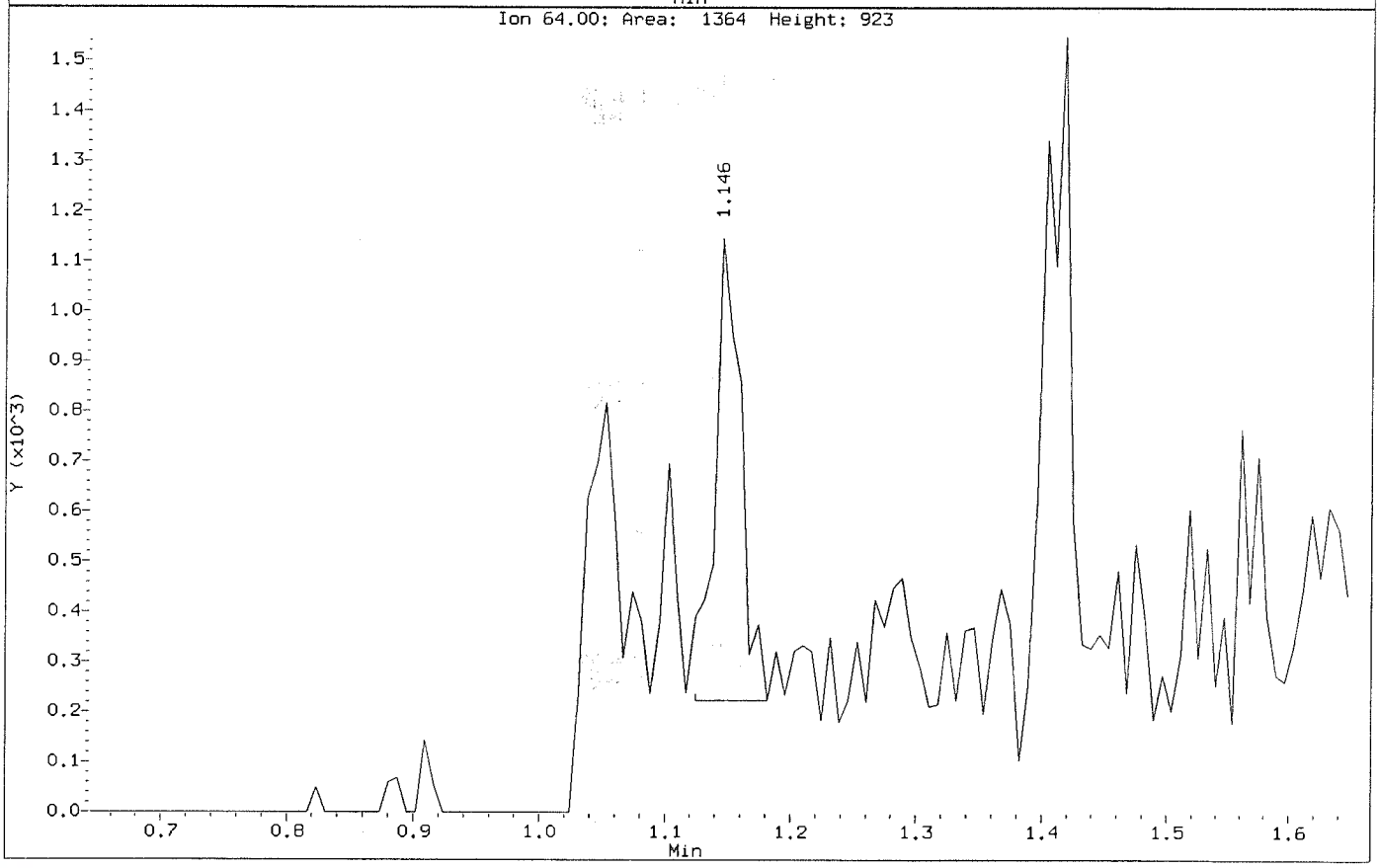




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102503.D
Injection Date: 25-OCT-2020 17:24
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D Page 1
Report Date: 30-Nov-2020 13:13

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 25-OCT-2020 17:45
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:13 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 17:24 Cal File: X102503.D
Als bottle: 7 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

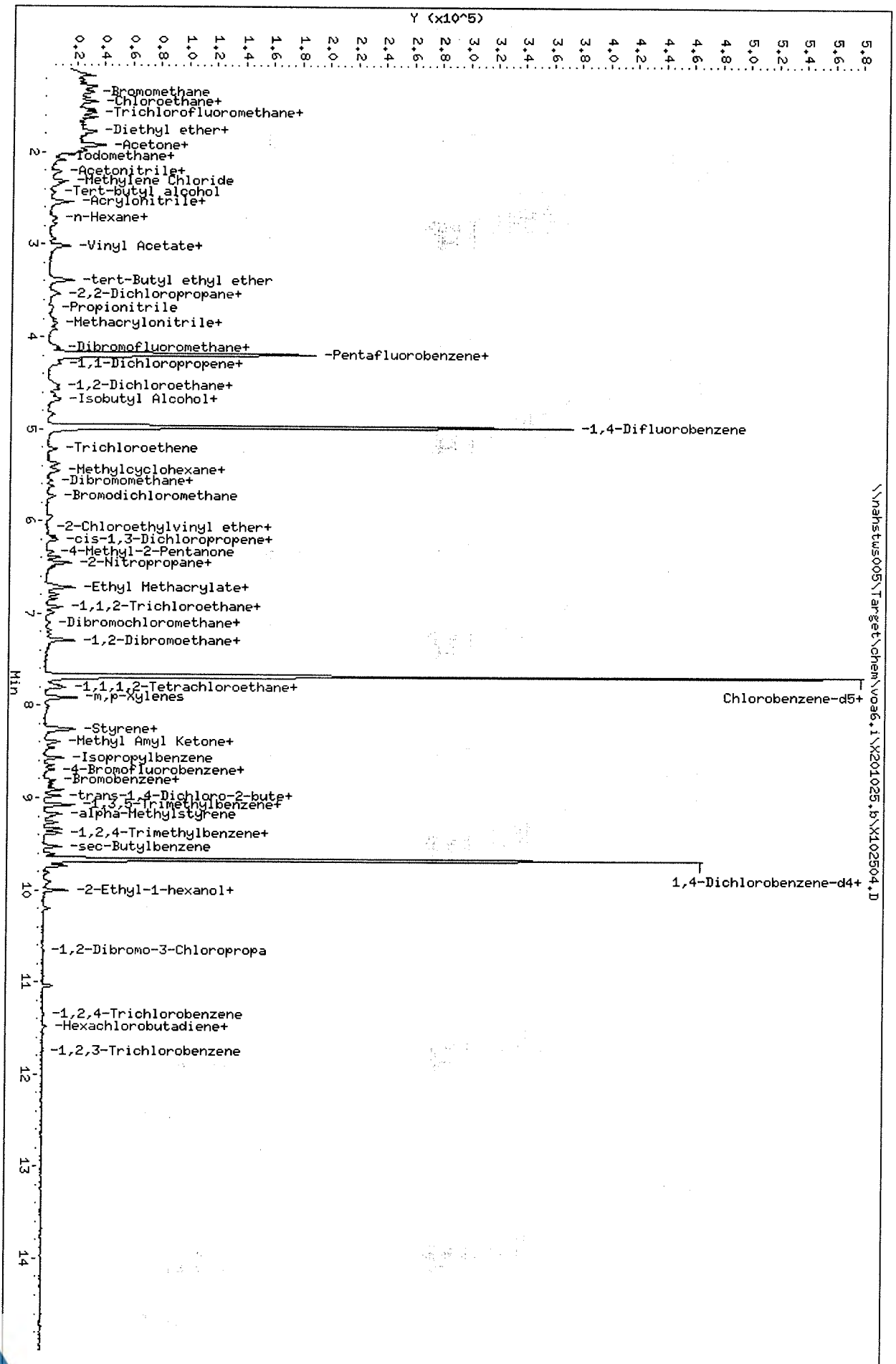
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	133725	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	265523	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	237249	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	89977	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.490	4.490	(1.072)	2362	1.00000	1.03(Ta)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	2133	1.00000	2.89(a)
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	1747	1.00000	0.94(a)
$ 48 Toluene-d8	98	6.395	6.395	(0.834)	5855	1.00000	2.56(Ta)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.894)	1602	1.00000	1.03(a)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	3767	1.00000	1.15(a)
33 1,2-Dichloroethane	62	4.569	4.569	(0.919)	3014	1.00000	1.05(a)
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	2283	1.00000	1.09(a)
17 Methylene Chloride	84	2.320	2.320	(0.554)	2321	1.00000	1.09(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	1801	1.00000	1.03(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	4301	1.00000	1.04(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

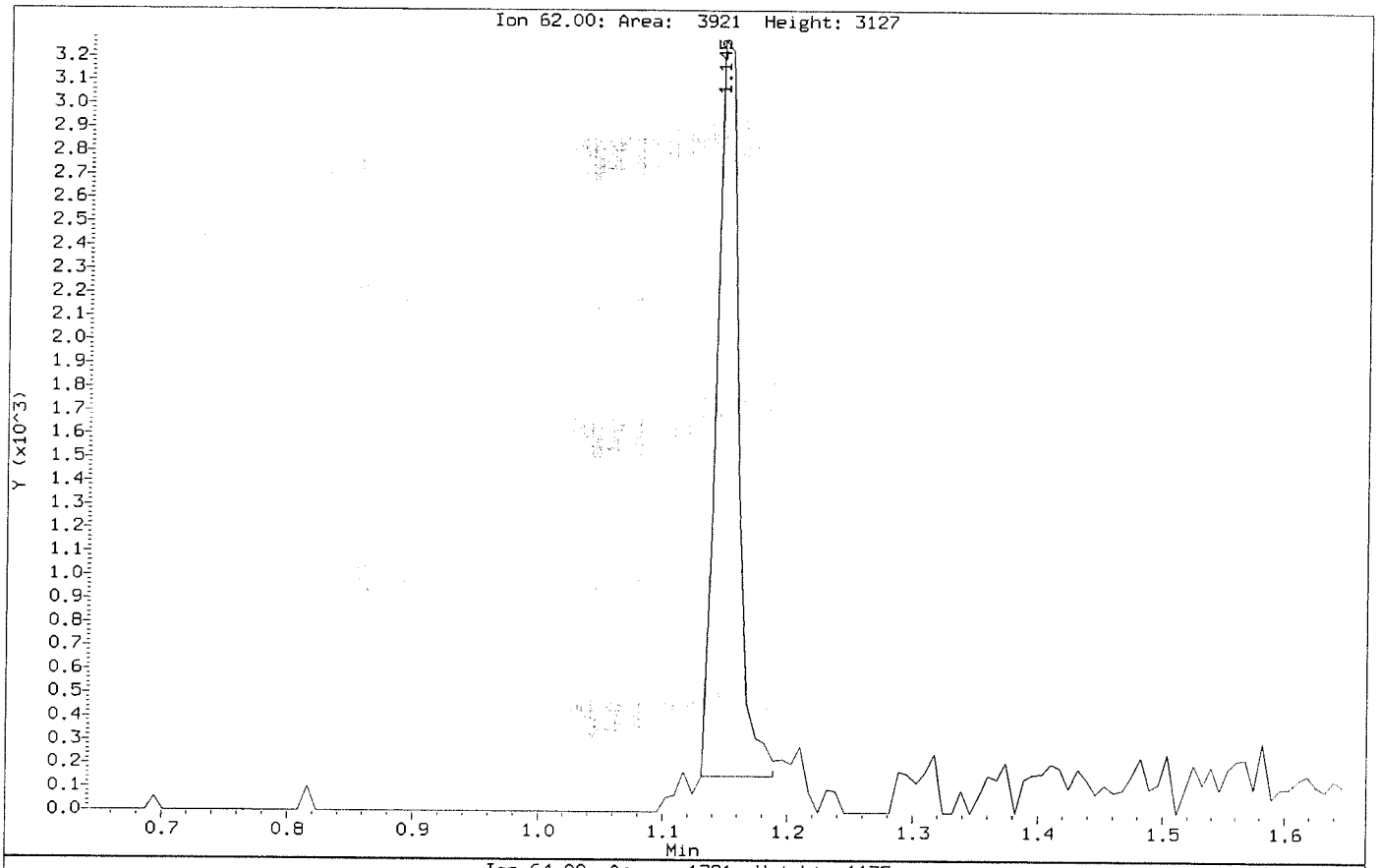


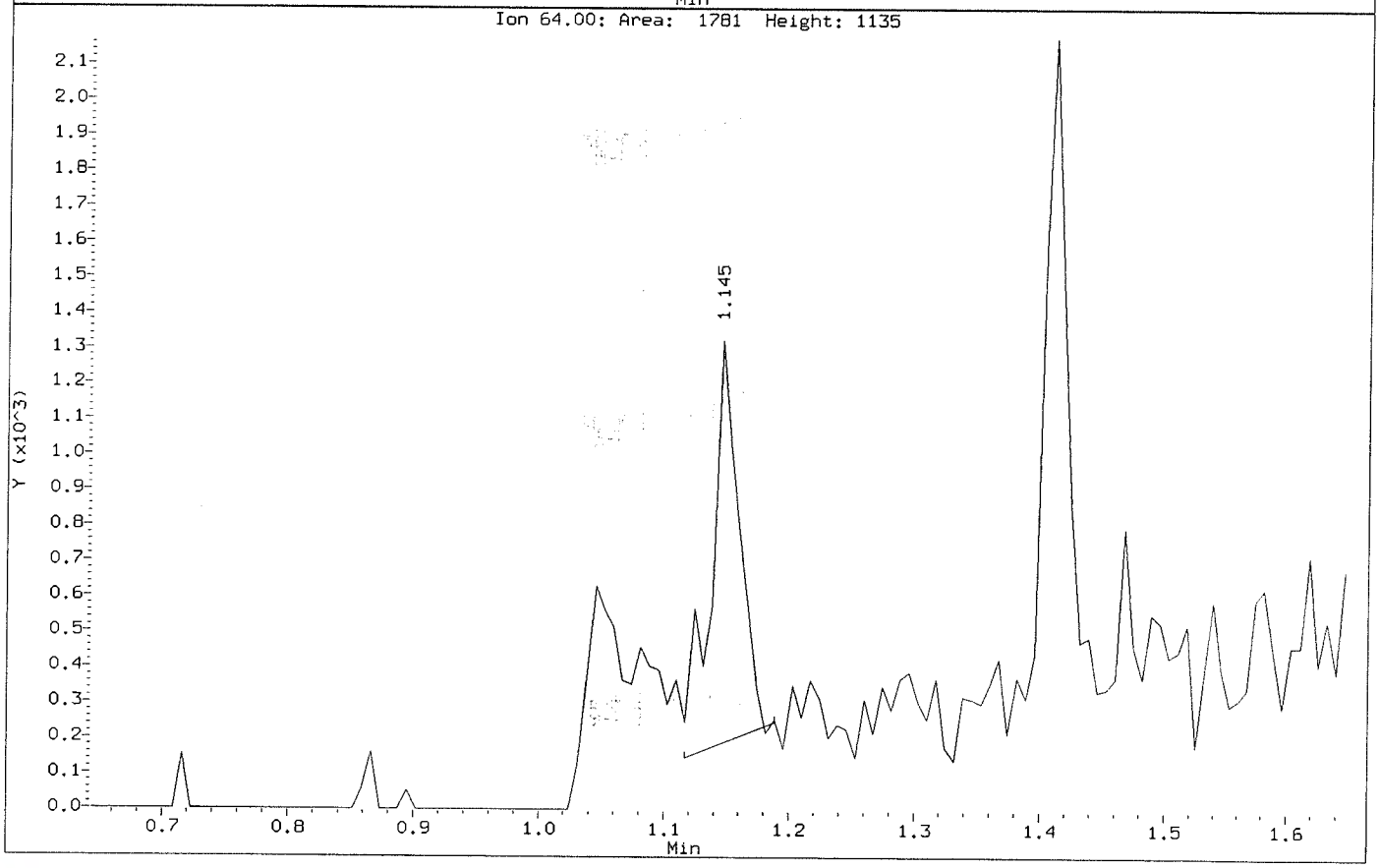
Data File: \\nahstws005\Target\chem\voa6,i\X201025,b\X102504.D
Date : 25-OCT-2020 17:45
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102504.D
Injection Date: 25-OCT-2020 17:45
Instrument: voa6.i
Client Sample ID: VSTD001

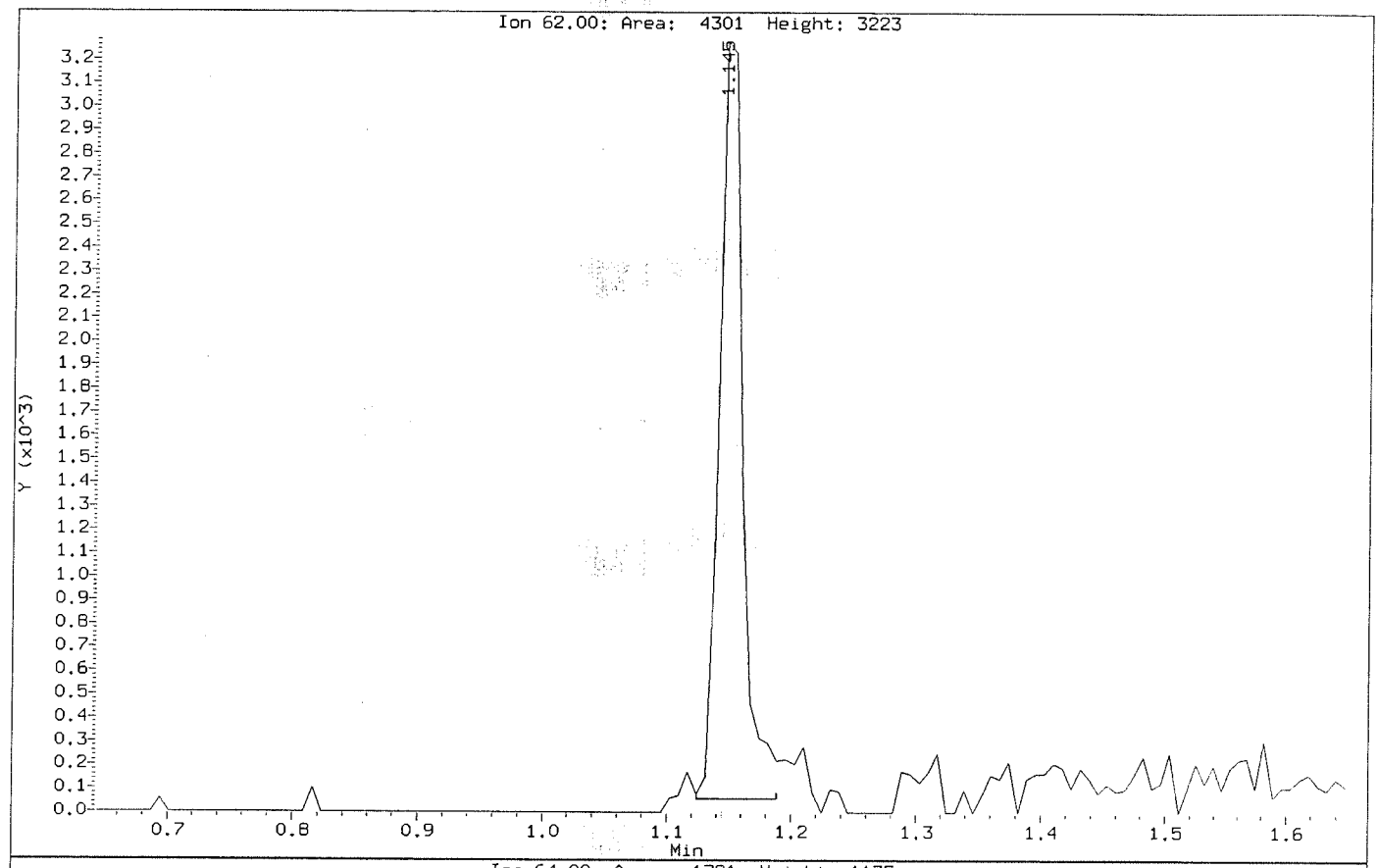
Compound: Vinyl Chloride
CAS Number: 75-01-4

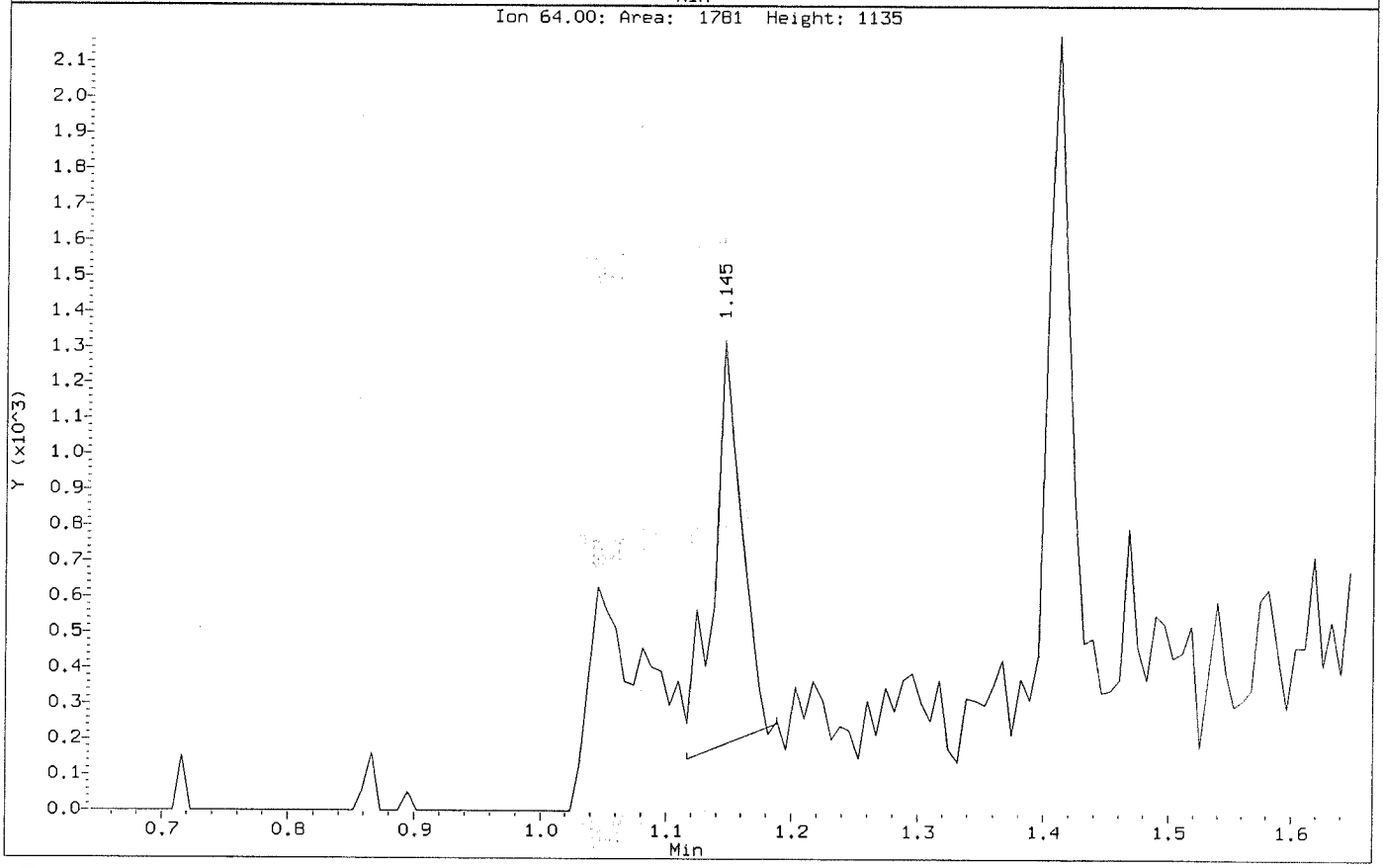




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102504.D
Injection Date: 25-OCT-2020 17:45
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102505.D Page 1
Report Date: 30-Nov-2020 13:14

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102505.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 25-OCT-2020 18:06
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 17:45 Cal File: X102504.D
Als bottle: 8 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

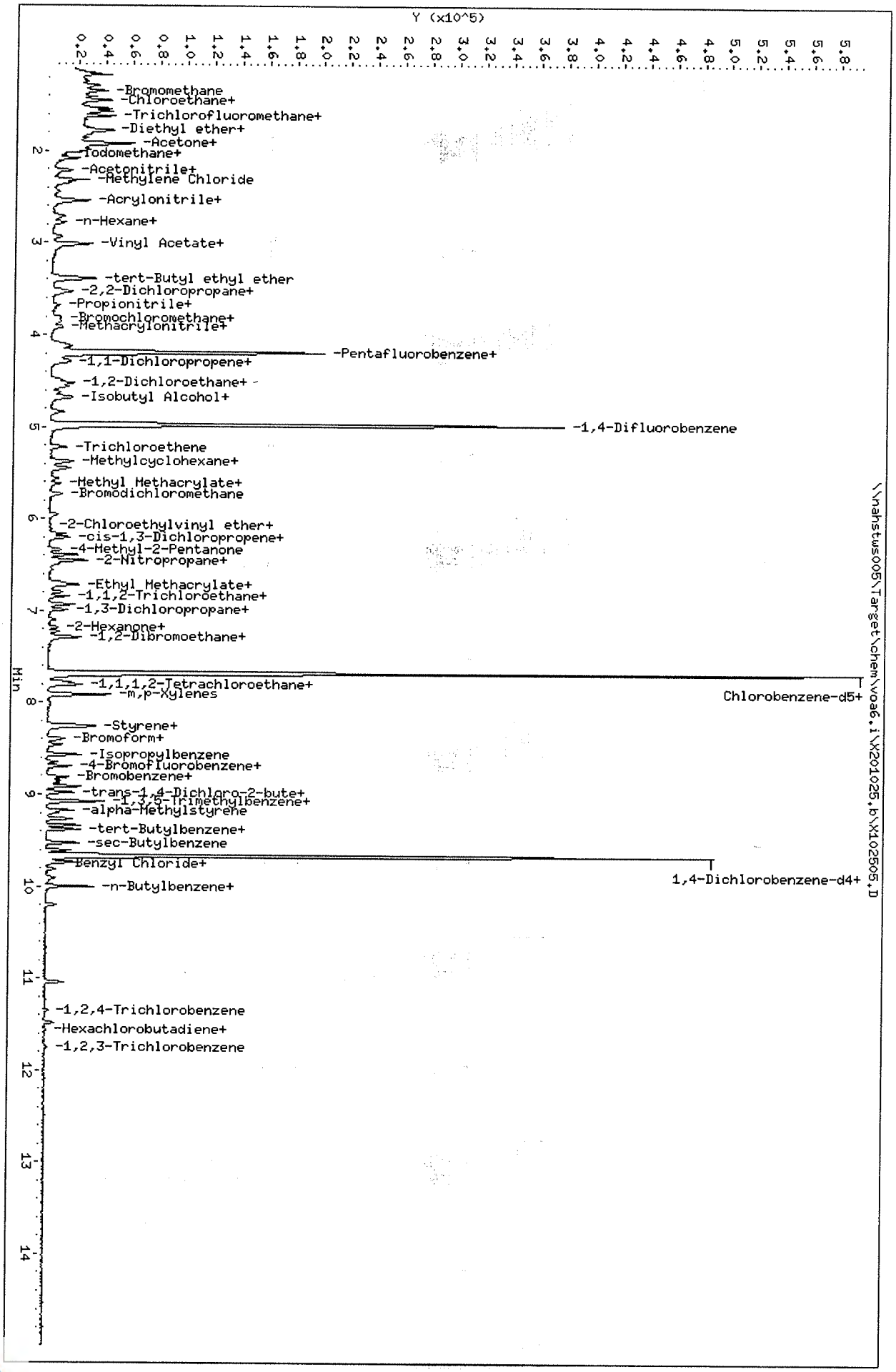
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	138059	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	268911	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	238375	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	92380	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	4999	2.00000	2.09(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4602	2.00000	3.93(a)
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	3406	2.00000	1.79(a)
$ 48 Toluene-d8	98	6.395	6.395	(0.834)	11754	2.00000	3.40(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	3021	2.00000	1.94(a)
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	6937	2.00000	2.06(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5387	2.00000	1.85(a)
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	4027	2.00000	1.86(a)
17 Methylene Chloride	84	2.313	2.313	(0.552)	4313	2.00000	1.97(a)
38 Trichloroethene	130	5.221	5.221	(1.050)	3205	2.00000	1.81(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	8618	2.00000	2.03(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstus005\Target\chem\voa6.i\X201025.b\X102505.D
Date : 25-OCT-2020 18:06
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 25-OCT-2020 18:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:06 Cal File: X102505.D
Als bottle: 9 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

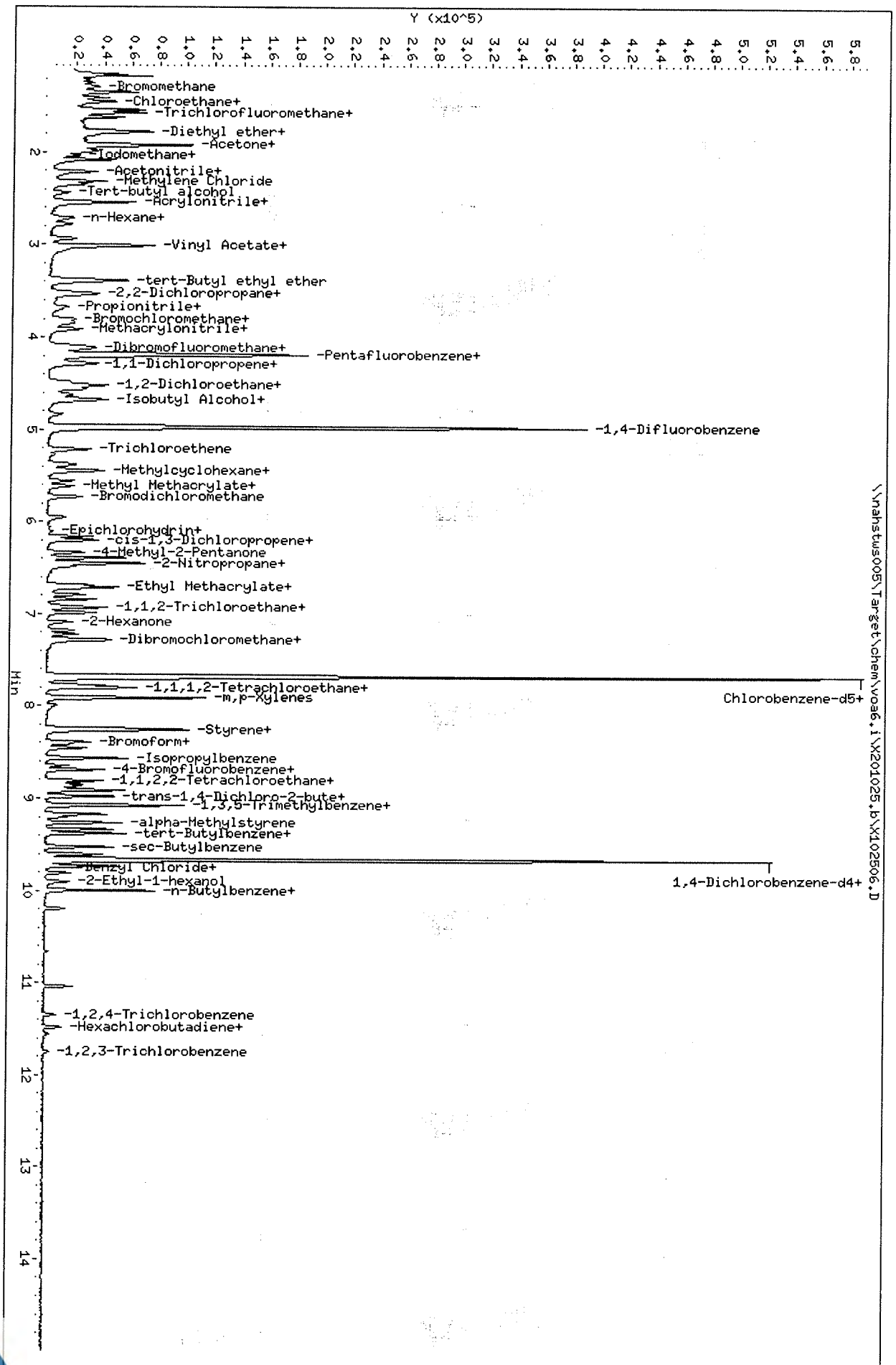
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	132183	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	262424	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	236481	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	93887	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	11402	5.00000	4.95(aM)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	10188	5.00000	6.31
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	8894	5.00000	4.88(a)
$ 48 Toluene-d8	98	6.396	6.396	(0.834)	31270	5.00000	6.24
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	8403	5.00000	5.46
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	15811	5.00000	4.91(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	14249	5.00000	5.02
27 cis-1,2-Dichloroethene	96	3.545	3.545	(0.846)	10113	5.00000	4.88(a)
17 Methylene Chloride	84	2.313	2.313	(0.552)	10150	5.00000	4.85(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	7833	5.00000	4.53(a)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	17953	5.00000	4.41(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



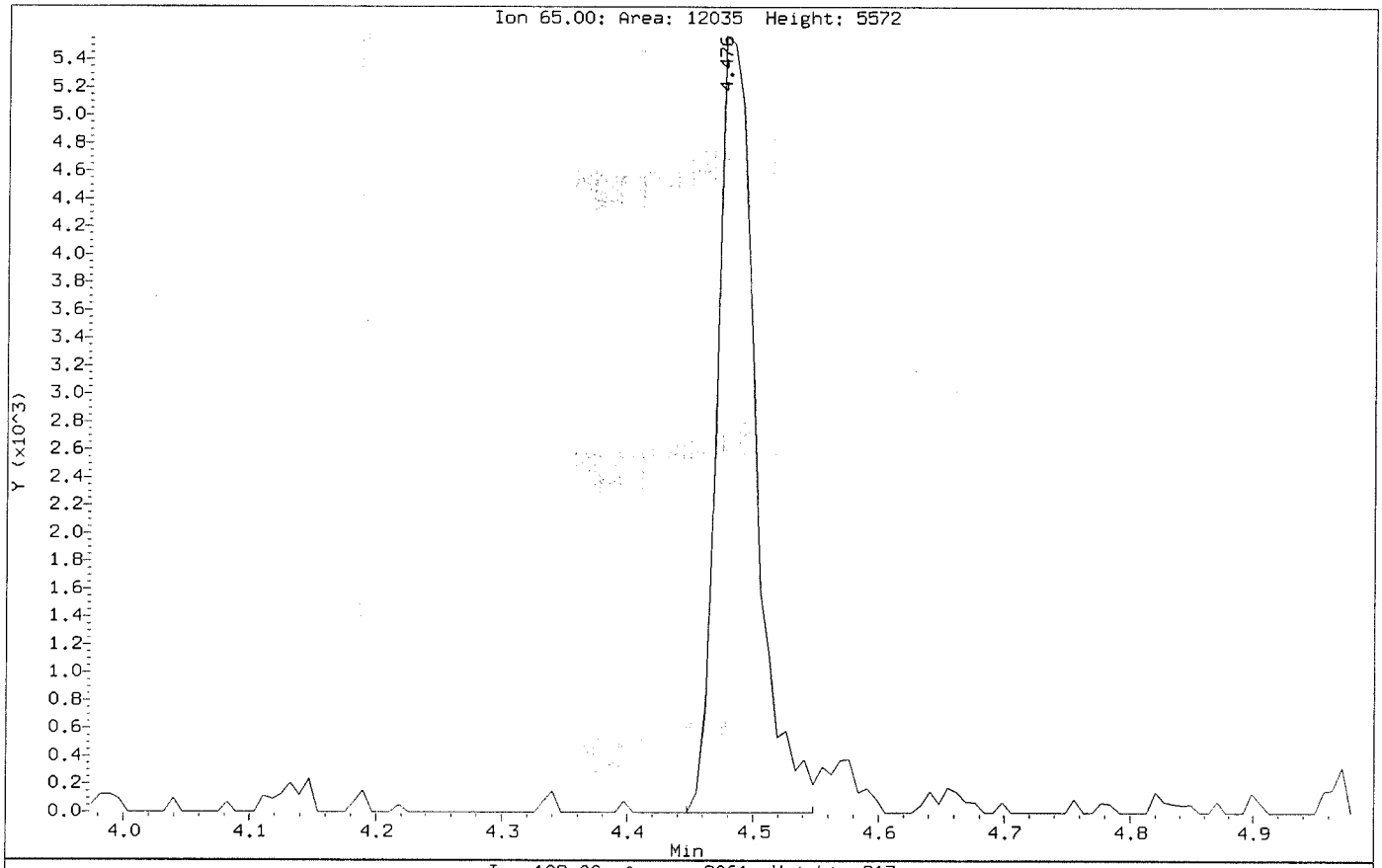
Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Date : 25-OCT-2020 18:27
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

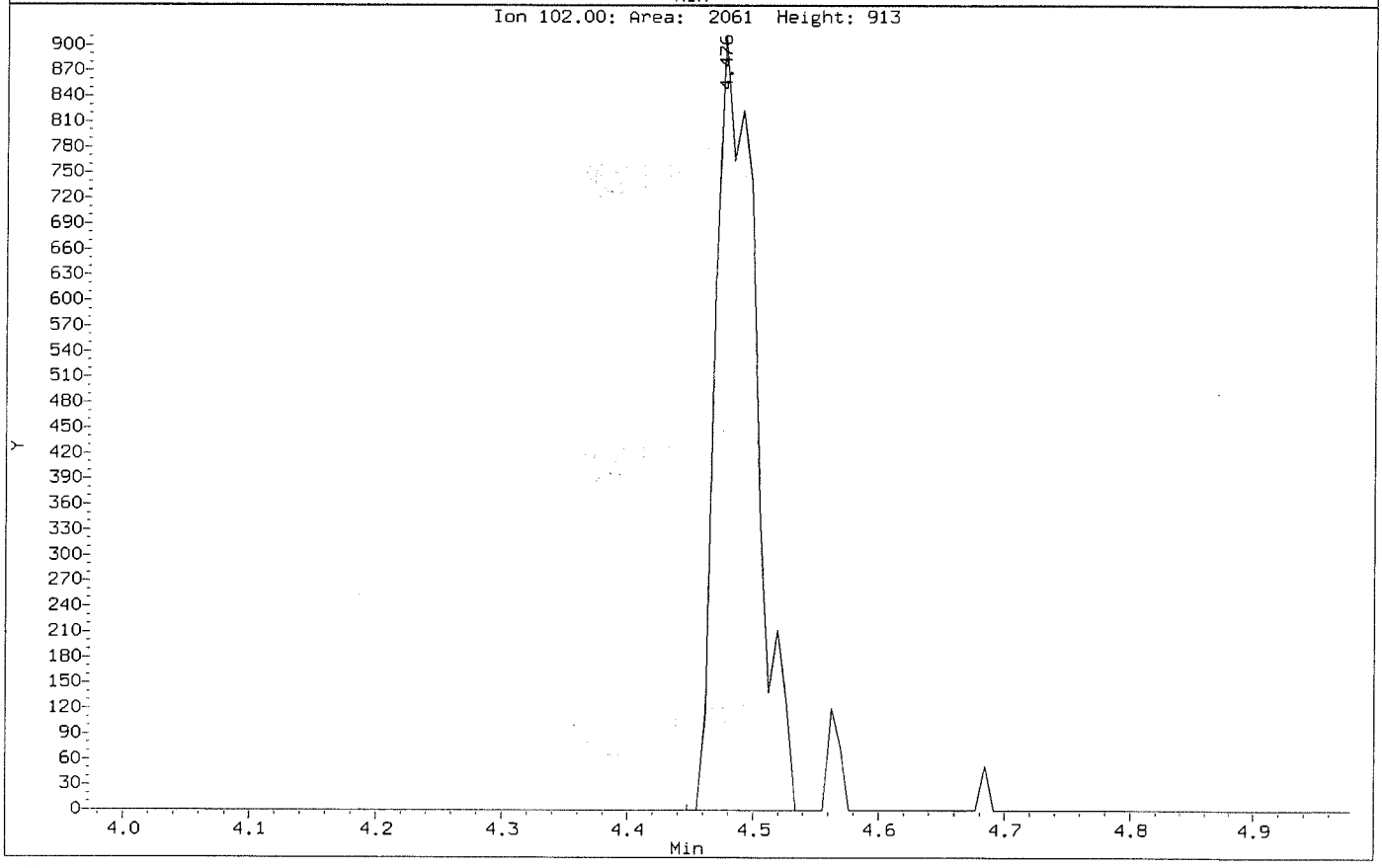
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\Before\X102506.D
Injection Date: 25-OCT-2020 18:27
Instrument: voa6.i
Client Sample ID: VSTD005

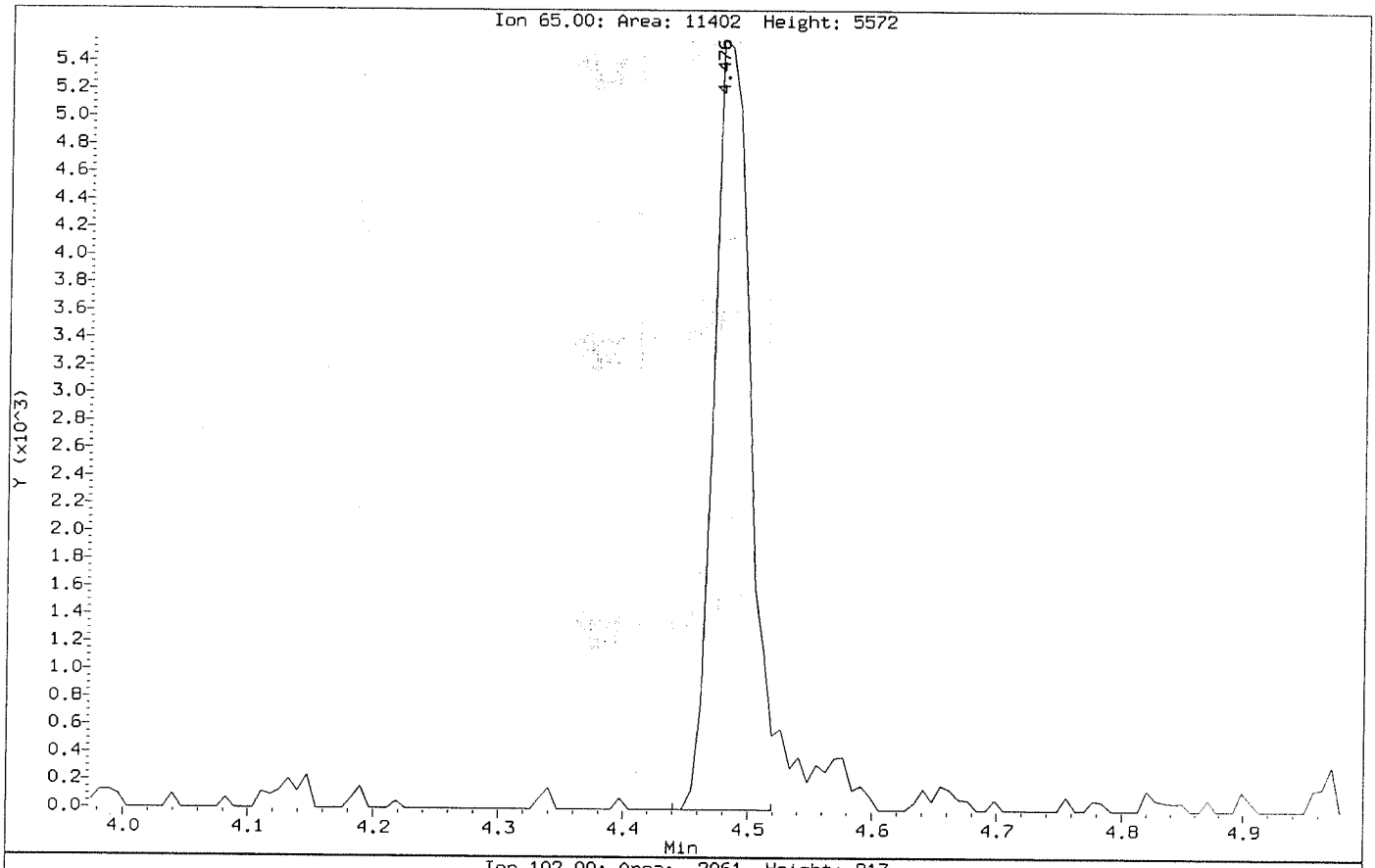
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

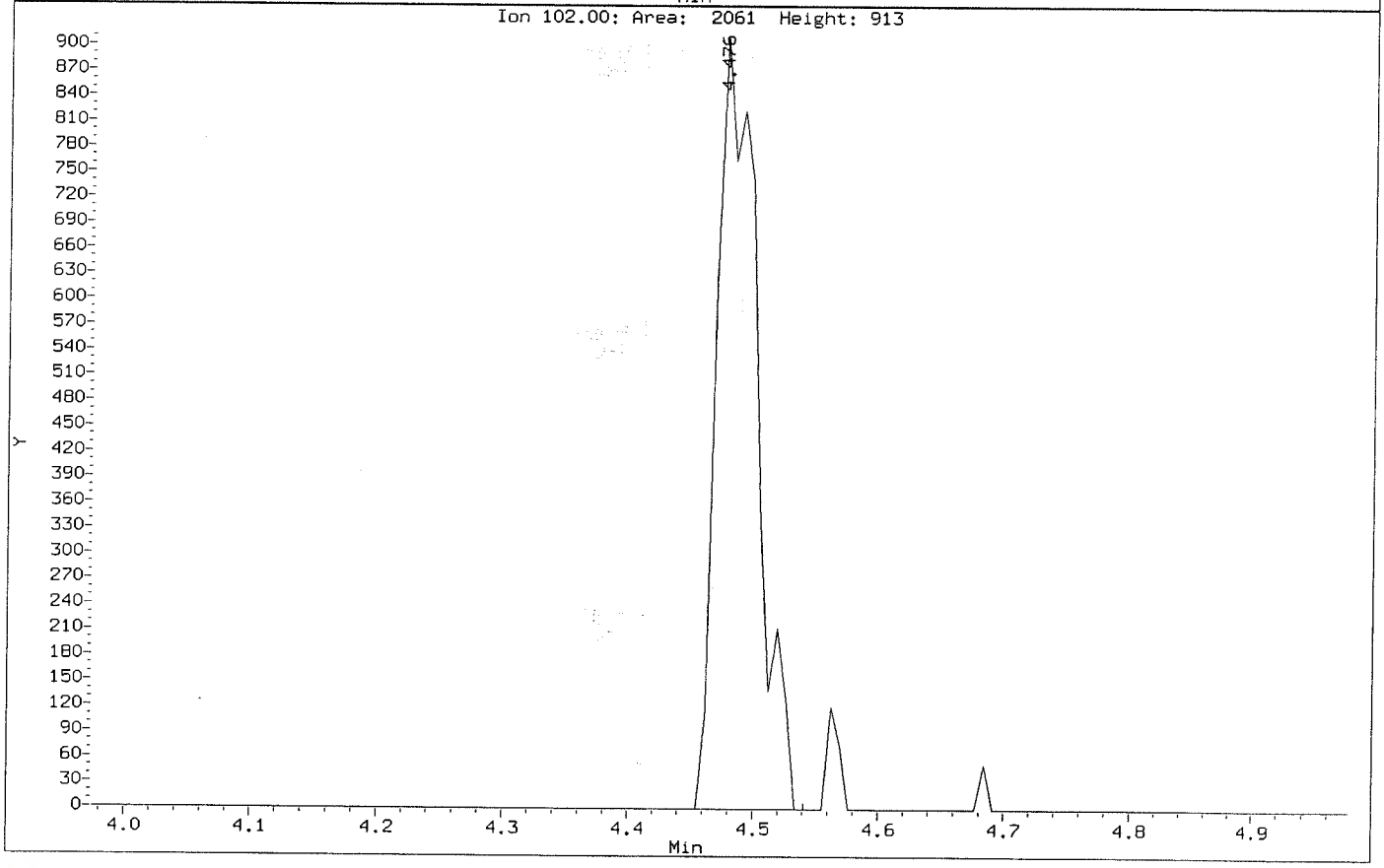




Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102506.D
Injection Date: 25-OCT-2020 18:27
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





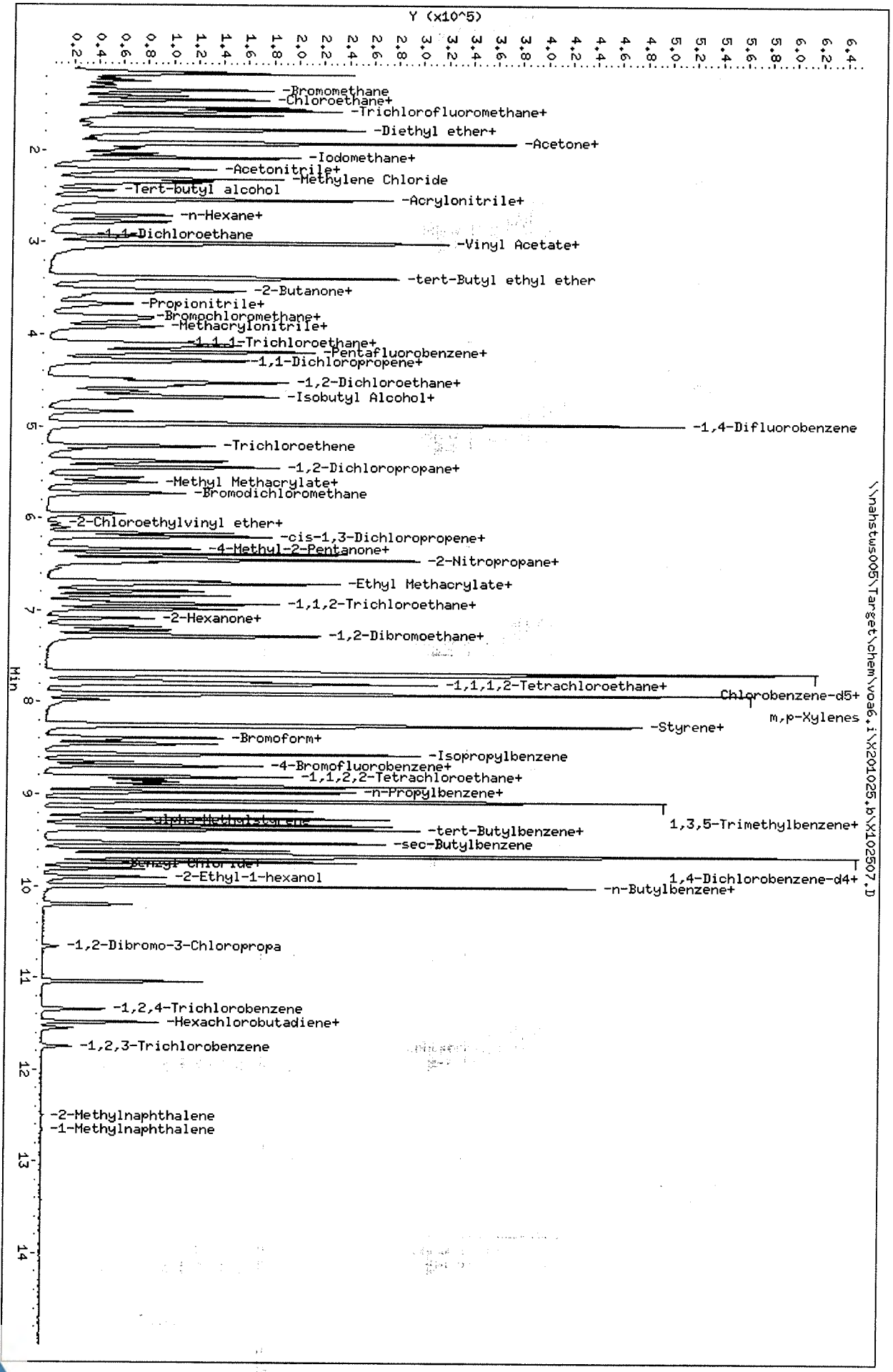
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102507.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 25-OCT-2020 18:48
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:27 Cal File: X102506.D
Als bottle: 10 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	136849	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	270104	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	237688	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	95866	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	46344	20.0000	19.36
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	42426	20.0000	19.90
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	36260	20.0000	19.24
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	131486	20.0000	20.66
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	30161	20.0000	19.50
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	64169	20.0000	19.25
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	58734	20.0000	20.13
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	41515	20.0000	19.38
17 Methylene Chloride	84	2.313	2.313	(0.552)	39812	20.0000	18.41
38 Trichloroethene	130	5.214	5.214	(1.049)	37487	20.0000	21.10
5 Vinyl Chloride	62	1.145	1.145	(0.273)	83926	20.0000	19.94



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102507.D
Date : 25-OCT-2020 18:48
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D Page 1
Report Date: 30-Nov-2020 13:14

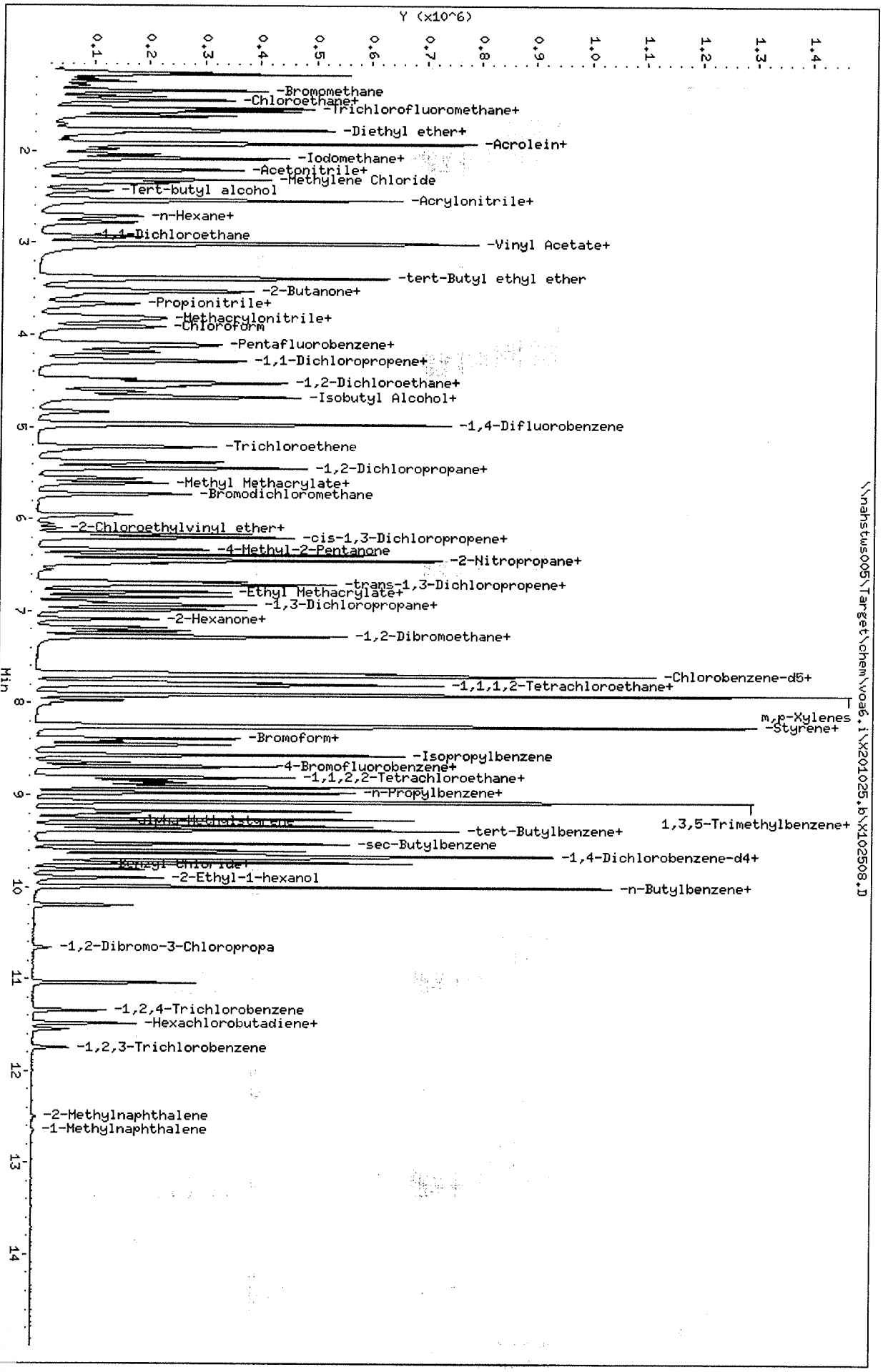
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 25-OCT-2020 19:09
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 18:48 Cal File: X102507.D
Als bottle: 11 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	144254	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274905	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	251583	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	110676	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	123233	50.0000	48.79
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	108164	50.0000	45.14
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	96973	50.0000	48.83
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	324408	50.0000	45.86
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	75198	50.0000	45.95
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	147185	50.0000	41.89
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	146952	50.0000	49.49
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	103361	50.0000	45.78
17 Methylene Chloride	84	2.313	2.313	(0.552)	96633	50.0000	42.39
38 Trichloroethene	130	5.214	5.214	(1.049)	86967	50.0000	48.09
5 Vinyl Chloride	62	1.145	1.145	(0.273)	189229	50.0000	42.66



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102508.D
Date : 25-OCT-2020 19:09
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102509.D Page 1
Report Date: 30-Nov-2020 13:14

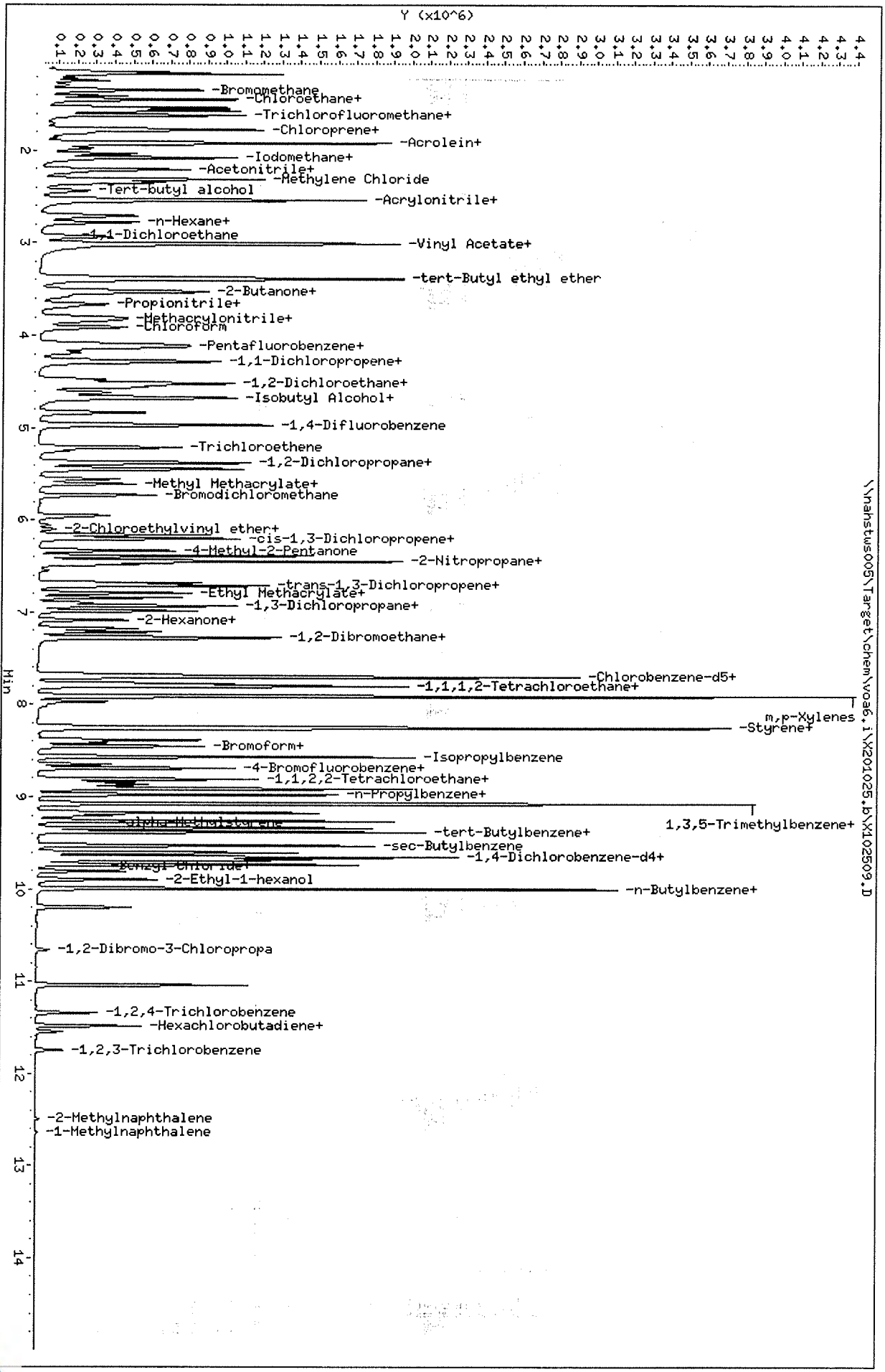
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102509.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 25-OCT-2020 19:29
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 12 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	139368	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287668	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	269087	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	124024	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	245566	100.000	100.61
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	251093	100.000	95.64
$	30 Dibromofluoromethane	113	4.111	4.111	(0.981)	210627	100.000	109.78
$	48 Toluene-d8	98	6.388	6.388	(0.833)	742483	100.000	96.18
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	165395	100.000	94.49
	11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	326526	100.000	96.19
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	311960	100.000	100.40
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	227115	100.000	104.13
	17 Methylene Chloride	84	2.313	2.313	(0.552)	212196	100.000	96.35
	38 Trichloroethene	130	5.214	5.214	(1.049)	196700	100.000	103.96
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	428800	100.000	100.08



Data File: \\nahstws005\Target\chem\voa6,i\X201025,b\X102509.D
Date : 25-OCT-2020 19:29
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D Page 1
Report Date: 30-Nov-2020 13:14

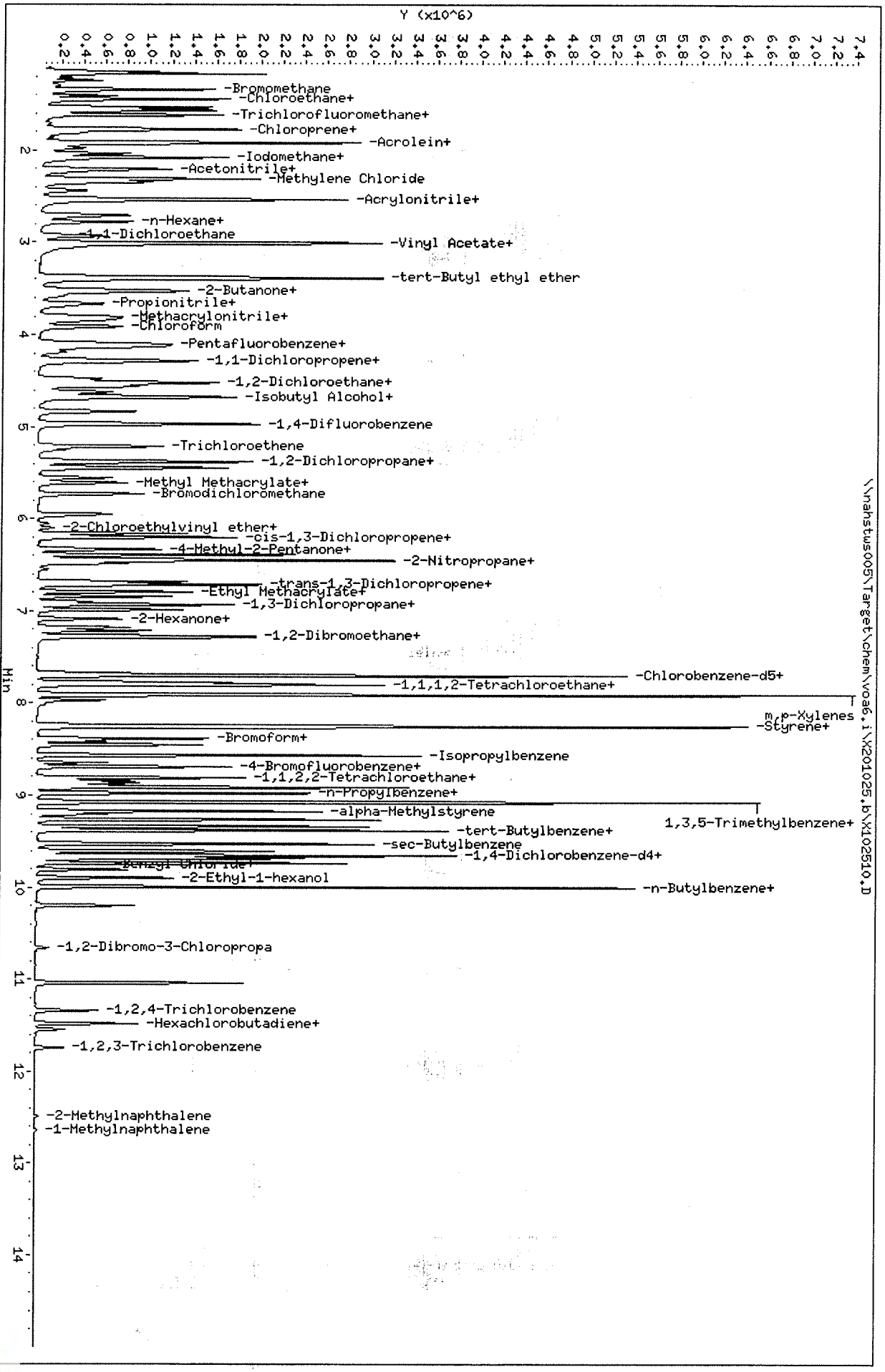
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 25-OCT-2020 19:50
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:29 Cal File: X102509.D
Als bottle: 13 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	145183	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	325175	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	284217	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	137394	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	392180	150.000	154.23
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	410237	150.000	146.85
$	30 Dibromofluoromethane	113	4.111	4.111	(0.981)	314986	150.000	157.60
$	48 Toluene-d8	98	6.388	6.388	(0.833)	1192701	150.000	145.39
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	264336	150.000	142.97
	11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	498515	150.000	140.98
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	472013	150.000	134.39
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	342494	150.000	150.75
	17 Methylene Chloride	84	2.313	2.313	(0.552)	335712	150.000	146.33
	38 Trichloroethene	130	5.214	5.214	(1.049)	309579	150.000	144.74
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	655246	150.000	146.80



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102510.D
Date : 25-OCT-2020 19:50
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102511.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 25-OCT-2020 20:11
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:50 Cal File: X102510.D
Als bottle: 14 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

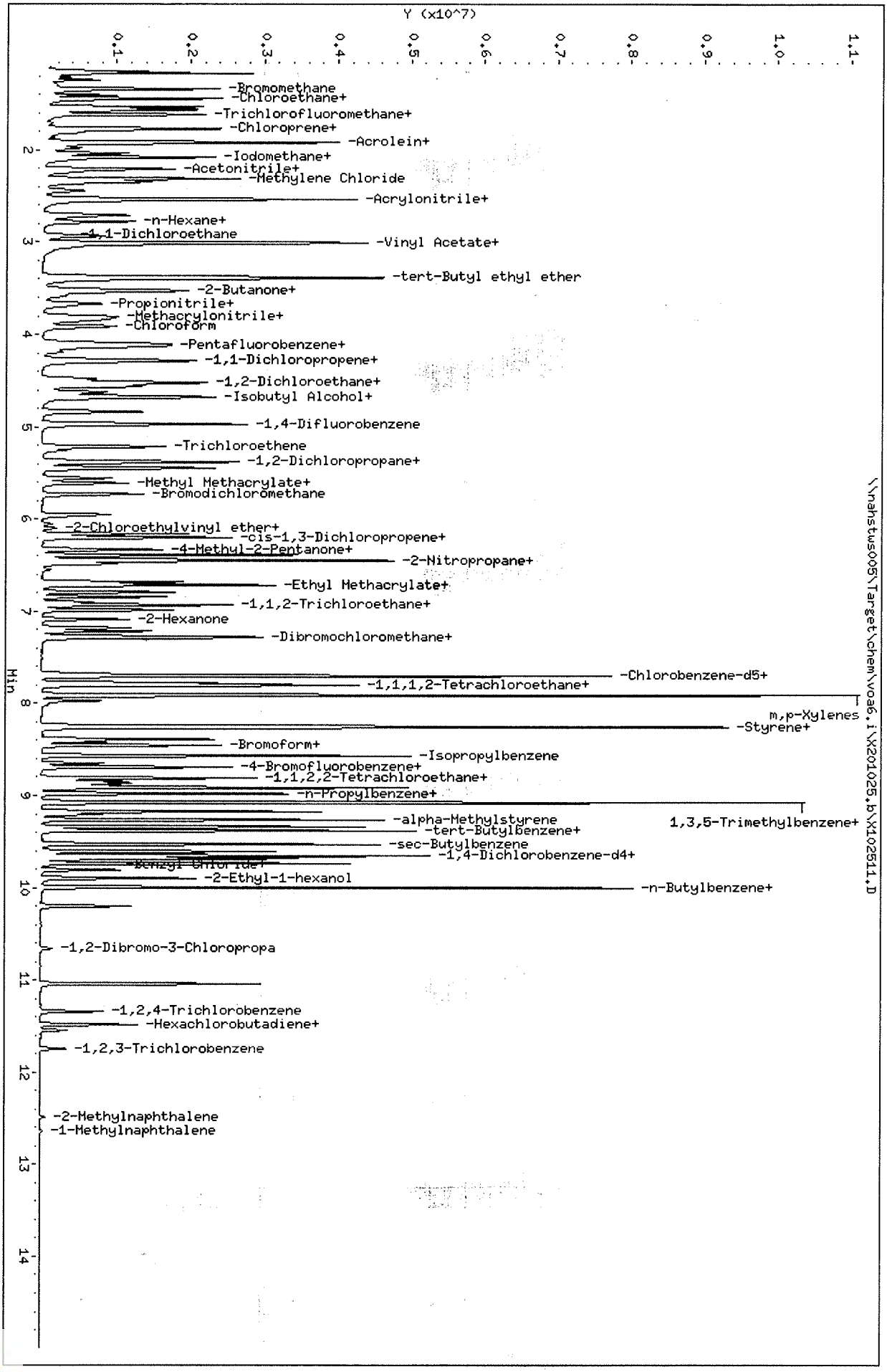
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150836	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	333359	50.0000	
*	47 Chlorobenzene-d5	117	7.678	7.678	(1.000)	292571	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	146057	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	519723	200.000	196.72
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	592427	200.000	205.22(A)
$	30 Dibromofluoromethane	113	4.103	4.103	(0.979)	455615	200.000	219.42(A)
$	48 Toluene-d8	98	6.388	6.388	(0.832)	1743873	200.000	205.78(A)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	365695	200.000	192.15
	11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	683631	200.000	186.08
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	677170	200.000	188.08
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	499766	200.000	211.73(A)
	17 Methylene Chloride	84	2.313	2.313	(0.552)	462731	200.000	194.13
	38 Trichloroethene	130	5.214	5.214	(1.049)	427628	200.000	195.03
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	862323	200.000	185.96

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102511.D
Date : 25-OCT-2020 20:11
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201025.b\X102514.D Page 1
Report Date: 30-Nov-2020 13:14

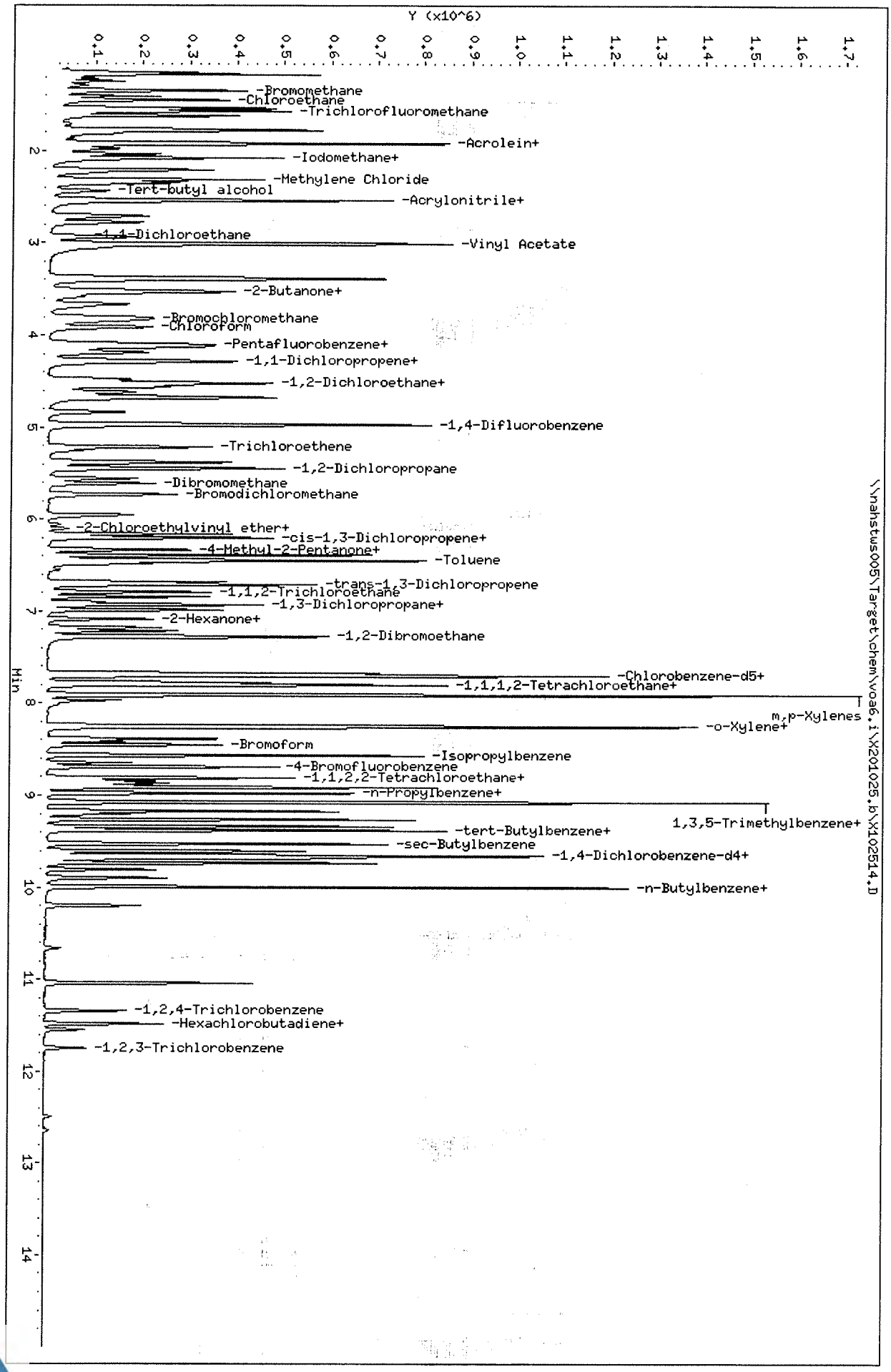
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201025.b\X102514.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 25-OCT-2020 21:14
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;2;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201025.b\8260W.m
Meth Date : 30-Nov-2020 13:14 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 20:11 Cal File: X102511.D
Als bottle: 17 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	140573	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	287781	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.678	(1.000)	266338	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	112403	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.070)	124058	50.4098	50.40
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	118719	46.7309	46.73
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	98567	50.9348	50.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	349750	46.6804	46.68
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	76481	44.1456	44.14
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	158166	46.1969	46.19
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	143965	46.3187	46.31
27 cis-1,2-Dichloroethene	96	3.537	3.530	(0.844)	102698	46.6863	46.68
17 Methylene Chloride	84	2.312	2.313	(0.552)	97503	43.8933	43.89
38 Trichloroethene	130	5.214	5.214	(1.049)	90499	47.8118	47.81
5 Vinyl Chloride	62	1.145	1.145	(0.273)	199528	46.1698	46.16



Data File: \\nahstus005\Target\chem\voa6.i\X201025.b\X102514.D
Date : 25-OCT-2020 21:14
Client ID: ICV
Sample Info: VSTD050;VSTD050;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 42428 **Analyst:** Presenta Cabascango

Date: 10-29-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	10-29-2020 11:00 am	1.00	50 mL	50 mL	X102901.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	10-29-2020 11:20 am	1.00	50 mL	50 mL	X102902.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	BLANK	SAMP	10-29-2020 11:41 am	1.00	50 mL	50 mL	X102903.D	Liquid	Y	NA
4	CCB	SAMP	10-29-2020 12:02 pm	1.00	50 mL	50 mL	X102904.D	Liquid	Y	NA
5	VLCSW-201029	LCS	10-29-2020 12:23 pm	1.00	50 mL	50 mL	X102905.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLK	SAMP	10-29-2020 12:44 pm	1.00	50 mL	50 mL	X102906.D	Liquid	Y	NA
7	VBLKW-201029	MBLK	10-29-2020 01:05 pm	1.00	50 mL	50 mL	X102907.D	Liquid	Y	NA
8	HS20101089-11	SAMP	10-29-2020 01:27 pm	1.00	50 mL	50 mL	X102908.D	Liquid	Y	NA
9	HS20101089-01	SAMP	10-29-2020 01:57 pm	1.00	50 mL	50 mL	X102909.D	Liquid	Y	NA
10	HS20101089-04	SAMP	10-29-2020 02:18 pm	1.00	50 mL	50 mL	X102910.D	Liquid	Y	NA
11	HS20101089-02	SAMP	10-29-2020 02:39 pm	1.00	50 mL	50 mL	X102911.D	Liquid	Y	NA
12	HS20101089-03	SAMP	10-29-2020 03:00 pm	10.00	5 mL	50 mL	X102912.D	Liquid	Y	NA
13	HS20101248-06	SAMP	10-29-2020 03:21 pm	1.00	50 mL	50 mL	X102913.D	Liquid	Y	NA
14	HS20101248-06MS	MS	10-29-2020 03:42 pm	1.00	50 mL	50 mL	X102914.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
15	HS20101248-06MSD	MSD	10-29-2020 04:03 pm	1.00	50 mL	50 mL	X102915.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
16	HS20101089-03	SAMP	10-29-2020 04:24 pm	100.0(	500 µL	50 mL	X102916.D	Liquid	Y	NA
17	HS20101255-02	SAMP	10-29-2020 04:45 pm	5.00	10 mL	50 mL	X102917.D	Liquid	Y	NA
18	HS20101089-10	SAMP	10-29-2020 05:06 pm	1.00	50 mL	50 mL	X102918.D	Liquid	Y	NA
19	HS20101089-06	SAMP	10-29-2020 05:28 pm	1.00	50 mL	50 mL	X102919.D	Liquid	Y	NA
20	HS20101089-07	SAMP	10-29-2020 05:49 pm	1.00	50 mL	50 mL	X102920.D	Liquid	Y	NA
21	HS20101089-08	SAMP	10-29-2020 06:10 pm	1.00	50 mL	50 mL	X102921.D	Liquid	Y	NA
22	HS20101089-09	SAMP	10-29-2020 06:31 pm	1.00	50 mL	50 mL	X102922.D	Liquid	Y	NA
23	HS20101089-05	SAMP	10-29-2020 06:52 pm	1.00	50 mL	50 mL	X102923.D	Liquid	Y	NA
24	CCV-END	CCV	10-29-2020 07:13 pm	1.00	50 mL	50 mL	X102924.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
25	HS20101248-01	SAMP	10-29-2020 07:34 pm	1.00	50 mL	50 mL	X102925.D	Liquid	Y	NA
26	HS20101404-01	SAMP	10-29-2020 07:55 pm	1.00	50 mL	50 mL	X102926.D	Liquid	Y	NA
27	HS20101248-02	SAMP	10-29-2020 08:16 pm	1.00	50 mL	50 mL	X102927.D	Liquid	Y	NA
28	HS20101248-03	SAMP	10-29-2020 08:37 pm	1.00	50 mL	50 mL	X102928.D	Liquid	Y	NA
29	HS20101248-04	SAMP	10-29-2020 08:58 pm	1.00	50 mL	50 mL	X102929.D	Liquid	Y	NA
30	HS20101248-05	SAMP	10-29-2020 09:19 pm	1.00	50 mL	50 mL	X102930.D	Liquid	Y	NA
31	BFB	TUNE	10-29-2020 09:40 pm	1.00	50 mL	50 mL	Y102901.D	Liquid	Y	NA
	Auto find/ purged									
32	CCV	CCV	10-29-2020 10:01 pm	1.00	50 mL	50 mL	Y102902a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
33	CCV	CCV	10-29-2020 10:22 pm	1.00	50 mL	50 mL	Y102903.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
34	CCB	SAMP	10-29-2020 10:43 pm	1.00	50 mL	50 mL	Y102904.D	Liquid	Y	NA
35	VLCSW-201029	LCS	10-29-2020 11:04 pm	1.00	50 mL	50 mL	Y102905.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
36	BLANK	SAMP	10-29-2020 11:25 pm	1.00	50 mL	50 mL	Y102906.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
37	VBLKW-201029	MBLK	10-29-2020 11:46 pm	1.00	50 mL	50 mL	Y102907.D	Liquid	Y	NA
38	HS20101430-07	SAMP	10-30-2020 12:07 am	1.00	50 mL	50 mL	Y102908.D	Liquid	Y	NA
39	HS20101437-06	SAMP	10-30-2020 12:28 am	1.00	50 mL	50 mL	Y102909.D	Liquid	Y	NA
40	HS20101437-08	SAMP	10-30-2020 12:49 am	1.00	50 mL	50 mL	Y102910.D	Liquid	Y	NA
41	HS20101437-01	SAMP	10-30-2020 01:10 am	1.00	50 mL	50 mL	Y102911.D	Liquid	Y	NA
42	HS20101437-02	SAMP	10-30-2020 01:31 am	1.00	50 mL	50 mL	Y102912.D	Liquid	Y	NA
43	HS20101437-03	SAMP	10-30-2020 01:52 am	1.00	50 mL	50 mL	Y102913.D	Liquid	Y	NA
44	HS20101437-03MS	MS	10-30-2020 02:13 am	1.00	50 mL	50 mL	Y102914.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
45	HS20101437-03MSD	MSD	10-30-2020 02:34 am	1.00	50 mL	50 mL	Y102915.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
46	HS20101437-04	SAMP	10-30-2020 02:56 am	1.00	50 mL	50 mL	Y102916.D	Liquid	Y	NA
47	HS20101437-05	SAMP	10-30-2020 03:17 am	1.00	50 mL	50 mL	Y102917.D	Liquid	Y	NA
48	HS20101437-07	SAMP	10-30-2020 03:38 am	1.00	50 mL	50 mL	Y102918.D	Liquid	Y	NA
49	HS20101437-09	SAMP	10-30-2020 03:59 am	1.00	50 mL	50 mL	Y102919.D	Liquid	Y	NA
50	HS20101437-10	SAMP	10-30-2020 04:20 am	1.00	50 mL	50 mL	Y102920.D	Liquid	Y	NA
51	HS20101437-11	SAMP	10-30-2020 04:41 am	1.00	50 mL	50 mL	Y102921.D	Liquid	Y	NA
52	HS20101405-01	SAMP	10-30-2020 05:02 am	1.00	50 mL	50 mL	Y102922.D	Liquid	Y	NA
53	HS20101405-02	SAMP	10-30-2020 05:23 am	1.00	50 mL	50 mL	Y102923.D	Liquid	Y	NA
54	HS20101405-03	SAMP	10-30-2020 05:44 am	1.00	50 mL	50 mL	Y102924.D	Liquid	Y	NA
55	HS20101405-04	SAMP	10-30-2020 06:05 am	1.00	50 mL	50 mL	Y102925.D	Liquid	Y	NA
56	HS20101405-05	SAMP	10-30-2020 06:26 am	1.00	50 mL	50 mL	Y102926.D	Liquid	Y	NA
57	HS20101405-06	SAMP	10-30-2020 06:47 am	1.00	50 mL	50 mL	Y102927.D	Liquid	Y	NA
58	HS20101405-07	SAMP	10-30-2020 07:08 am	1.00	50 mL	50 mL	Y102928.D	Liquid	Y	NA
59	HS20101405-08	SAMP	10-30-2020 07:29 am	1.00	50 mL	50 mL	Y102929.D	Liquid	Y	NA
60	BLANK	SAMP	10-30-2020 07:50 am	1.00	50 mL	50 mL	Y102930.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-06
CAL STD ID	31106-53-01/02
BFB ID	31106-51-06
pH Paper	634-64-10

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 (TOL) #	OTHER (DCE) #	TOT OUT
01	VLCSW-201029	101	106	101	104	0
02	VBLKW-201029	88	85	96	84	0
03	HS20101089-11	88	85	97	83	0
04	HS20101089-01	88	86	97	84	0
05	HS20101089-04	87	83	97	81	0
06	HS20101089-02	88	86	96	84	0
07	HS20101089-03	89	84	96	82	0
08	HS20101248-06	88	89	98	83	0
09	HS20101248-06	86	87	93	82	0
10	HS20101089-03	87	87	96	83	0
11	HS20101089-10	89	85	96	82	0
12	HS20101089-06	90	86	95	83	0
13	HS20101089-07	87	85	97	84	0
14	HS20101089-08	88	88	98	86	0
15	HS20101089-09	88	84	98	81	0
16	HS20101089-05	86	84	97	81	0
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= 4-Bromofluorobenzene	(70-130)
SMC2	= Dibromofluoromethane	(70-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER(DCE)	= 1,2-Dichloroethane-d4	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-201029

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Lab File ID: X102907 Lab Sample ID: VBLKW-201029

Date Analyzed: 10/29/20 Time Analyzed: 1305

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-201029	VLCSW-201029	X102905	1223
02	HS20101089-1	HS20101089-11	X102908	1327
03	HS20101089-0	HS20101089-01	X102909	1357
04	HS20101089-0	HS20101089-04	X102910	1418
05	HS20101089-0	HS20101089-02	X102911	1439
06	HS20101089-0	HS20101089-03	X102912	1500
07	HS20101248-0	HS20101248-06M	X102914	1542
08	HS20101248-0	HS20101248-06M	X102915	1603
09	HS20101089-0	HS20101089-03	X102916	1624
10	HS20101089-1	HS20101089-10	X102918	1706
11	HS20101089-0	HS20101089-06	X102919	1728
12	HS20101089-0	HS20101089-07	X102920	1749
13	HS20101089-0	HS20101089-08	X102921	1810
14	HS20101089-0	HS20101089-09	X102922	1831
15	HS20101089-0	HS20101089-05	X102923	1852
16				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Lab File ID: X102901 BFB Injection Date: 10/29/20

Instrument ID: VOA6 BFB Injection Time: 1100

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.5
75	30.0 - 60.0% of mass 95	54.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	1.1 (1.2)1
174	Greater than 50.0% of mass 95	94.7
175	5.0 - 9.0% of mass 174	7.4 (7.9)1
176	95.0 - 101.0% of mass 174	93.2 (98.4)1
177	5.0 - 9.0% of mass 176	5.3 (5.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X102902	10/29/20	1120
02	VLCSW-201029	VLCSW-201029	X102905	10/29/20	1223
03	VBLKW-201029	VBLKW-201029	X102907	10/29/20	1305
04	HS20101089-1	HS20101089-11	X102908	10/29/20	1327
05	HS20101089-0	HS20101089-01	X102909	10/29/20	1357
06	HS20101089-0	HS20101089-04	X102910	10/29/20	1418
07	HS20101089-0	HS20101089-02	X102911	10/29/20	1439
08	HS20101089-0	HS20101089-03	X102912	10/29/20	1500
09	HS20101248-0	HS20101248-06M	X102914	10/29/20	1542
10	HS20101248-0	HS20101248-06M	X102915	10/29/20	1603
11	HS20101089-0	HS20101089-03	X102916	10/29/20	1624
12	HS20101089-1	HS20101089-10	X102918	10/29/20	1706
13	HS20101089-0	HS20101089-06	X102919	10/29/20	1728
14	HS20101089-0	HS20101089-07	X102920	10/29/20	1749
15	HS20101089-0	HS20101089-08	X102921	10/29/20	1810
16	HS20101089-0	HS20101089-09	X102922	10/29/20	1831
17	HS20101089-0	HS20101089-05	X102923	10/29/20	1852
18	CCV-END	CCV-END	X102924	10/29/20	1913
19					
20					
21					
22					

FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Instrument ID: VOA6 Calibration Date: 10/29/20 Time: 1120

Lab File ID: X102902 Init. Calib. Date(s): 10/25/20 10/25/20

Init. Calib. Times: 1642 2011

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5400000	0.6363296	0.6363296	0.1	-17.84	20.00	AVRG
Trichloroethene	0.3290000	0.3885641	0.3885641	0.2	-18.10	20.00	AVRG
Methylene Chloride	0.7900000	0.7383000	0.7383000	0.1	6.54	20.00	AVRG
cis-1,2-Dichloroethene	0.7820000	0.8349939	0.8349939	0.1	-6.78	20.00	AVRG
Vinyl Chloride	1.5370000	1.2674709	1.2674709	0.1	17.54	20.00	AVRG
1,1,2-Trichloroethane	0.3250000	0.3298846	0.3298846	0.1	-1.50	20.00	AVRG
1,1-Dichloroethene	1.2180000	1.0467304	1.0467304	0.1	14.06	20.00	AVRG
4-Bromofluorobenzene	50.371451	50.000000	0.4820183	0.1	-0.74	20.00	LINR
Dibromofluoromethane	0.6880000	0.7357622	0.7357622	0.1	-6.94	20.00	AVRG
Toluene-d8	49.174371	50.000000	1.3860279	0.1	1.65	20.00	LINR
1,2-Dichloroethane-d4	52.014538	50.000000	0.9106275	0.1	-4.03	20.00	LINR

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Instrument ID: VOA6 Calibration Date: 10/29/20 Time: 1913

Lab File ID: X102924 Init. Calib. Date(s): 10/25/20 10/25/20

Init. Calib. Times: 1642 2011

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5400000	0.5515801	0.5515801	0.1	-2.14	50.00	AVRG
Trichloroethene	0.3290000	0.3375500	0.3375500	0.2	-2.60	50.00	AVRG
Methylene Chloride	0.7900000	0.7793478	0.7793478	0.1	1.35	50.00	AVRG
cis-1,2-Dichloroethene	0.7820000	0.8399847	0.8399847	0.1	-7.41	50.00	AVRG
Vinyl Chloride	1.5370000	1.3099258	1.3099258	0.1	14.77	50.00	AVRG
1,1,2-Trichloroethane	0.3250000	0.3060576	0.3060576	0.1	5.83	50.00	AVRG
1,1-Dichloroethene	1.2180000	1.0529246	1.0529246	0.1	13.55	50.00	AVRG
4-Bromofluorobenzene	48.877620	50.000000	0.4671343	0.1	2.24	50.00	LINR
Dibromofluoromethane	0.6880000	0.7033843	0.7033843	0.1	-2.24	50.00	AVRG
Toluene-d8	48.897312	50.000000	1.3779354	0.1	2.20	50.00	LINR
1,2-Dichloroethane-d4	50.016056	50.000000	0.8756189	0.1	-0.03	50.00	LINR

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Lab File ID (Standard): X102902 Date Analyzed: 10/29/20

Instrument ID: VOA6 Time Analyzed: 1120

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(DFB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	283405	4.97	261349	7.67	110704	9.66
	UPPER LIMIT	566810	5.47	522698	8.17	221408	10.16
	LOWER LIMIT	141703	4.47	130675	7.17	55352	9.16
	CLIENT SAMPLE NO.						
01	VLCSW-201029	253644	4.97	234957	7.67	101485	9.67
02	VBLKW-201029	270810	4.97	235624	7.67	87054	9.67
03	HS20101089-11	268531	4.97	228787	7.67	85800	9.67
04	HS20101089-01	277154	4.97	233408	7.67	82977	9.67
05	HS20101089-04	275626	4.97	235052	7.67	88253	9.67
06	HS20101089-02	272185	4.97	232908	7.67	87763	9.67
07	HS20101089-03	270393	4.97	226402	7.67	85740	9.67
08	HS20101248-06	265768	4.97	230229	7.67	96086	9.66
09	HS20101248-06	265753	4.97	246364	7.67	98989	9.66
10	HS20101089-03	263105	4.97	227884	7.67	83747	9.66
11	HS20101089-10	273964	4.97	233682	7.67	88651	9.67
12	HS20101089-06	271144	4.97	232967	7.67	87922	9.67
13	HS20101089-07	273122	4.97	230057	7.67	86806	9.67
14	HS20101089-08	274449	4.97	228439	7.67	84494	9.67
15	HS20101089-09	266409	4.97	224452	7.67	81382	9.67
16	HS20101089-05	274184	4.97	230374	7.67	84225	9.67
17							
18							
19							
20							

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101089

Lab File ID (Standard): X102902 Date Analyzed: 10/29/20

Instrument ID: VOA6 Time Analyzed: 1120

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	143825	4.19				
	UPPER LIMIT	287650	4.69				
	LOWER LIMIT	71913	3.69				
	CLIENT SAMPLE NO.						
01	VLCSW-201029	130122	4.19				
02	VBLKW-201029	158897	4.19				
03	HS20101089-11	158744	4.19				
04	HS20101089-01	160321	4.19				
05	HS20101089-04	161168	4.19				
06	HS20101089-02	157232	4.19				
07	HS20101089-03	160314	4.19				
08	HS20101248-06	155347	4.19				
09	HS20101248-06	153890	4.19				
10	HS20101089-03	150057	4.19				
11	HS20101089-10	161082	4.19				
12	HS20101089-06	155622	4.19				
13	HS20101089-07	155595	4.19				
14	HS20101089-08	153229	4.19				
15	HS20101089-09	157356	4.19				
16	HS20101089-05	159164	4.19				
17							
18							
19							
20							

IS4 = Pentafluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102901.D

Date : 29-OCT-2020 11:00

Client ID: BFB

Instrument: voa6.i

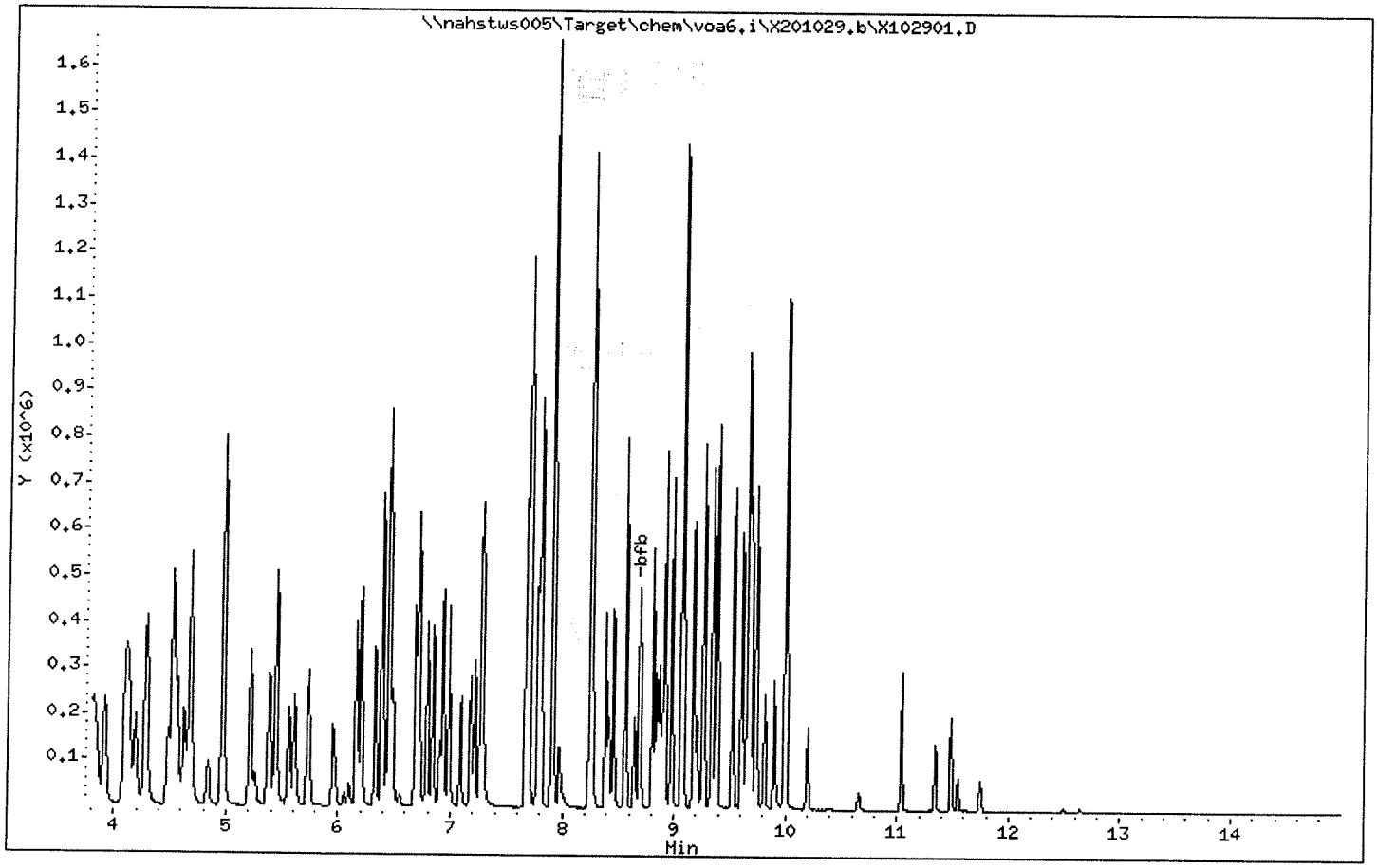
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102901.D

Date : 29-OCT-2020 11:00

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

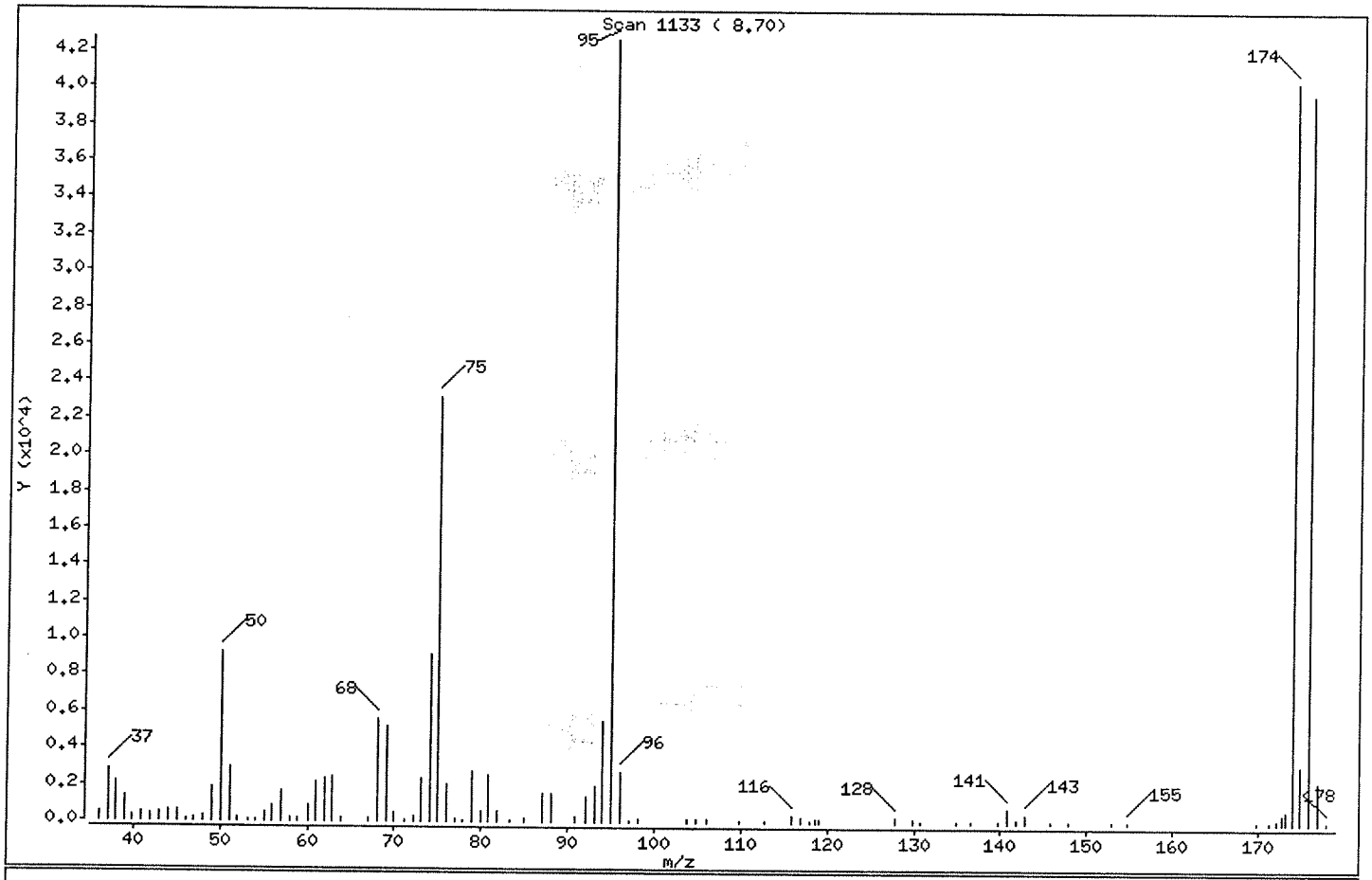
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.52
75	30.00 - 60.00% of mass 95	54.25
96	5.00 - 9.00% of mass 95	6.55
173	Less than 2.00% of mass 174	1.15 (1.21)
174	Greater than 50.00% of mass 95	94.66
175	5.00 - 9.00% of mass 174	7.45 (7.87)
176	95.00 - 101.00% of mass 174	93.16 (98.42)
177	5.00 - 9.00% of mass 176	5.31 (5.70)

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102901.D

Date : 29-OCT-2020 11:00

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X102901.D
Spectrum: Scan 1133 (8.70)
Location of Maximum: 95.00
Number of points: 90

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	535	58.90	149	84.90	199	130.70	57
37.00	2817	60.00	907	87.00	1618	134.90	122
38.00	2199	61.00	2199	88.00	1532	136.60	105
39.00	1399	62.00	2338	90.80	266	139.80	130
39.90	251	62.90	2456	92.00	1370	140.80	769
40.90	452	63.90	157	93.00	1964	141.90	214
41.90	367	67.00	193	94.00	5525	142.80	493
43.00	444	68.00	5594	95.00	42680	145.70	91
44.00	566	69.00	5156	96.00	2796	147.90	142
45.00	574	69.80	480	97.00	94	152.90	53
46.00	82	71.20	101	98.10	187	154.70	63
46.90	197	72.10	273	103.80	238	169.90	118
47.90	277	73.00	2388	104.80	190	171.30	116
49.00	1825	74.00	9118	106.10	213	172.10	211
50.00	9183	75.00	23152	109.90	111	172.70	489
51.00	2938	76.00	2085	112.70	79	173.10	706
51.90	150	77.10	240	115.90	405	173.90	40400
53.20	55	77.80	104	116.90	315	174.90	3179
54.10	60	78.90	2729	117.90	121	175.90	39760
55.00	523	79.90	576	118.60	167	176.90	2268
56.00	888	80.80	2548	119.10	179	178.00	65
57.00	1627	81.80	606	127.70	249		
58.00	172	83.20	97	129.80	244		

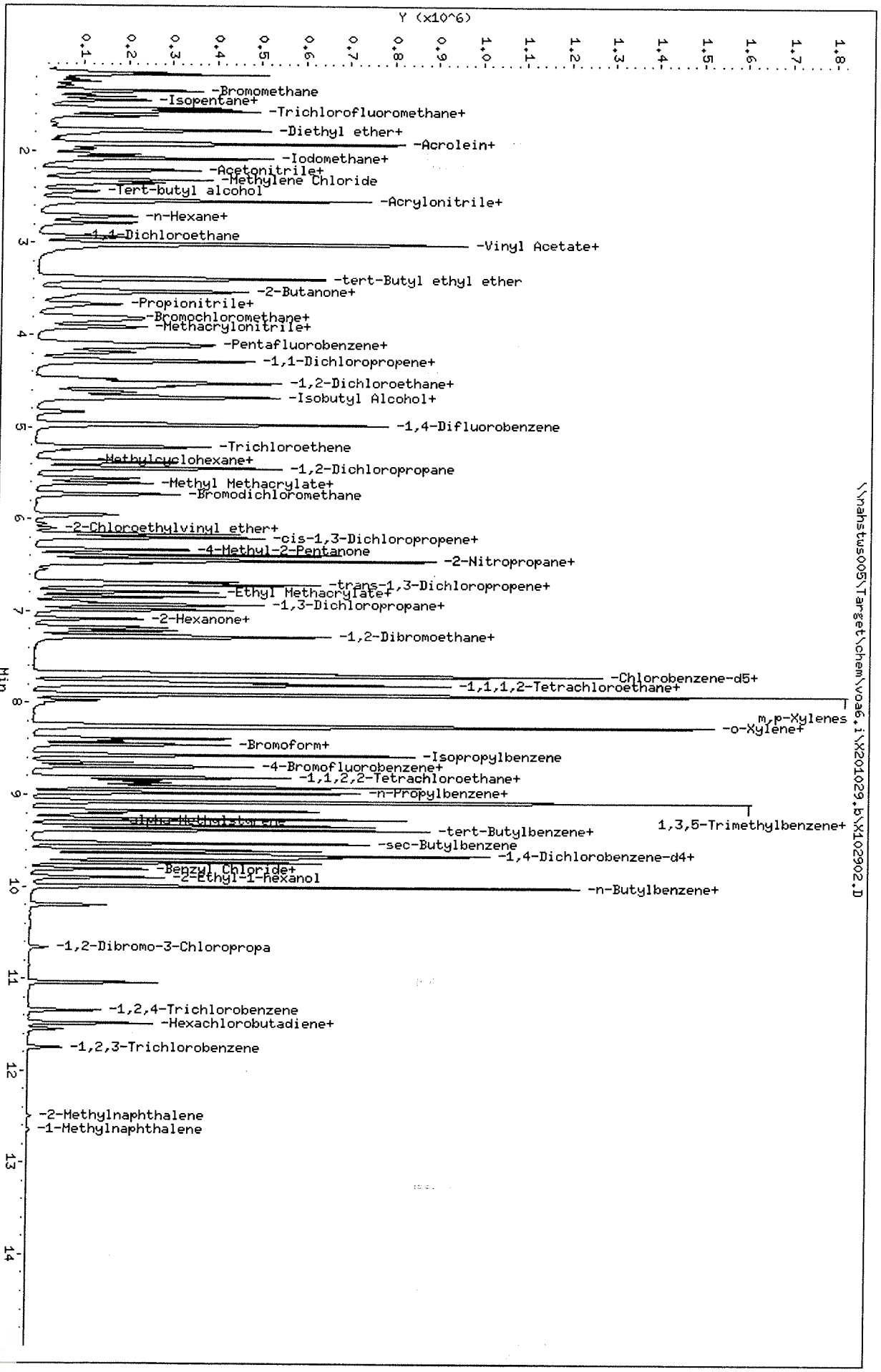
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102902.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 29-OCT-2020 11:20
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	143825	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	283405	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	261349	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	110704	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	130971	50.0000	52.01
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	125975	50.0000	50.37
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	105821	50.0000	53.44
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	362237	50.0000	49.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	86215	50.0000	50.71
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	150546	50.0000	42.97
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	180339	50.0000	58.91
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	120093	50.0000	53.35
17 Methylene Chloride	84	2.313	2.313	(0.552)	106186	50.0000	46.72
38 Trichloroethene	130	5.214	5.214	(1.049)	110121	50.0000	59.07
5 Vinyl Chloride	62	1.145	1.145	(0.273)	182294	50.0000	41.22



Data File: \\nahstus005\Target\chem\voa6.i\X201029.b\X102902.D
Date : 29-OCT-2020 11:20
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102905.D Page 1
Report Date: 30-Nov-2020 14:34

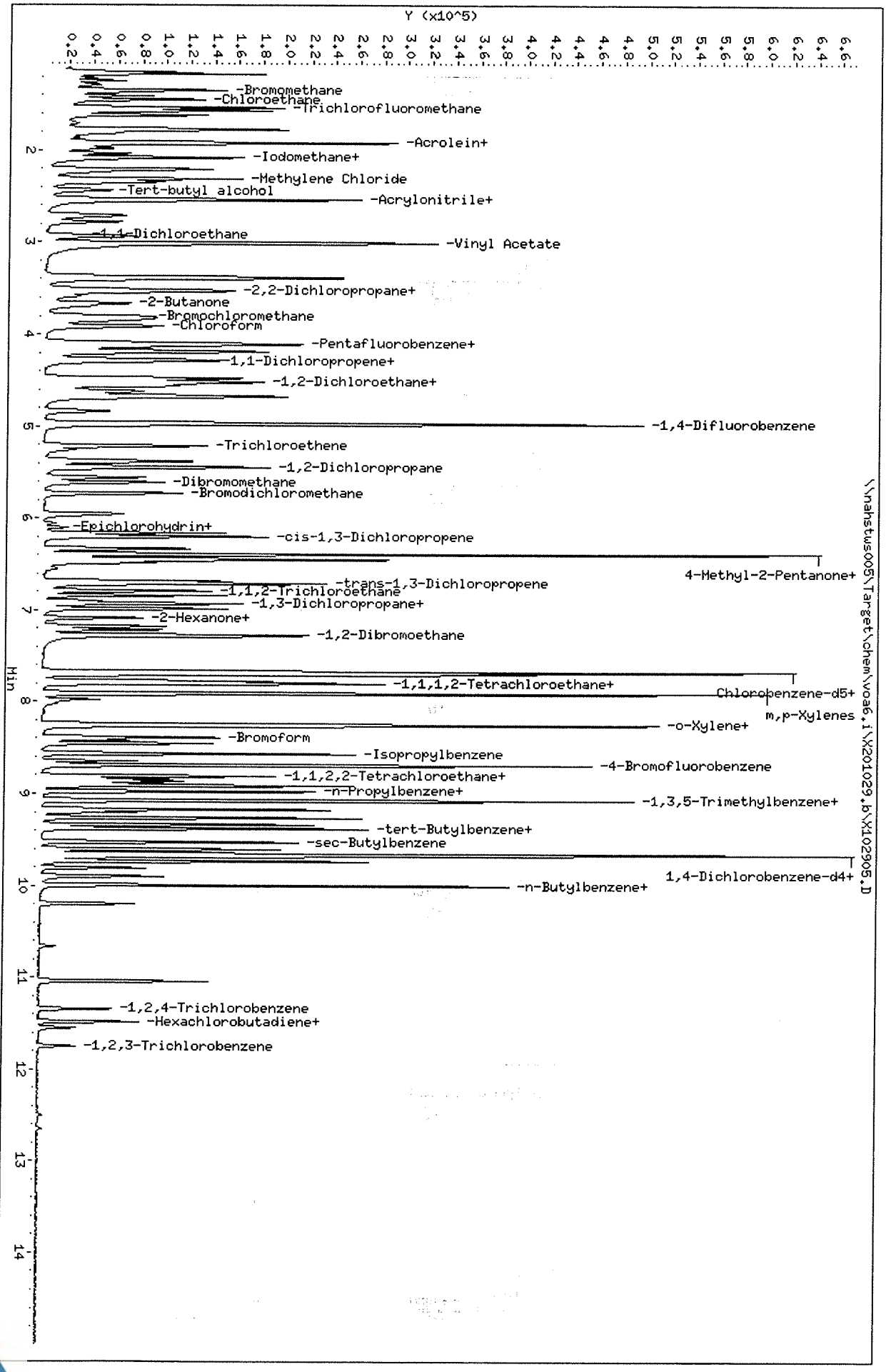
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102905.D
Lab Smp Id: VLCSW-201029 Client Smp ID: VLCSW-201029
Inj Date : 29-OCT-2020 12:23
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-201029;VLCSW-201029;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	130122	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	253644	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	234957	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	101485	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	118945	52.2130	52.21
$	69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	113312	50.3964	50.39
$	30 Dibromofluoromethane	113	4.103	4.110	(0.979)	95189	53.1400	53.13
$	48 Toluene-d8	98	6.388	6.388	(0.833)	333434	50.3076	50.30
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	32056	20.9743	20.97
	11 1,1-Dichloroethene	96	1.919	1.926	(0.458)	53428	16.8585	16.85
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	65689	23.9789	23.97
	27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	45437	22.3146	22.31
	17 Methylene Chloride	84	2.313	2.313	(0.552)	40463	19.6784	19.67
	38 Trichloroethene	130	5.214	5.214	(1.049)	37699	22.5974	22.59
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	64087	16.0205	16.02



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102905.D
Date : 29-OCT-2020 12:23
Client ID: VLCSW-201029
Sample Info: VLCSW-201029;VLCSW-201029;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102907.D
Lab Smp Id: VBLKW-201029 Client Smp ID: VBLKW-201029
Inj Date : 29-OCT-2020 13:05
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-201029;VBLKW-201029;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

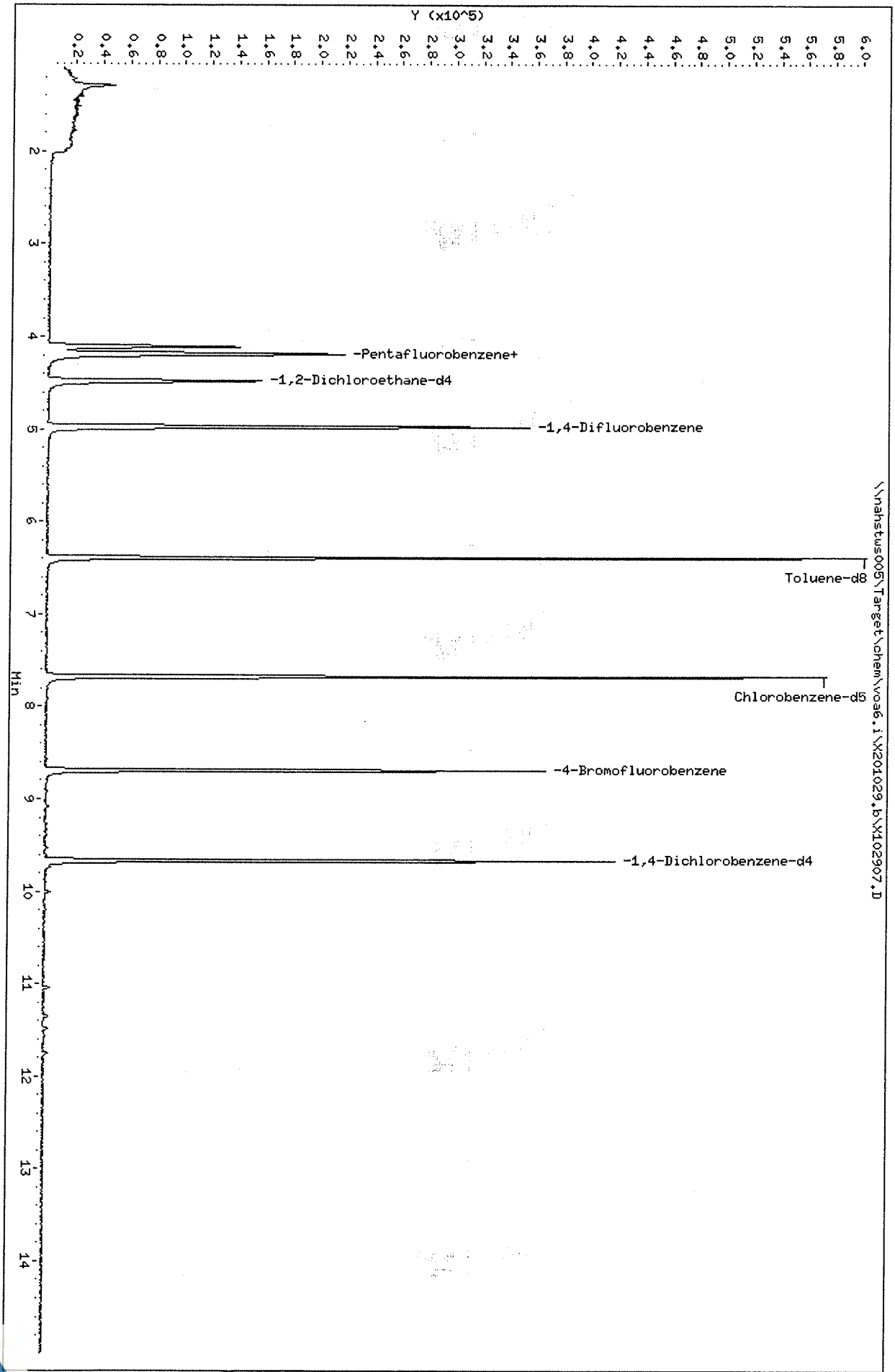
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	158897	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	270810	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	235624	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	87054	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	116231	41.7882	41.78
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	98304	43.8667	43.86
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	92557	42.3135	42.31
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	320102	48.2329	48.23

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102907.D
Date : 29-OCT-2020 13:05
Client ID: VBLKW-201029
Sample Info: VBLKW-201029;VBLKW-201029;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102908.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102908.D
Lab Smp Id: HS20101089-11 Client Smp ID: HS20101089-11
Inj Date : 29-OCT-2020 13:27
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-11;HS20101089-11;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

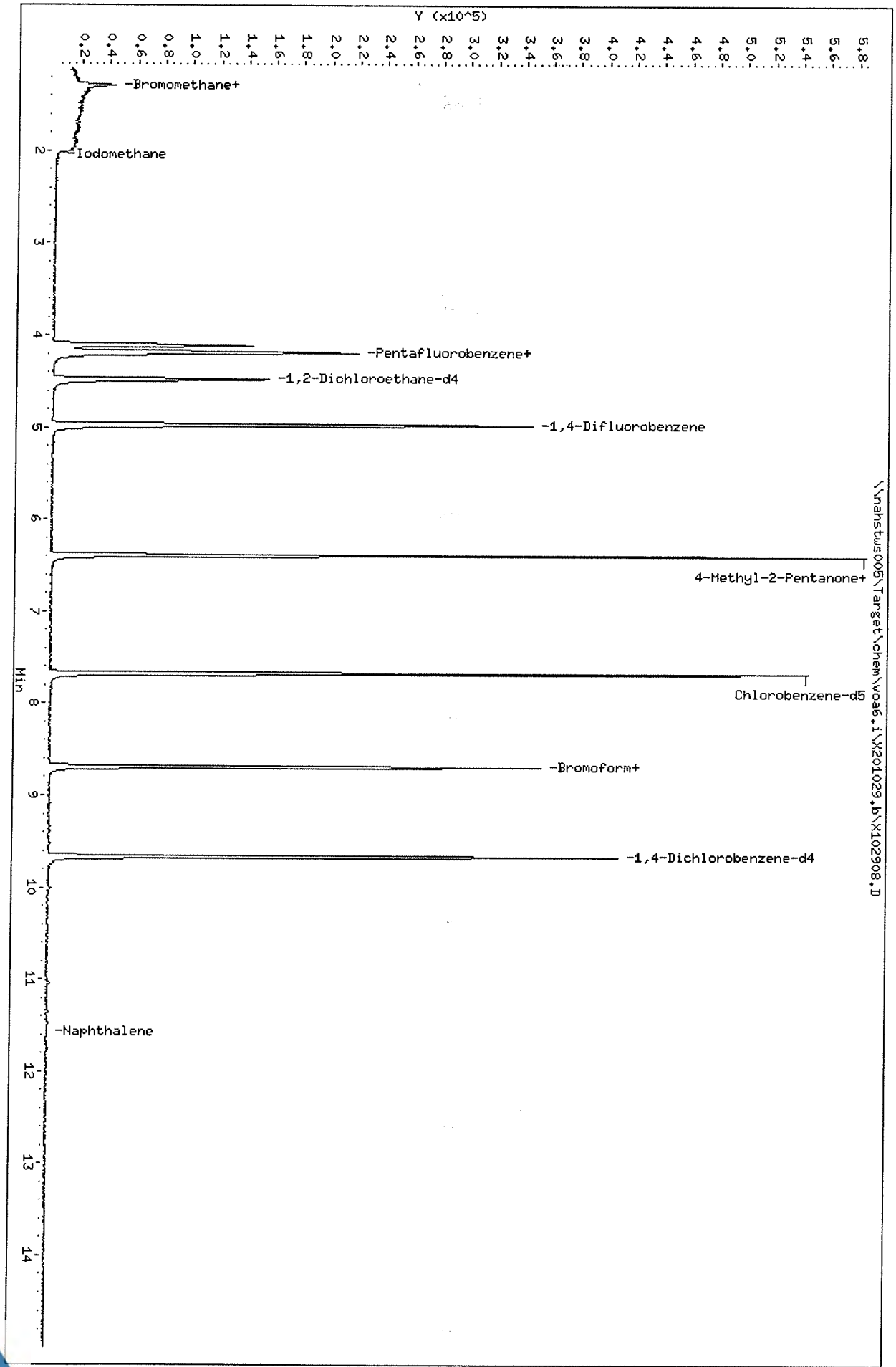
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	158744	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	268531	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	228787	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	85800	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	115379	41.5221	41.52
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	96328	44.2512	44.25
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	92618	42.3822	42.38
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	313318	48.6076	48.60

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102908.D
Date : 29-OCT-2020 13:27
Client ID: HS20101089-11
Sample Info: HS20101089-11,HS20101089-11,,,
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102909.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102909.D
Lab Smp Id: HS20101089-01 Client Smp ID: HS20101089-01
Inj Date : 29-OCT-2020 13:57
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-01;HS20101089-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

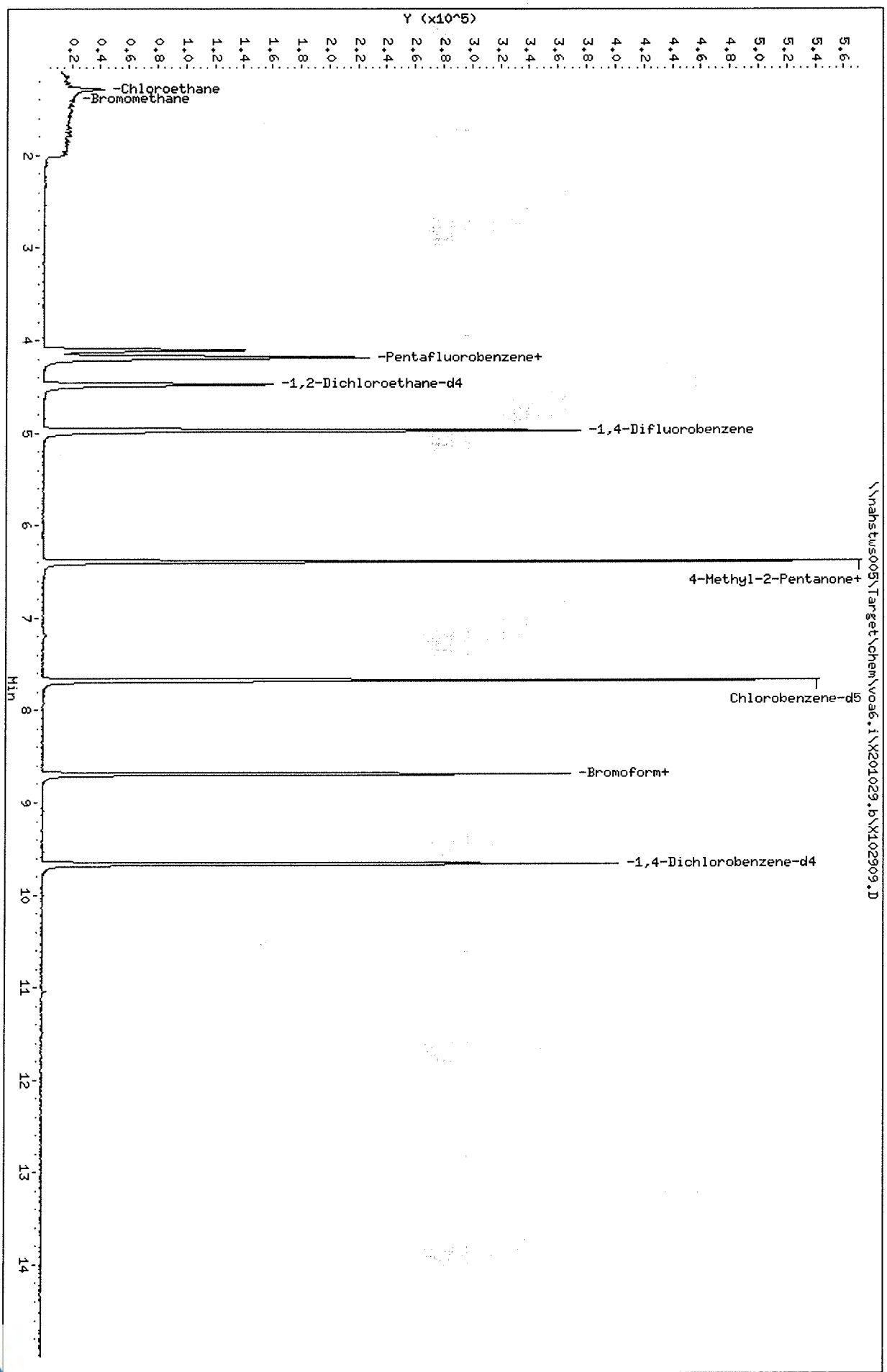
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	160321	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	277154	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	233408	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	82977	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	117393	41.8311	41.83
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	97273	43.8209	43.82
$ 30 Dibromofluoromethane	113	4.103	4.110	(0.979)	94831	42.9680	42.96
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	320174	48.6850	48.68

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102909.D
Date : 29-OCT-2020 13:57
Client ID: HS20101089-01
Sample Info: HS20101089-01;HS20101089-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102910.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102910.D
Lab Smp Id: HS20101089-04 Client Smp ID: HS20101089-04
Inj Date : 29-OCT-2020 14:18
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-04;HS20101089-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

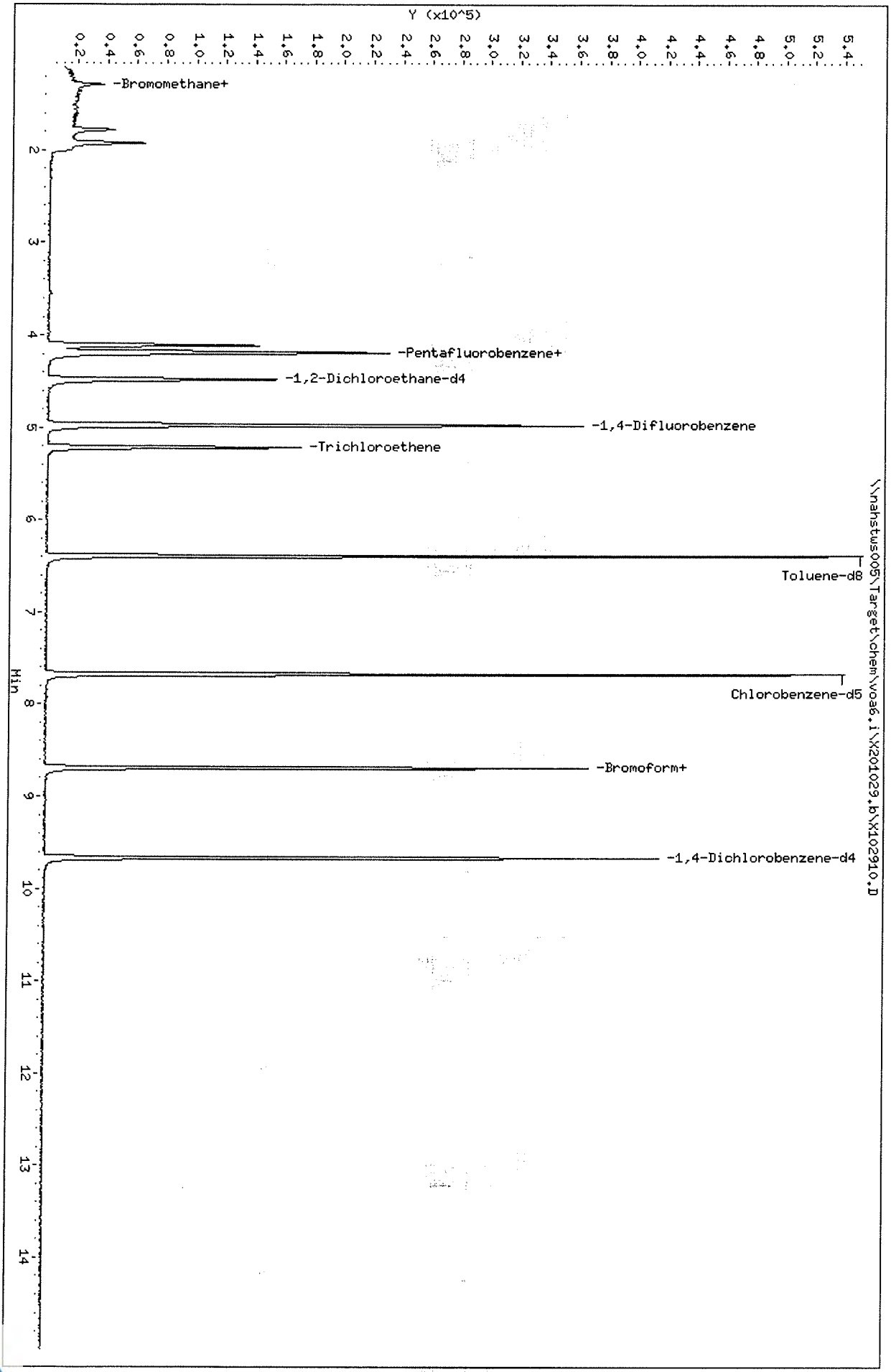
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161168	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	275626	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	235052	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	88253	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	114411	40.5552	40.55(M)
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	97180	43.4886	43.48
$ 30 Dibromofluoromethane	113	4.103	4.110	(0.979)	91677	41.3206	41.32
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	321016	48.4792	48.47
38 Trichloroethene	130	5.214	5.214	(1.049)	46014	25.3819	25.38

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102910.D
Date : 29-OCT-2020 14:18
Client ID: HS20101089-04
Sample Info: HS20101089-04;HS20101089-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102910.D

Date : 29-OCT-2020 14:18

Client ID: HS20101089-04

Instrument: voa6.i

Sample Info: HS20101089-04;HS20101089-04;;;

Purge Volume: 5.0

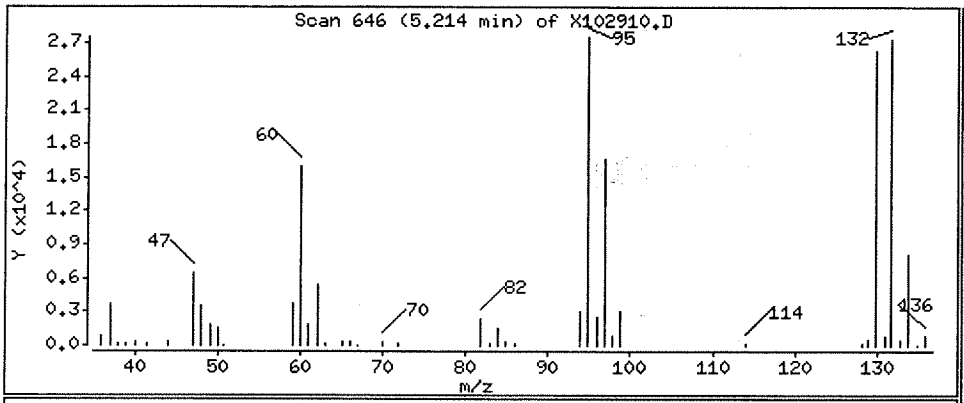
Operator: PC

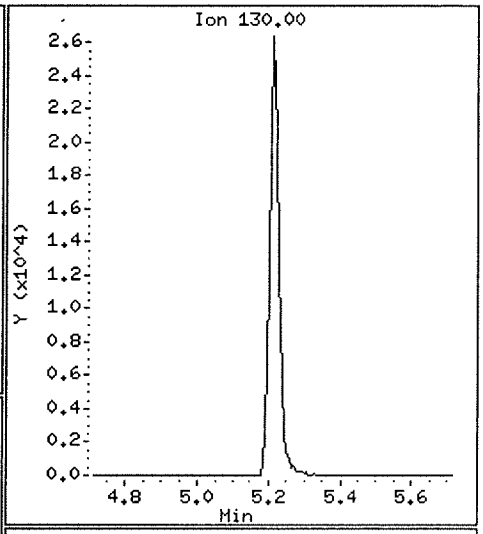
Column phase: DB624

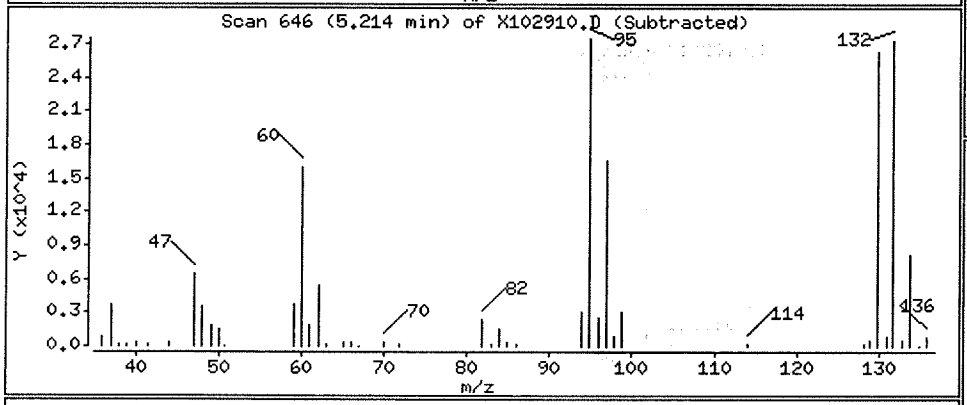
Column diameter: 0.18

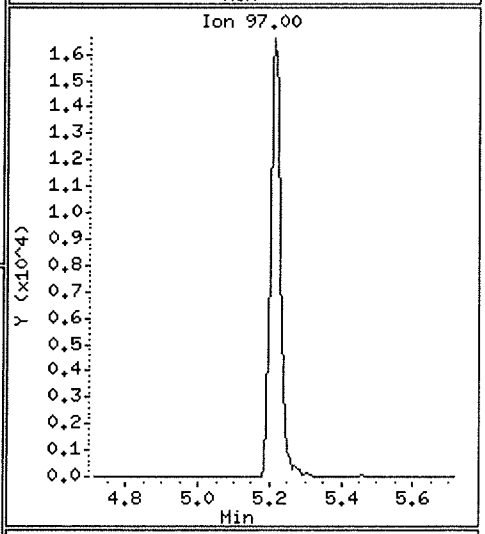
38 Trichloroethene

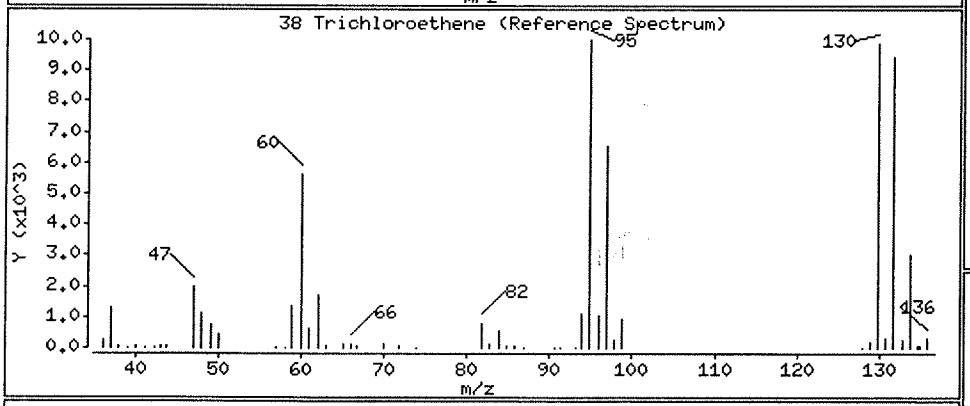
Concentration: 25.38 ug/l

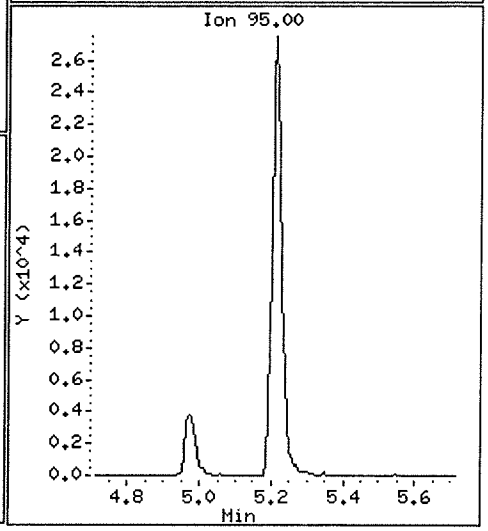


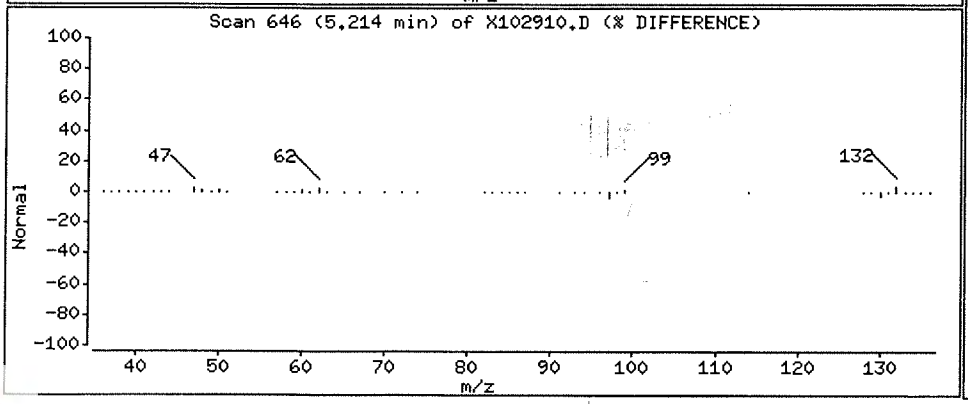












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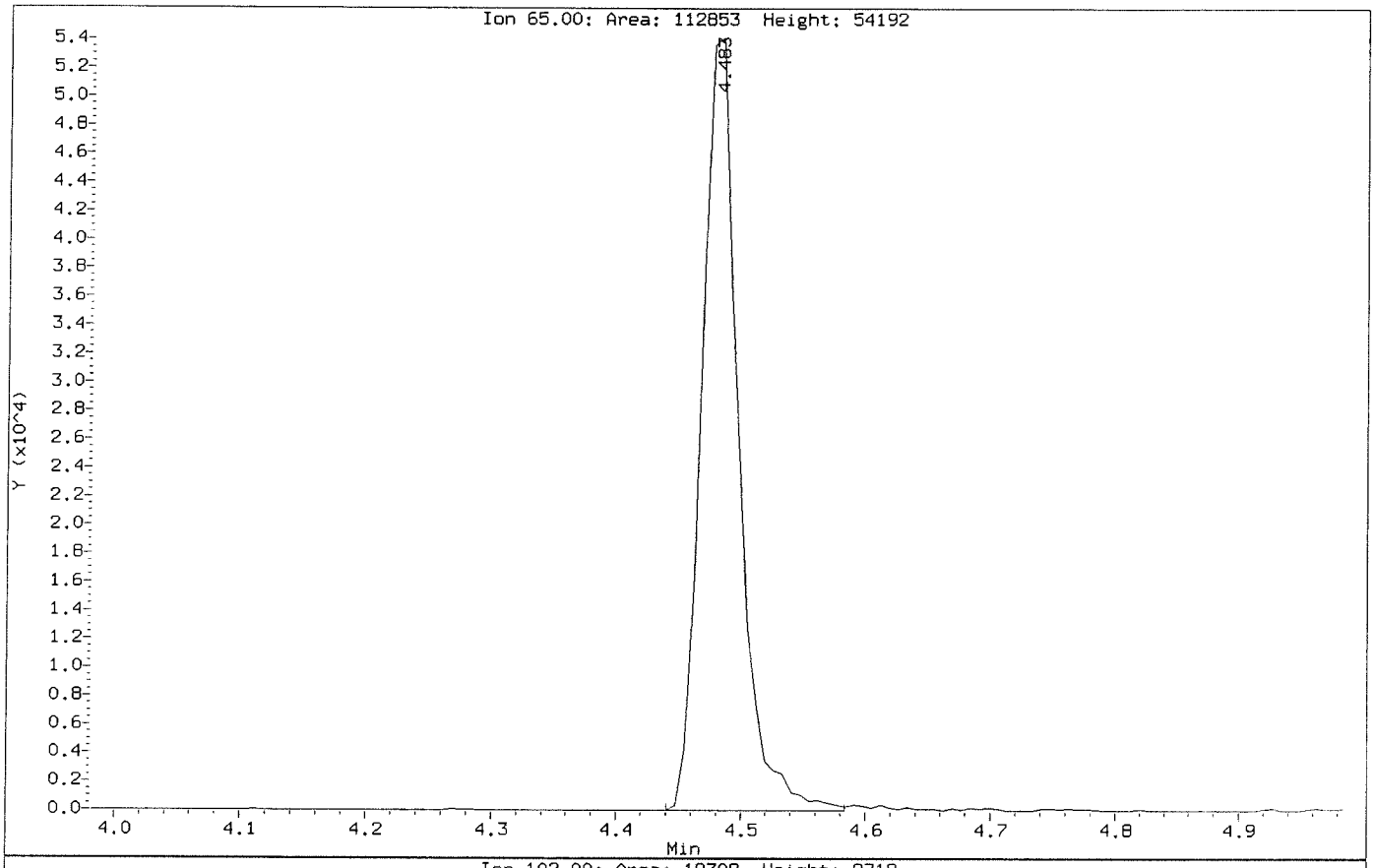
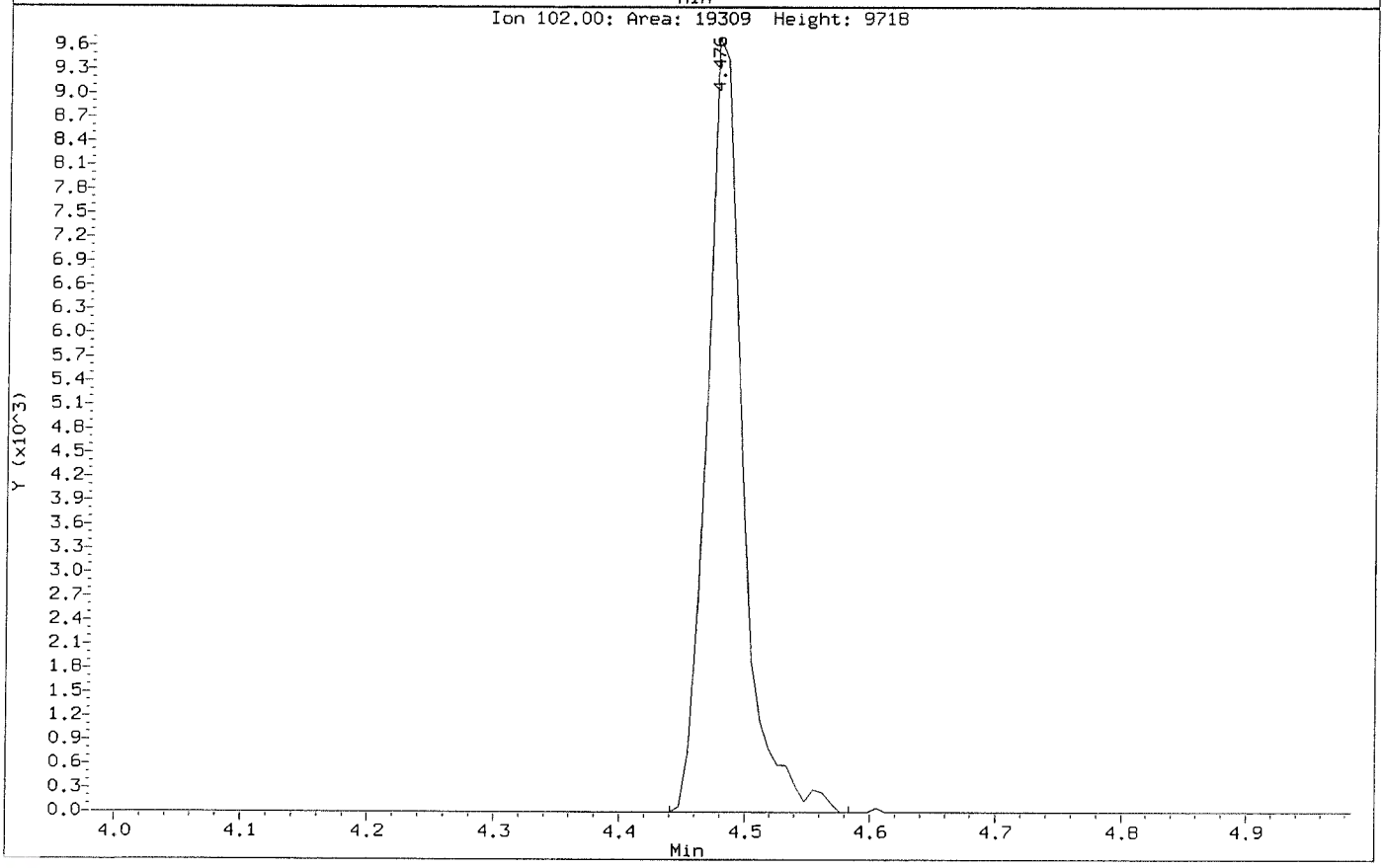
Injection Date: 29-OCT-2020 14:18
Instrument: voa6.i
Client Sample ID: HS20101089-04

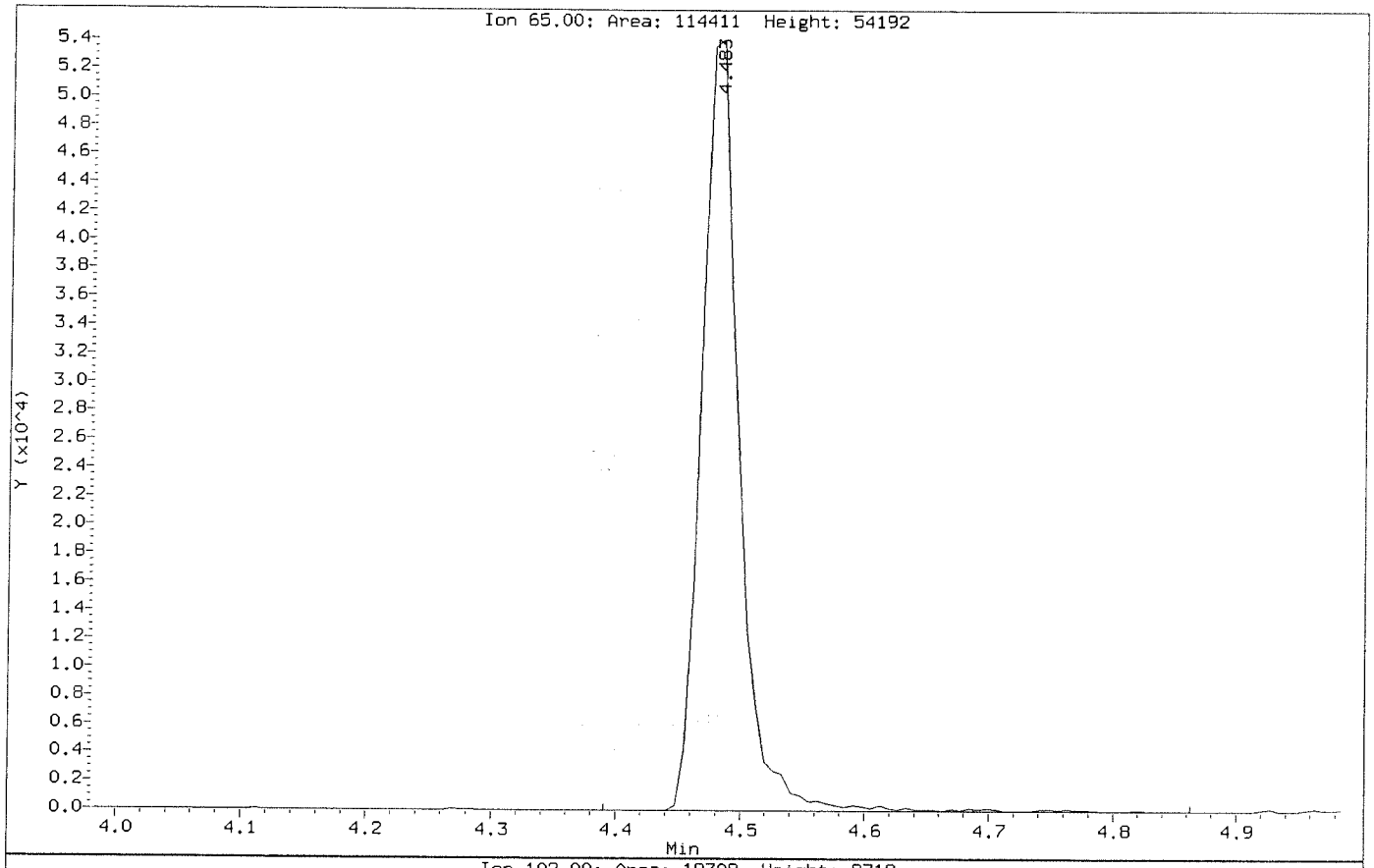
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0

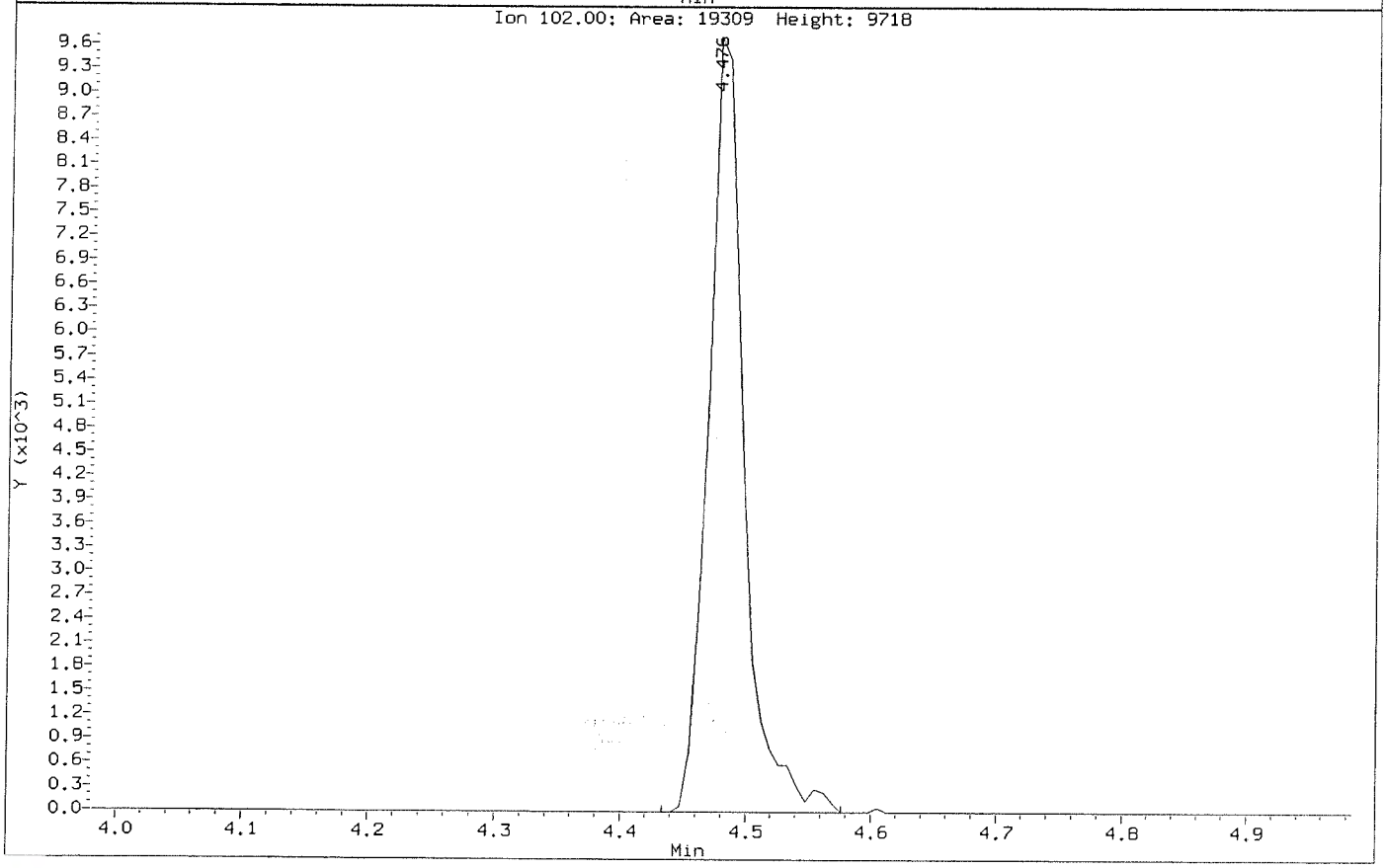




Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102910.D
Injection Date: 29-OCT-2020 14:18
Instrument: voa6.i
Client Sample ID: HS20101089-04

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D
Lab Smp Id: HS20101089-02 Client Smp ID: HS20101089-02
Inj Date : 29-OCT-2020 14:39
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-02;HS20101089-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

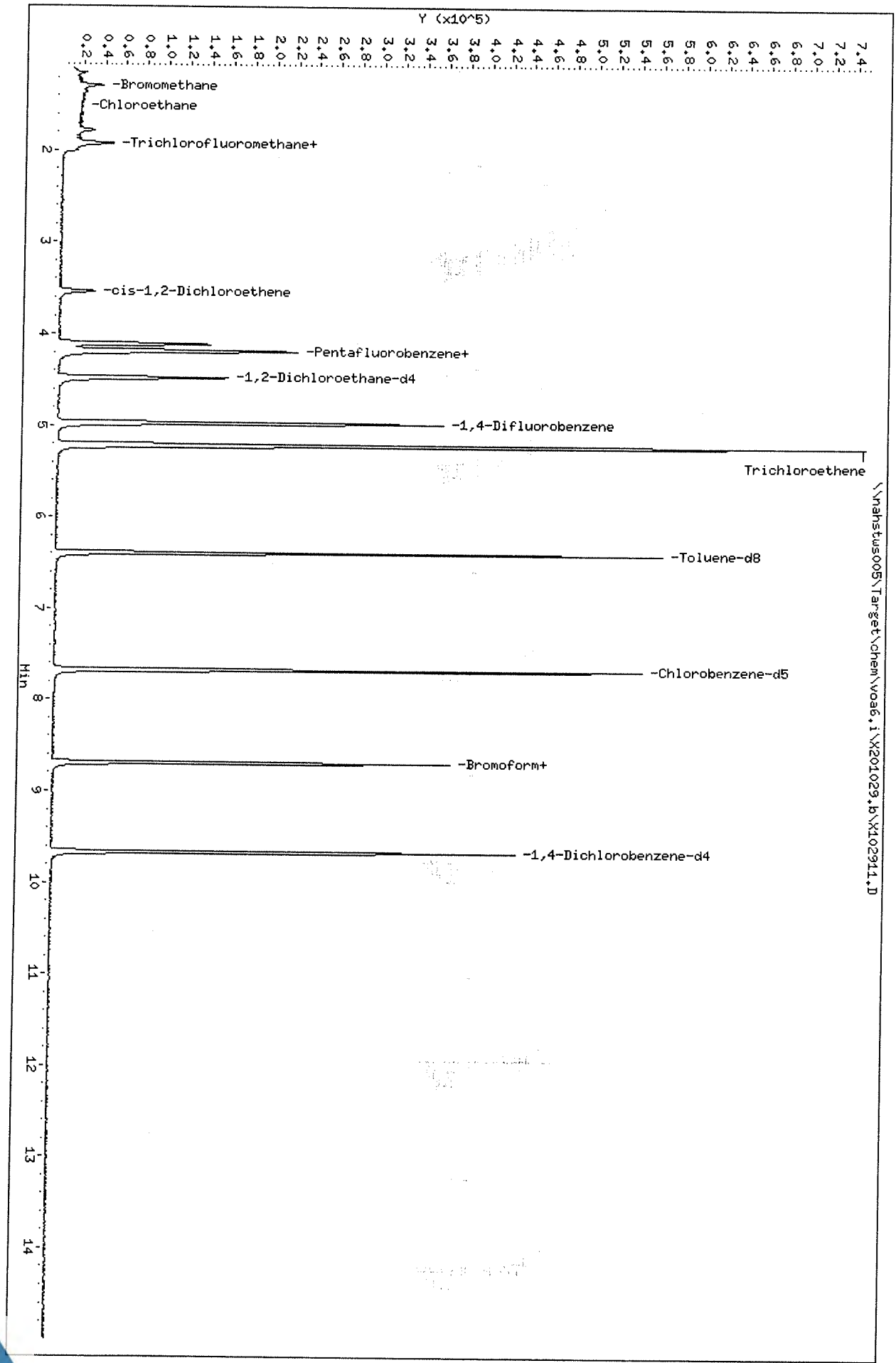
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	157232	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	272185	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	232908	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	87763	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	115531	41.9762	41.97
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	97148	43.8568	43.85
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	93116	43.0198	43.01
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	314740	47.9871	47.98
11 1,1-Dichloroethene	96	1.919	1.926	(0.458)	2437	0.63638	0.63(a)
27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	14611	5.93839	5.93
38 Trichloroethene	130	5.214	5.214	(1.049)	209506	117.027	117.02
5 Vinyl Chloride	62	1.145	1.145	(0.273)	6837	1.41443	1.41(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6,i\X201029,b\X102911.D
Date : 29-OCT-2020 14:39
Client ID: HS20101089-02
Sample Info: HS20101089-02;HS20101089-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D

Date : 29-OCT-2020 14:39

Client ID: HS20101089-02

Instrument: voa6.i

Sample Info: HS20101089-02;HS20101089-02;;;

Purge Volume: 5.0

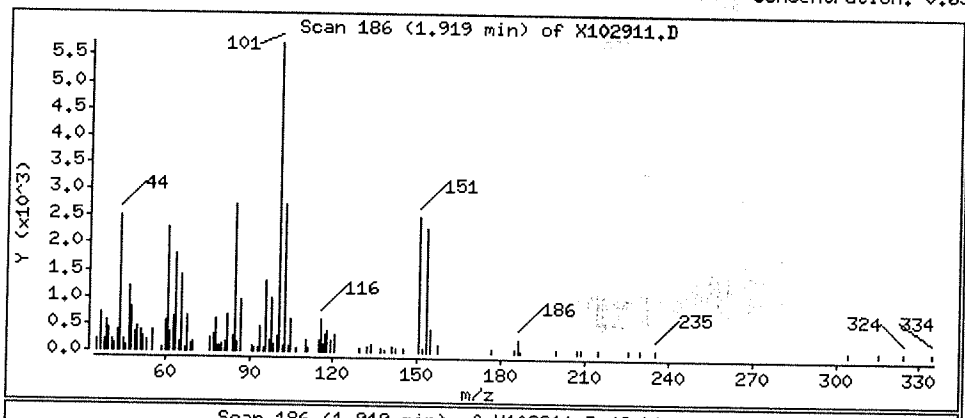
Operator: PC

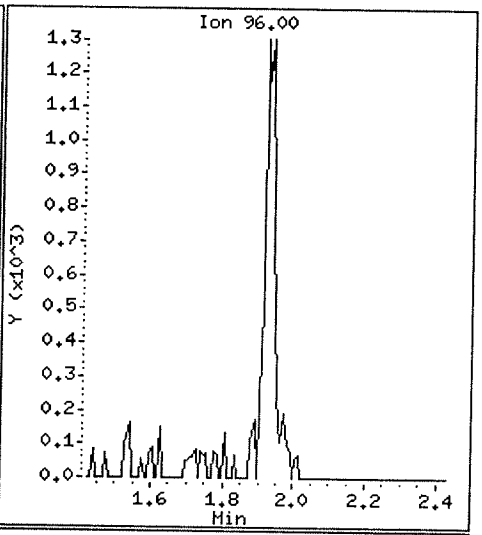
Column phase: DB624

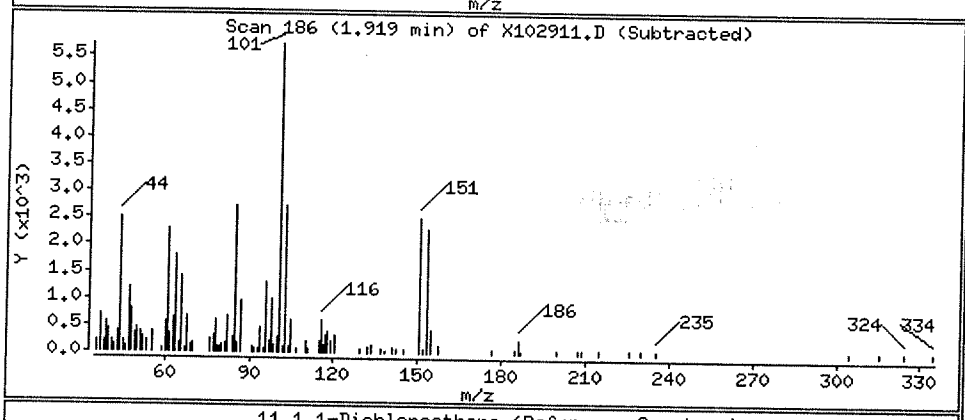
Column diameter: 0.18

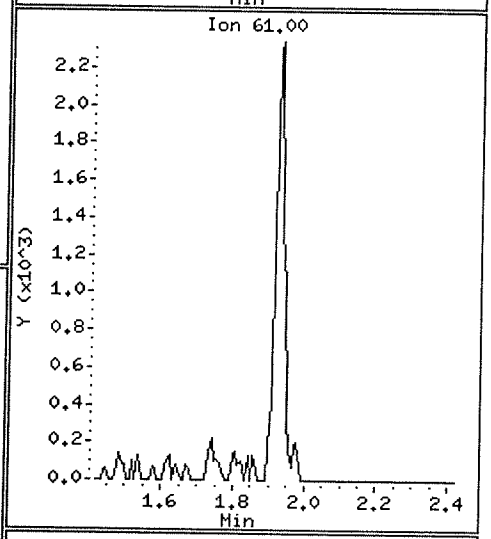
11 1,1-Dichloroethene

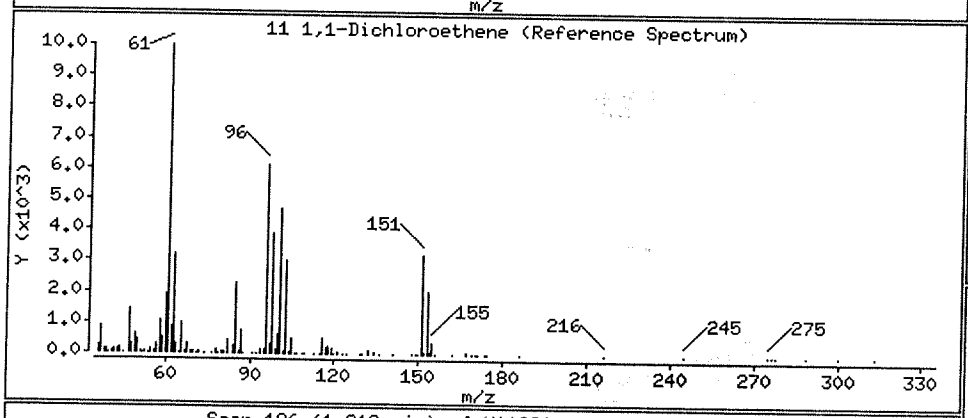
Concentration: 0.63 ug/l

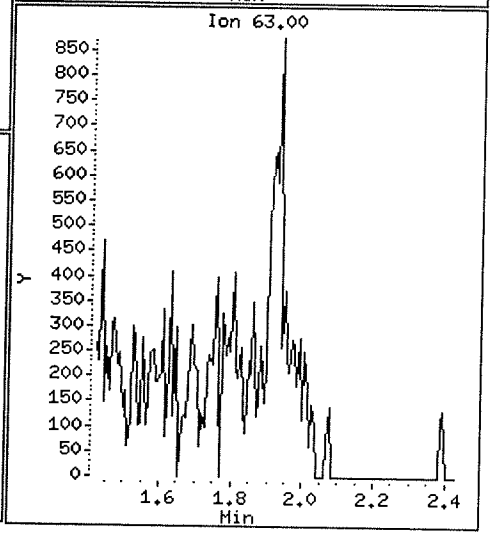


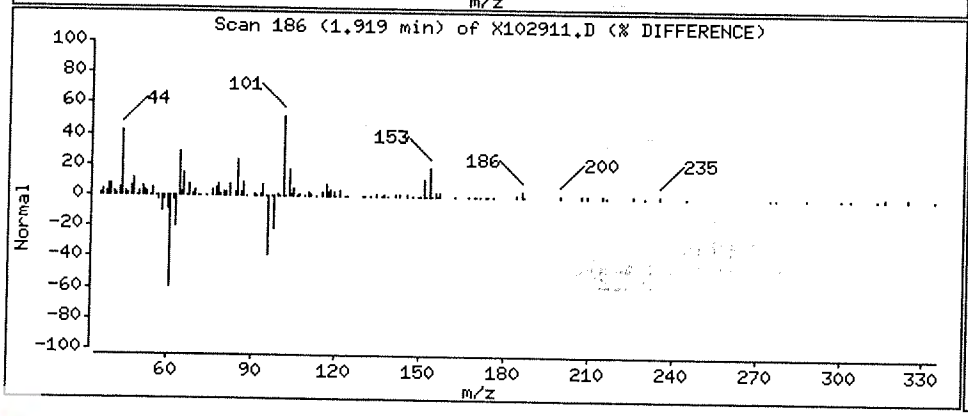












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D

Date : 29-OCT-2020 14:39

Client ID: HS20101089-02

Instrument: voa6.i

Sample Info: HS20101089-02;HS20101089-02;;;

Purge Volume: 5.0

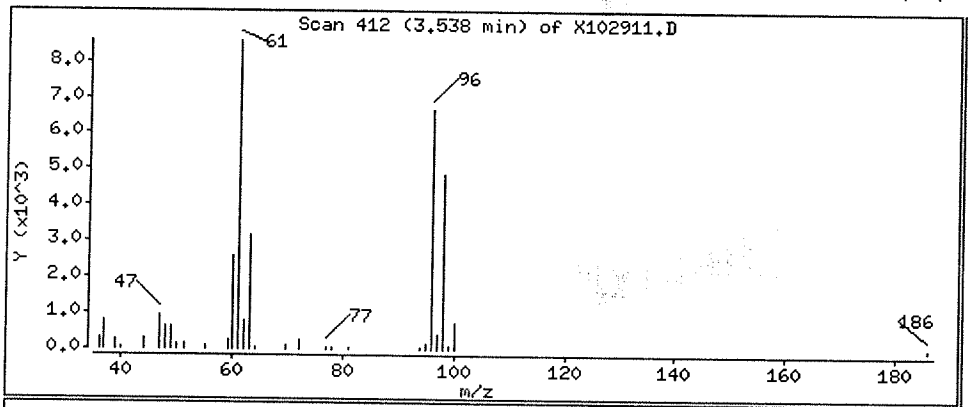
Operator: PC

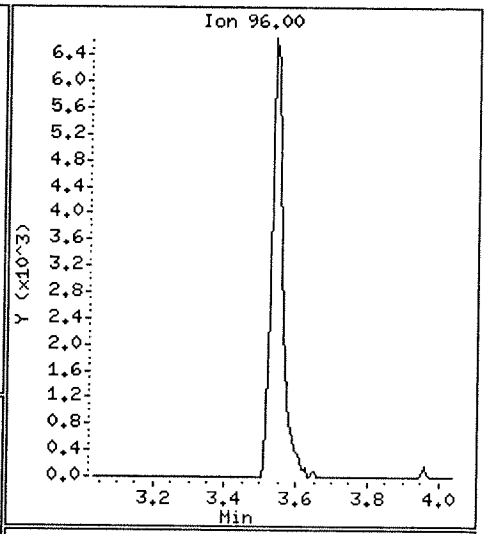
Column phase: DB624

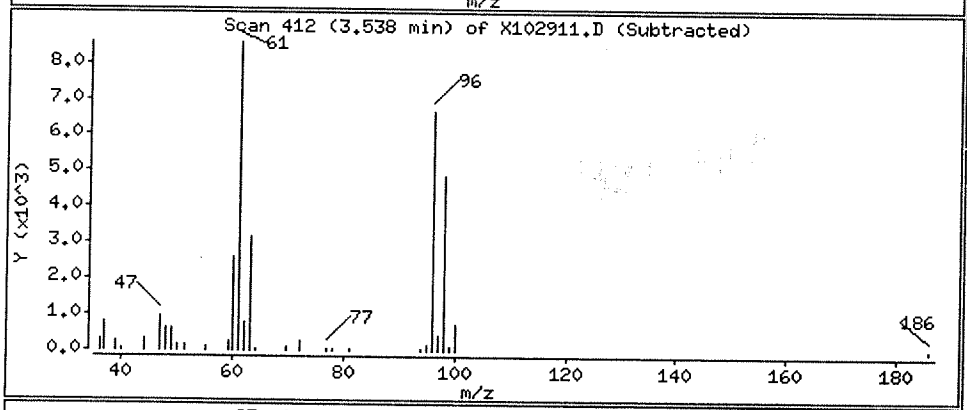
Column diameter: 0.18

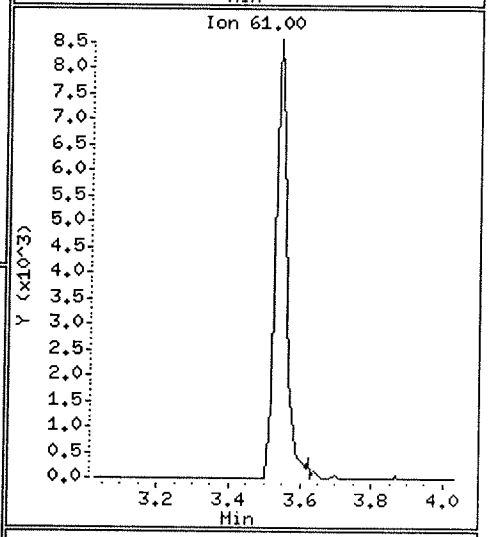
27 cis-1,2-Dichloroethene

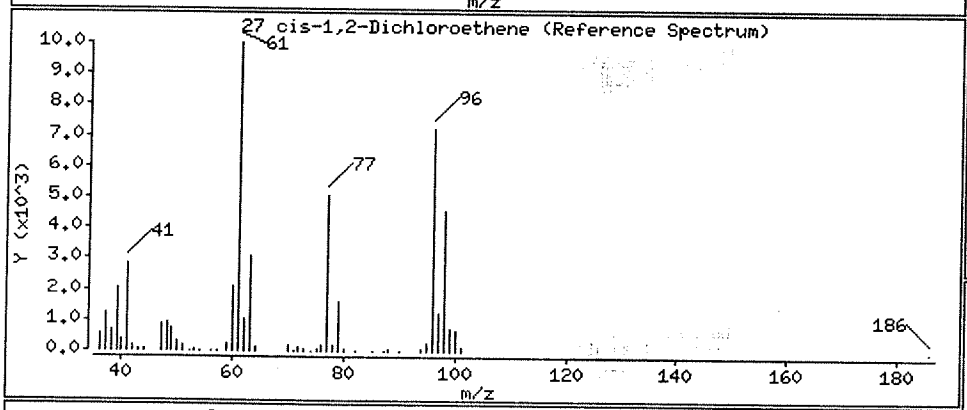
Concentration: 5.93 ug/l

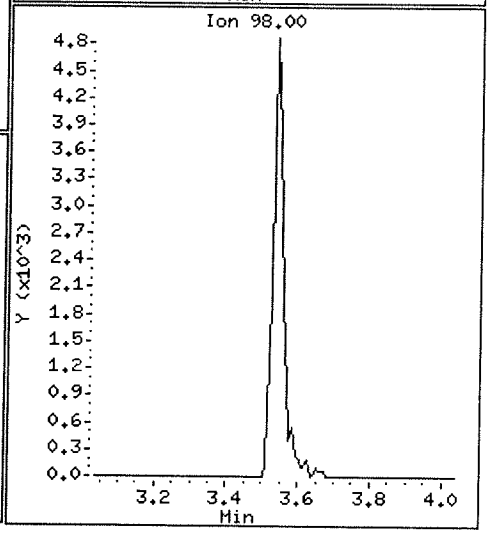


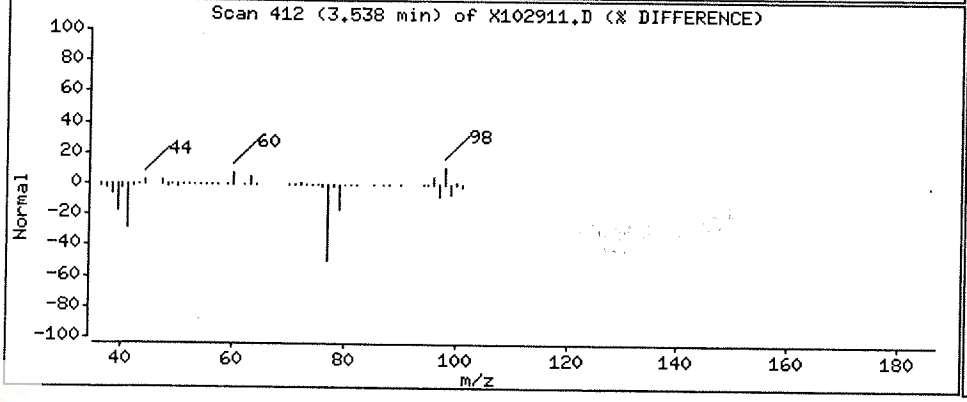












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D

Date : 29-OCT-2020 14:39

Client ID: HS20101089-02

Instrument: voa6.i

Sample Info: HS20101089-02;HS20101089-02;;;

Purge Volume: 5.0

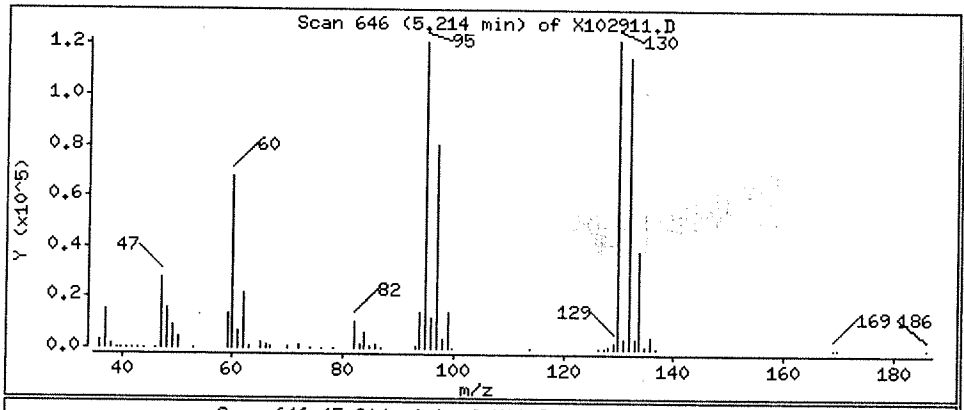
Operator: PC

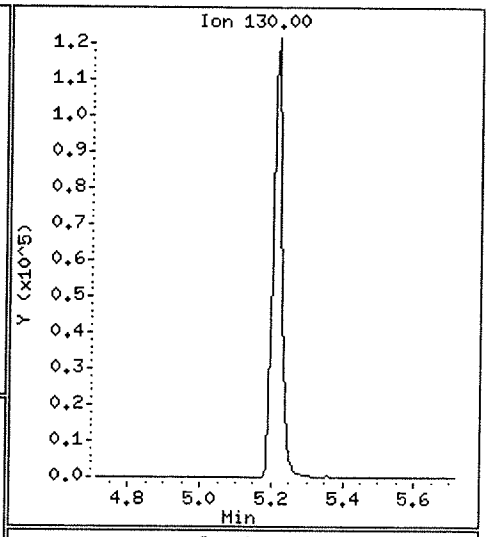
Column phase: DB624

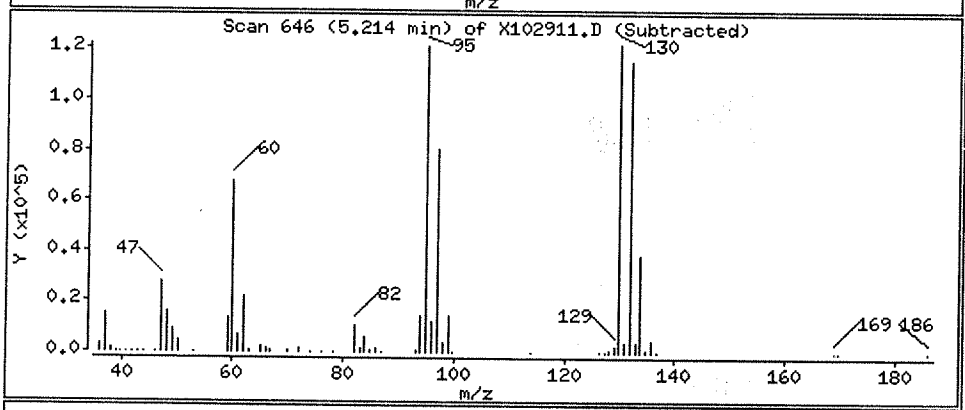
Column diameter: 0.18

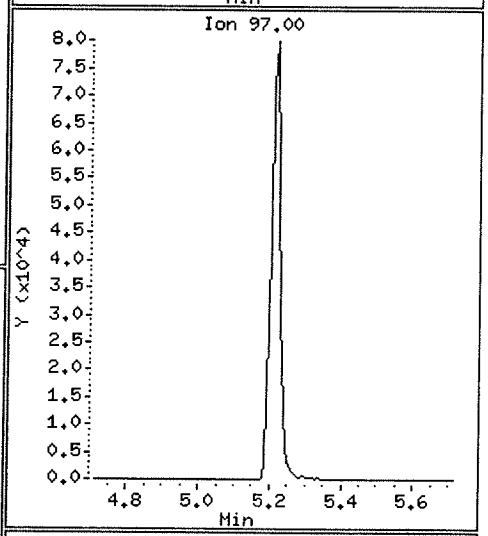
38 Trichloroethene

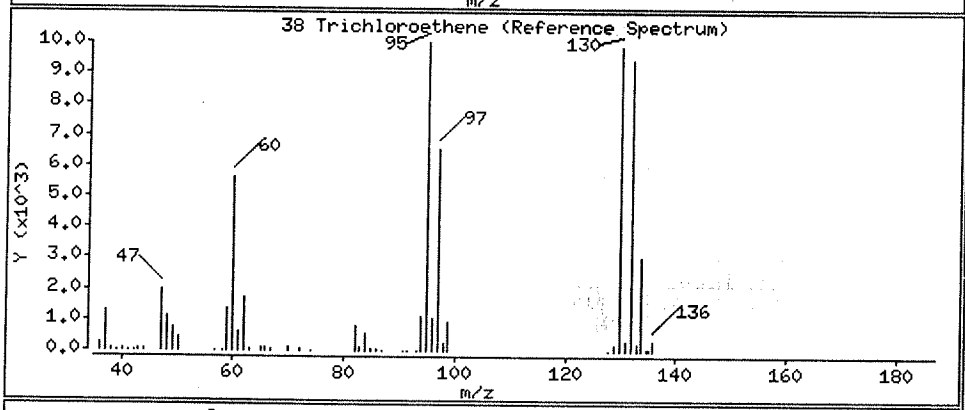
Concentration: 117.02 ug/l

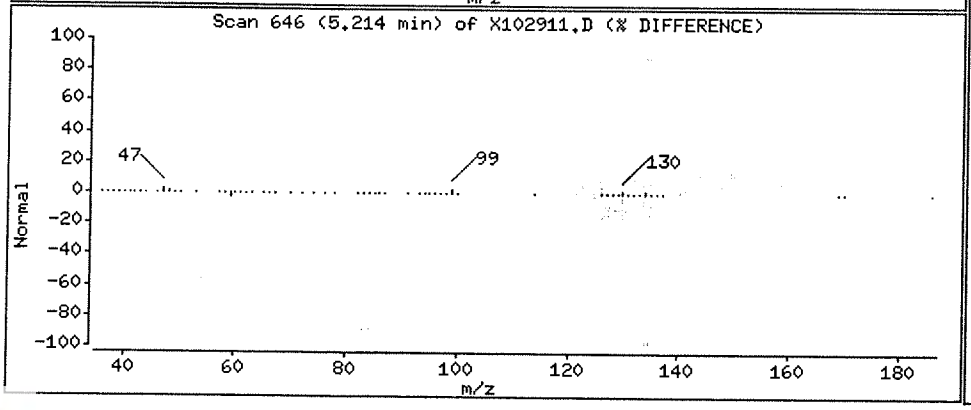


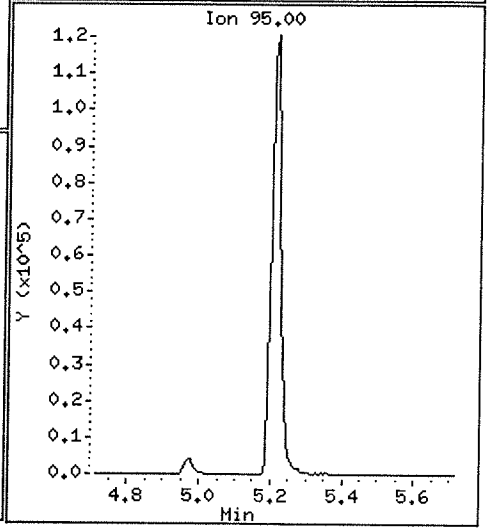












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102911.D

Date : 29-OCT-2020 14:39

Client ID: HS20101089-02

Instrument: voa6.i

Sample Info: HS20101089-02;HS20101089-02;;;

Purge Volume: 5.0

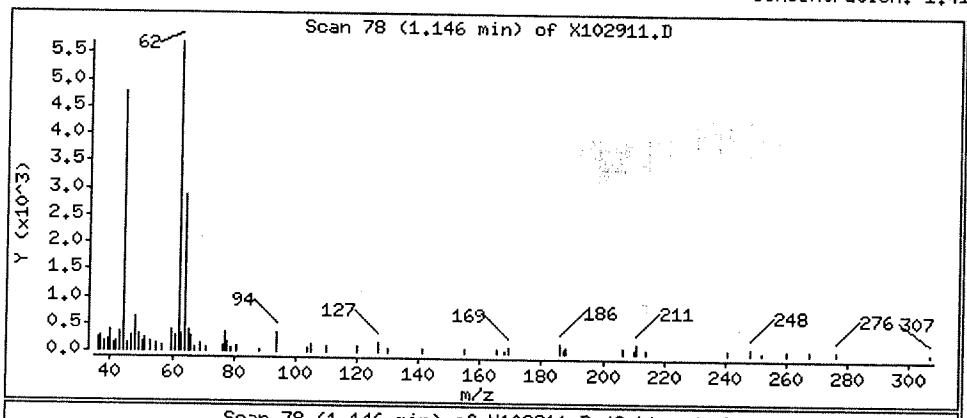
Operator: PC

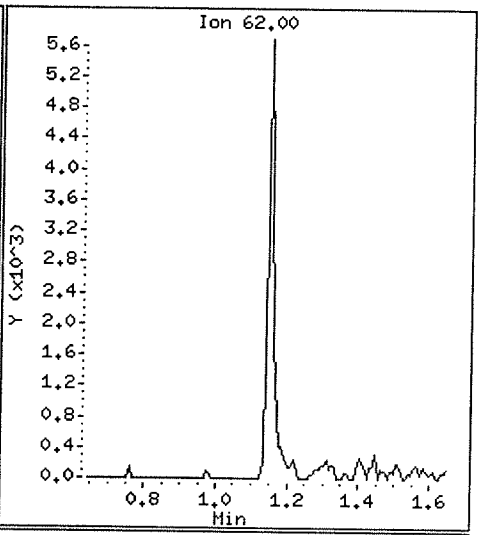
Column phase: DB624

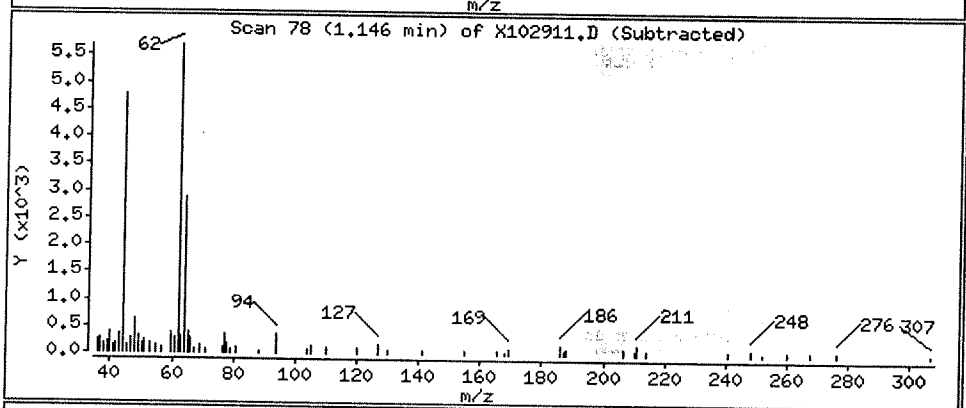
Column diameter: 0.18

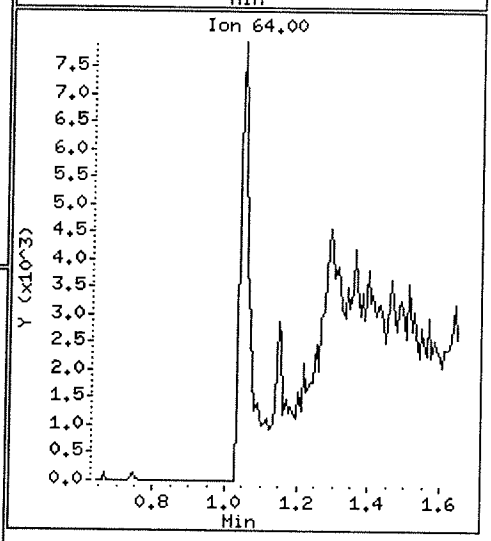
5 Vinyl Chloride

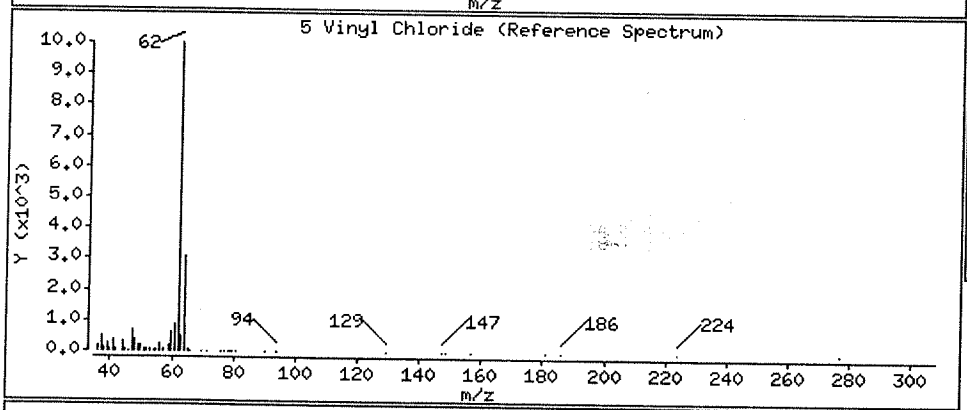
Concentration: 1.41 ug/l

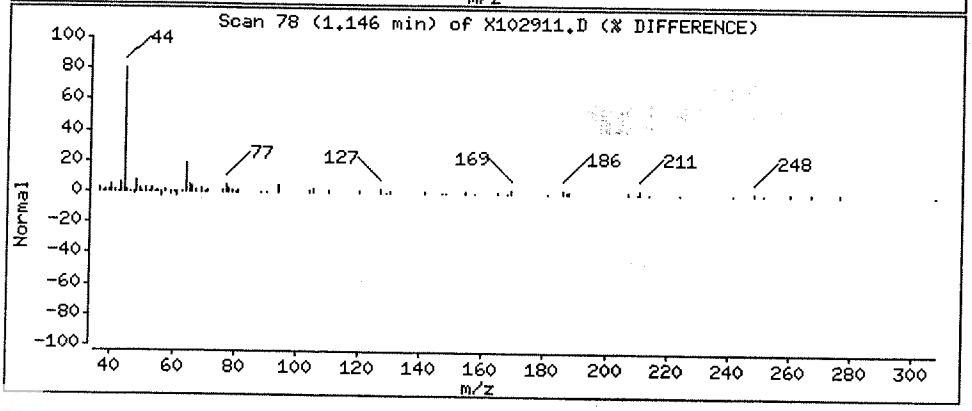












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D
Lab Smp Id: HS20101089-03 Client Smp ID: HS20101089-03
Inj Date : 29-OCT-2020 15:00
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-03;HS20101089-03;;;
Misc Info : HS18090001;WATER;0;10;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 12
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

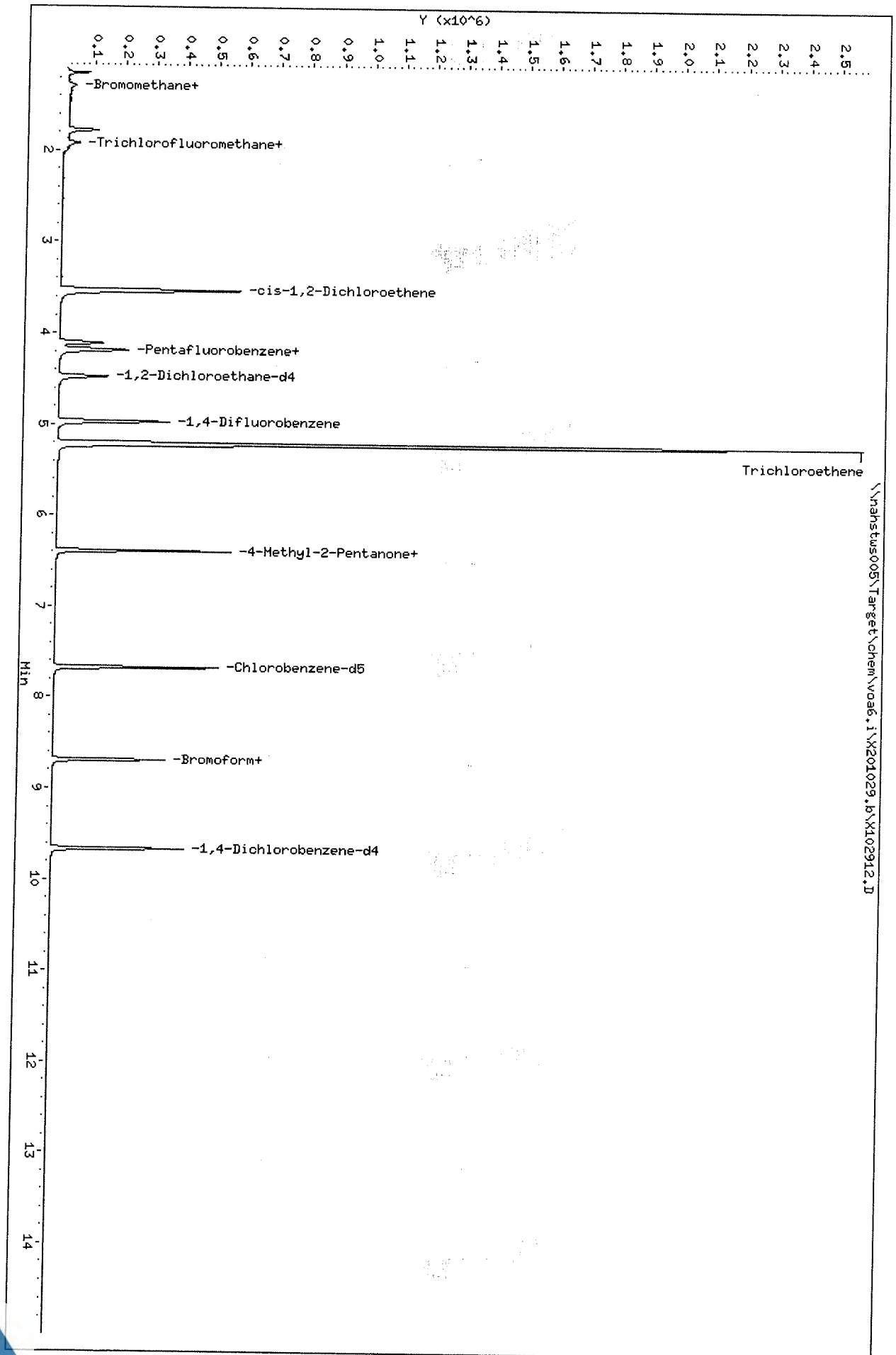
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	160314	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	270393	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	226402	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	85740	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	115723	41.2382	41.23
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	95812	44.4676	44.46
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	93041	42.1588	42.15
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	307768	48.2623	48.26
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	7616	1.95055	19.50(a)
27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	283123	112.858	1128.58
38 Trichloroethene	130	5.214	5.214	(1.049)	686526	386.025	3860.24(A)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	49148	9.97218	99.72

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstus005\Target\chem\voa6.i\X201029.b\X102912.D
Date : 29-OCT-2020 15:00
Client ID: HS20101089-03
Sample Info: HS20101089-03;HS20101089-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D

Date : 29-OCT-2020 15:00

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

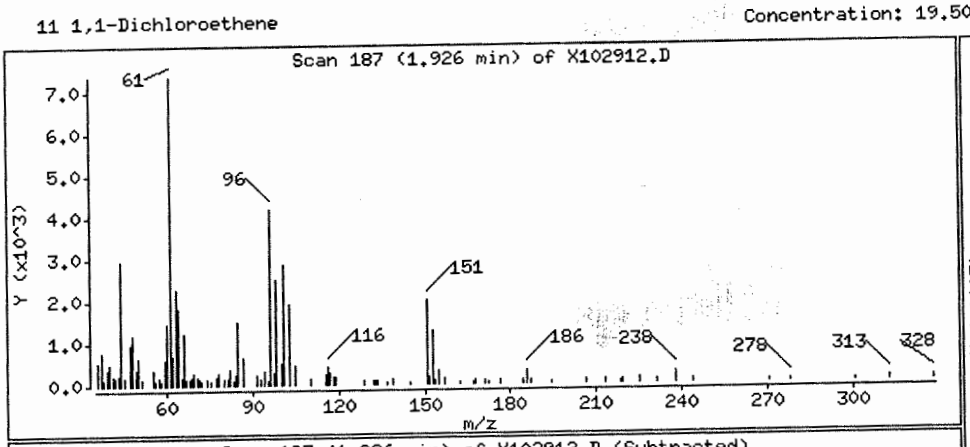
Operator: PC

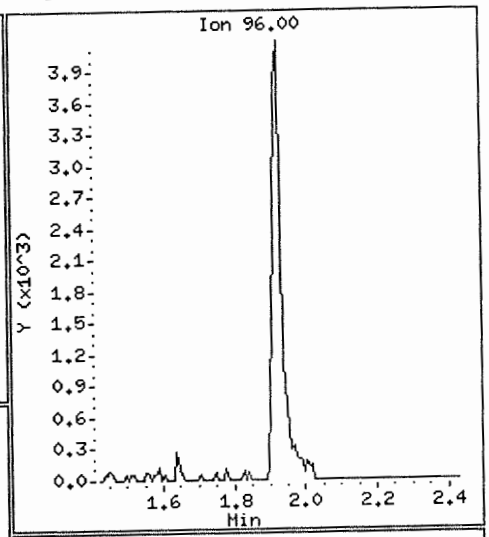
Column phase: DB624

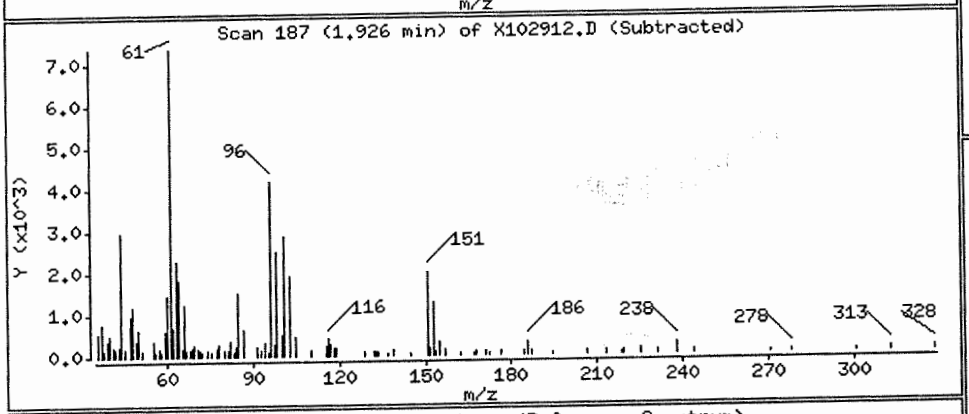
Column diameter: 0.18

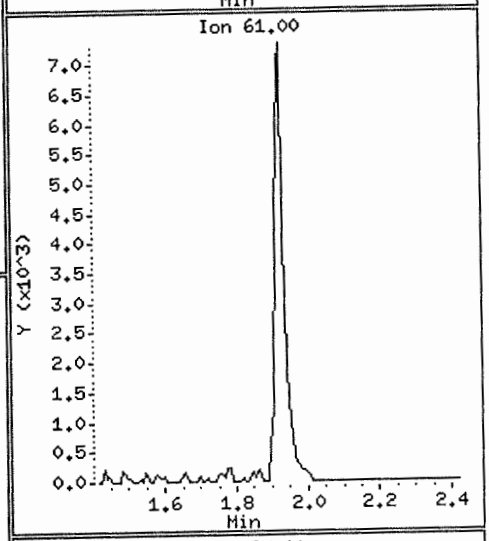
11 1,1-Dichloroethene

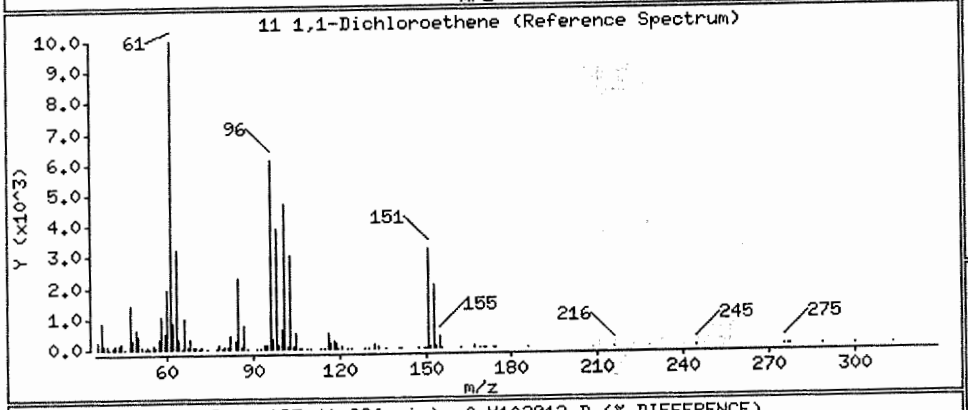
Concentration: 19.50 ug/l

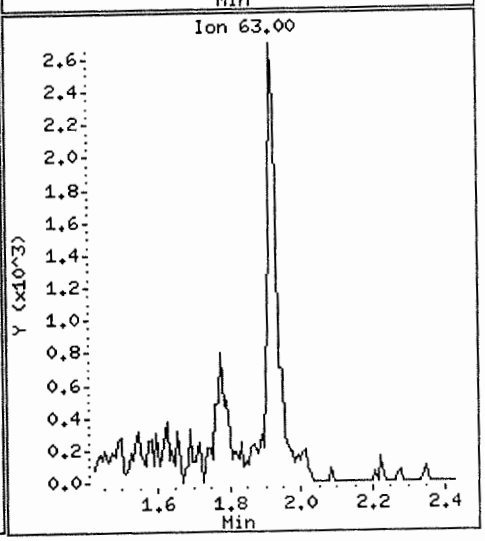


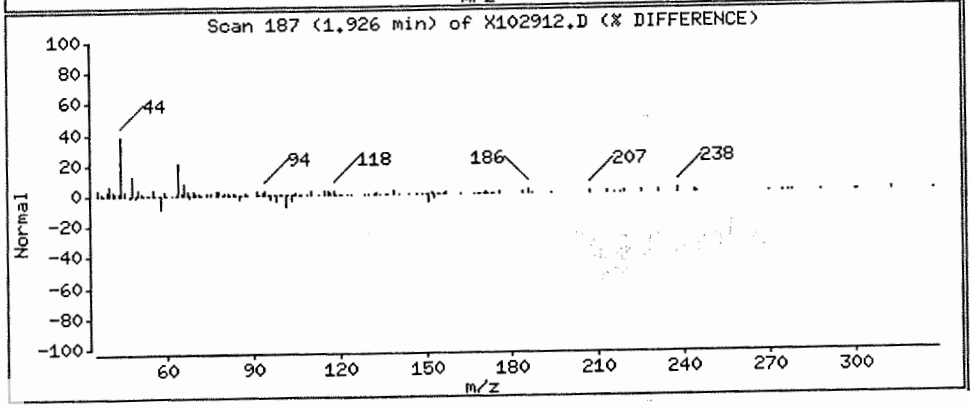












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D

Date : 29-OCT-2020 15:00

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

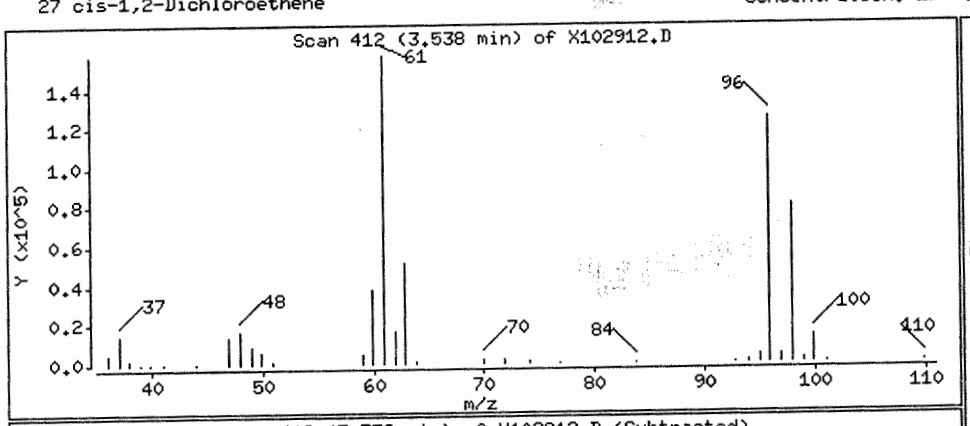
Operator: PC

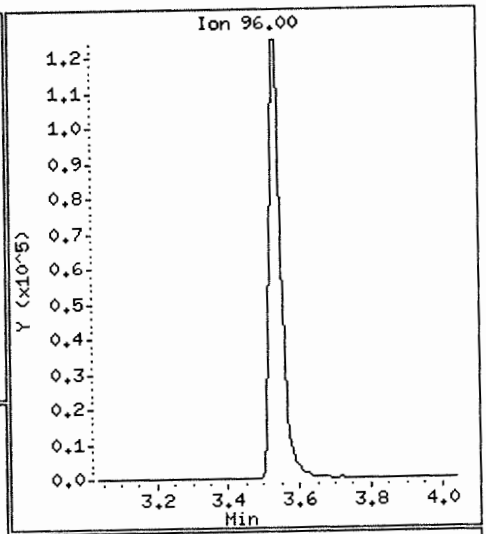
Column phase: DB624

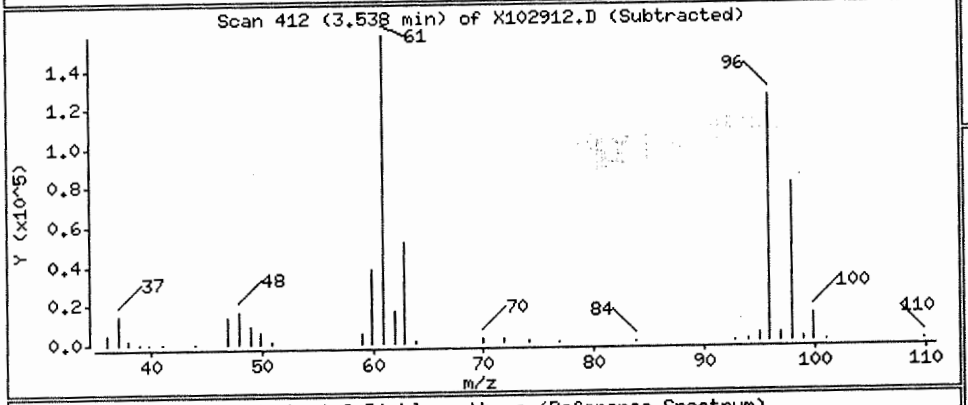
Column diameter: 0.18

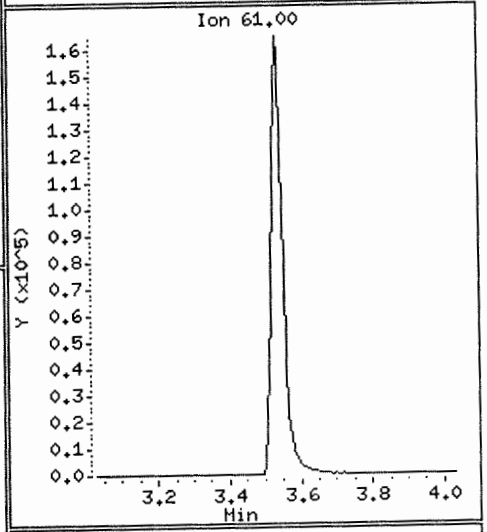
27 cis-1,2-Dichloroethene

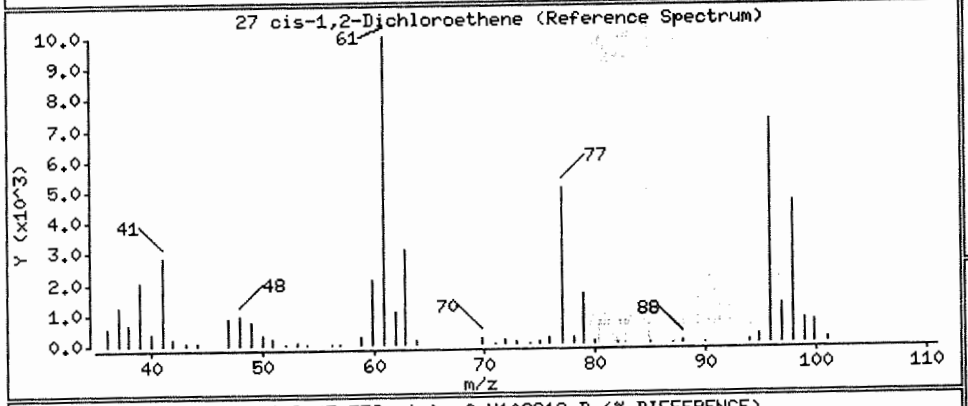
Concentration: 1128.58 ug/l

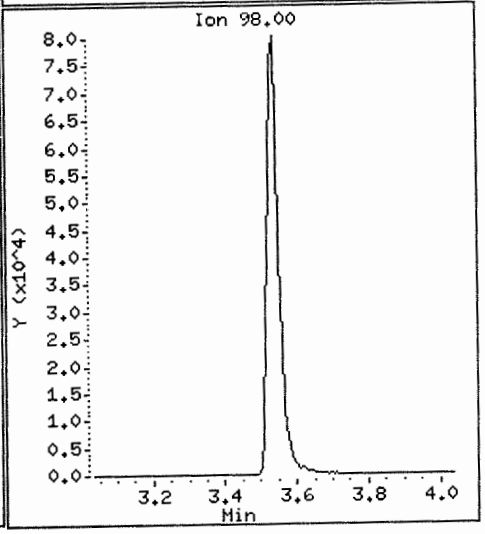


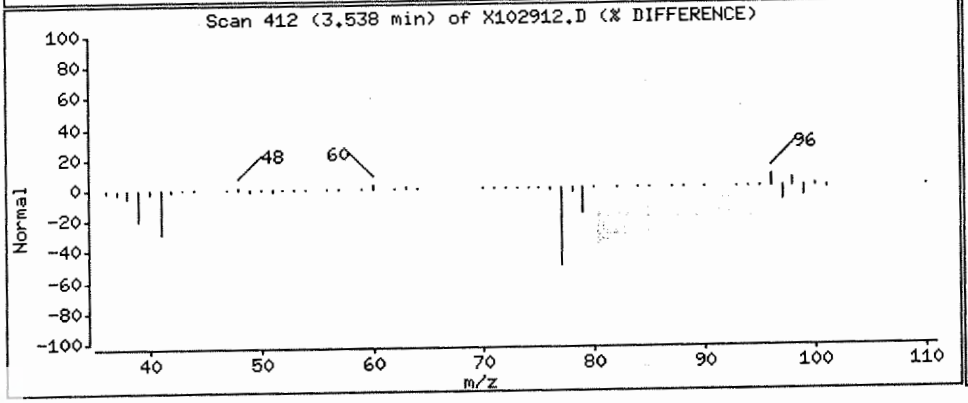












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D

Date : 29-OCT-2020 15:00

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

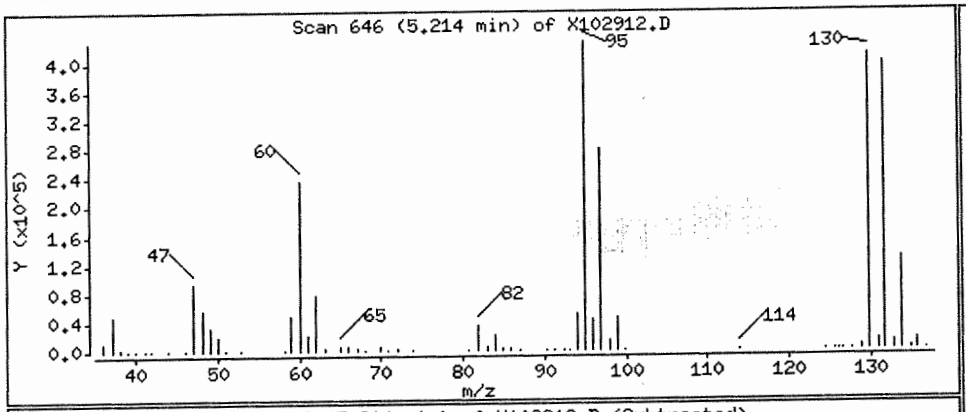
Operator: PC

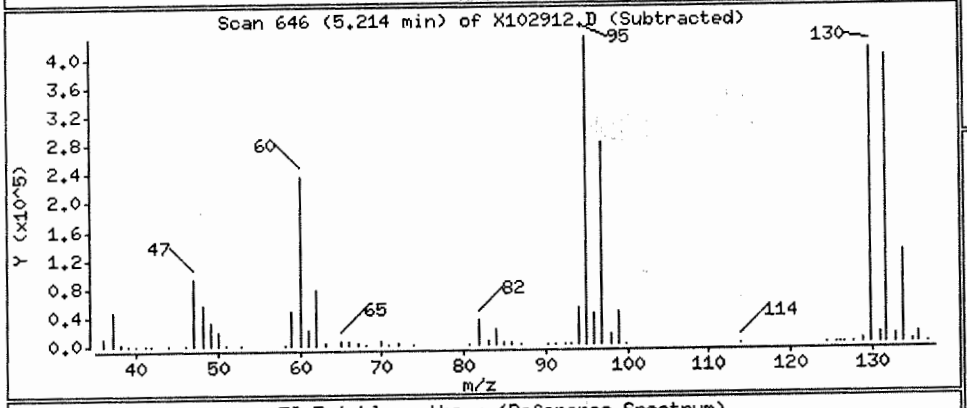
Column phase: DB624

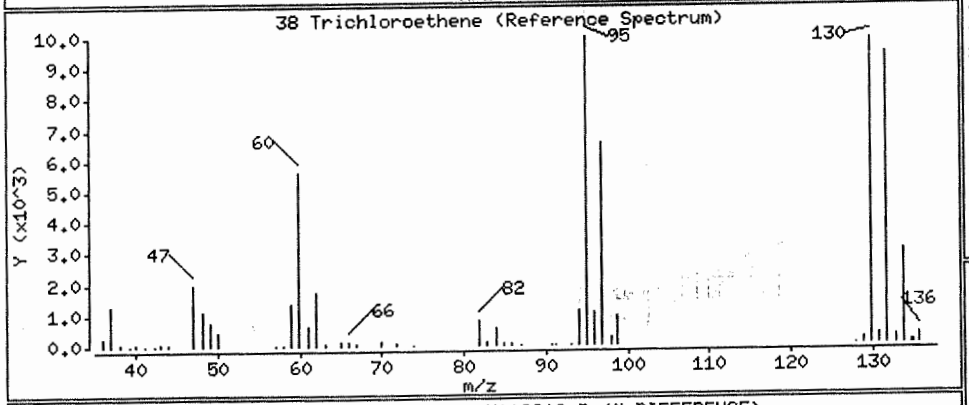
Column diameter: 0.18

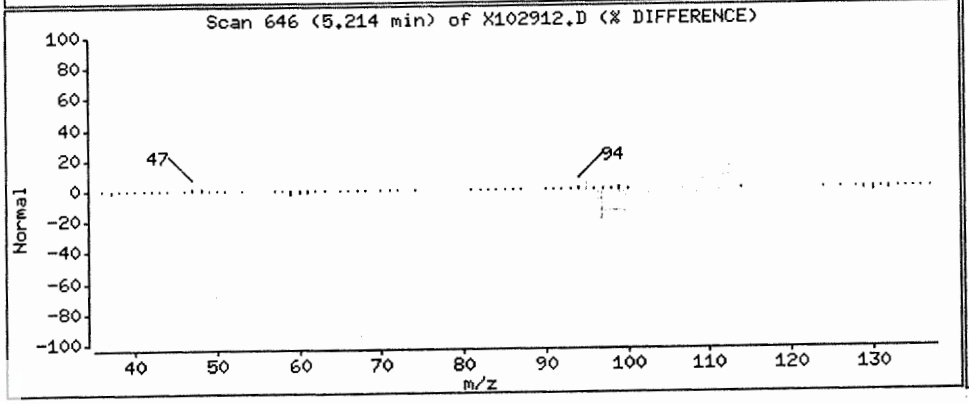
38 Trichloroethene

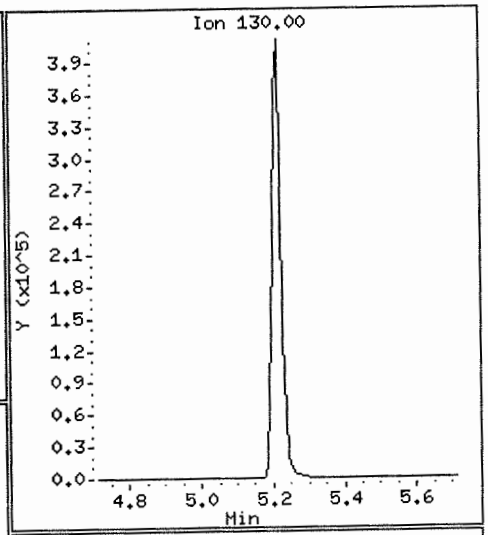
Concentration: 3860.24 ug/l

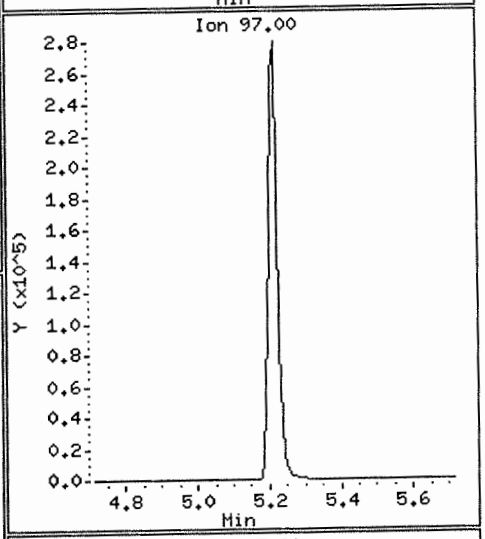


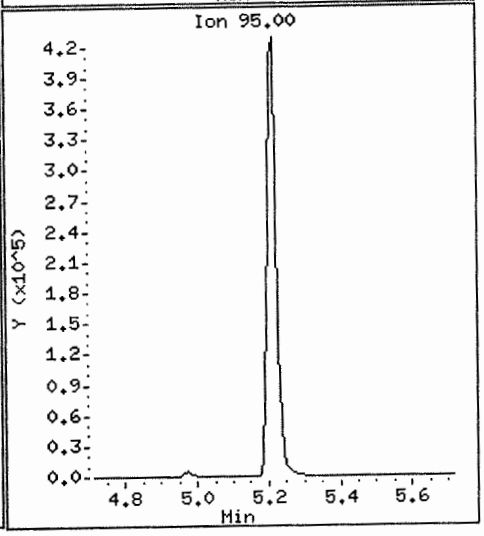












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102912.D

Date : 29-OCT-2020 15:00

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Operator: PC

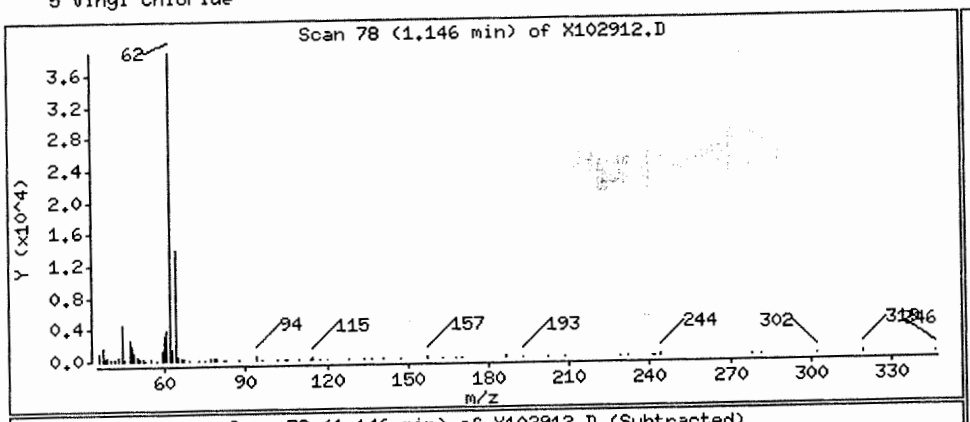
Purge Volume: 5.0

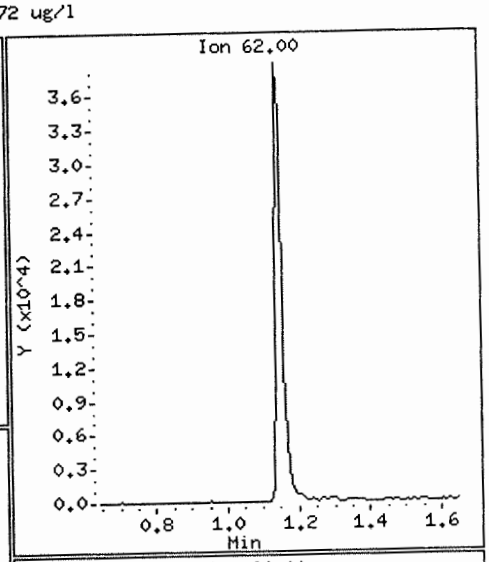
Column phase: DB624

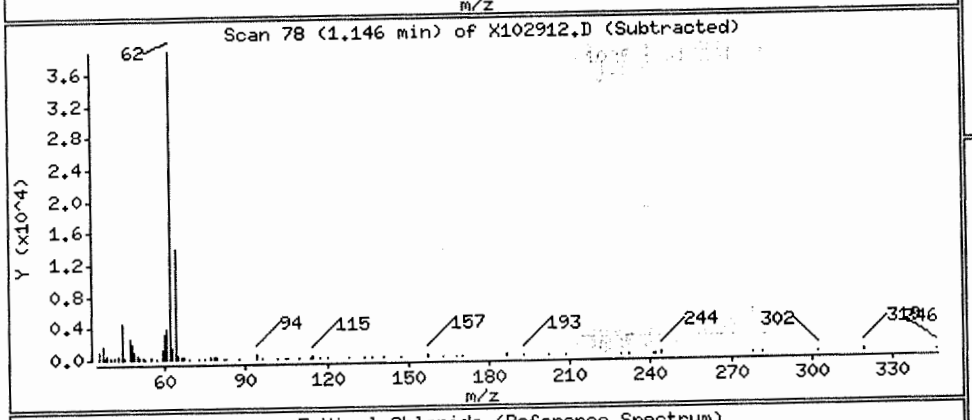
Column diameter: 0.18

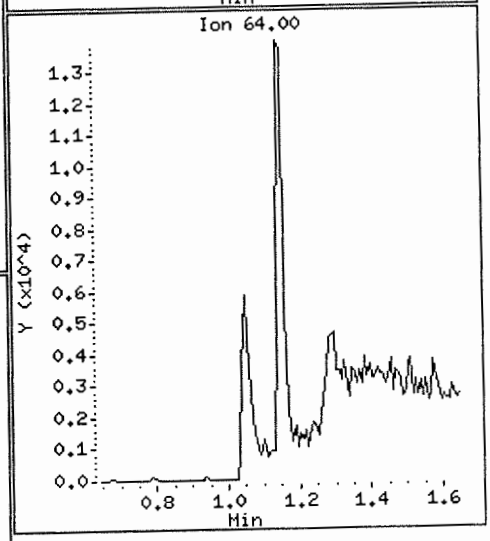
5 Vinyl Chloride

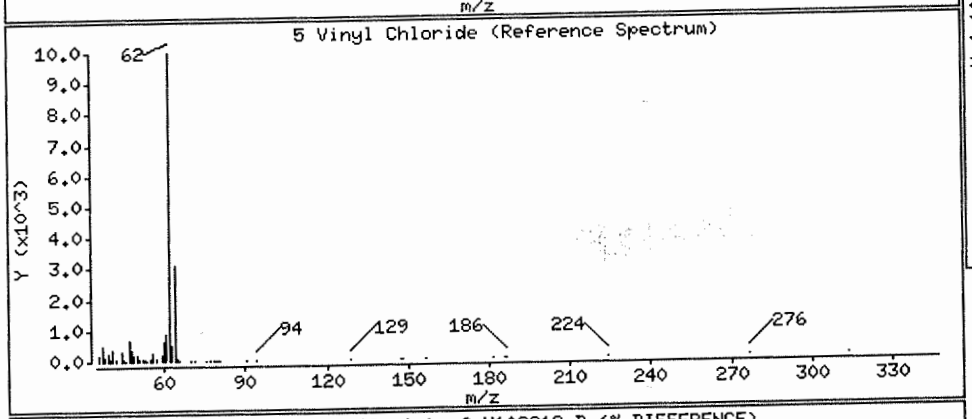
Concentration: 99.72 ug/l

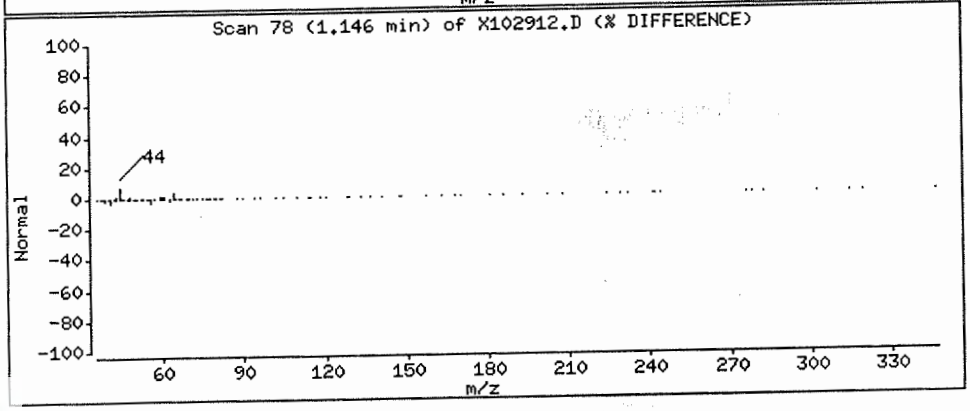












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102914.D Page 1
Report Date: 30-Nov-2020 14:34

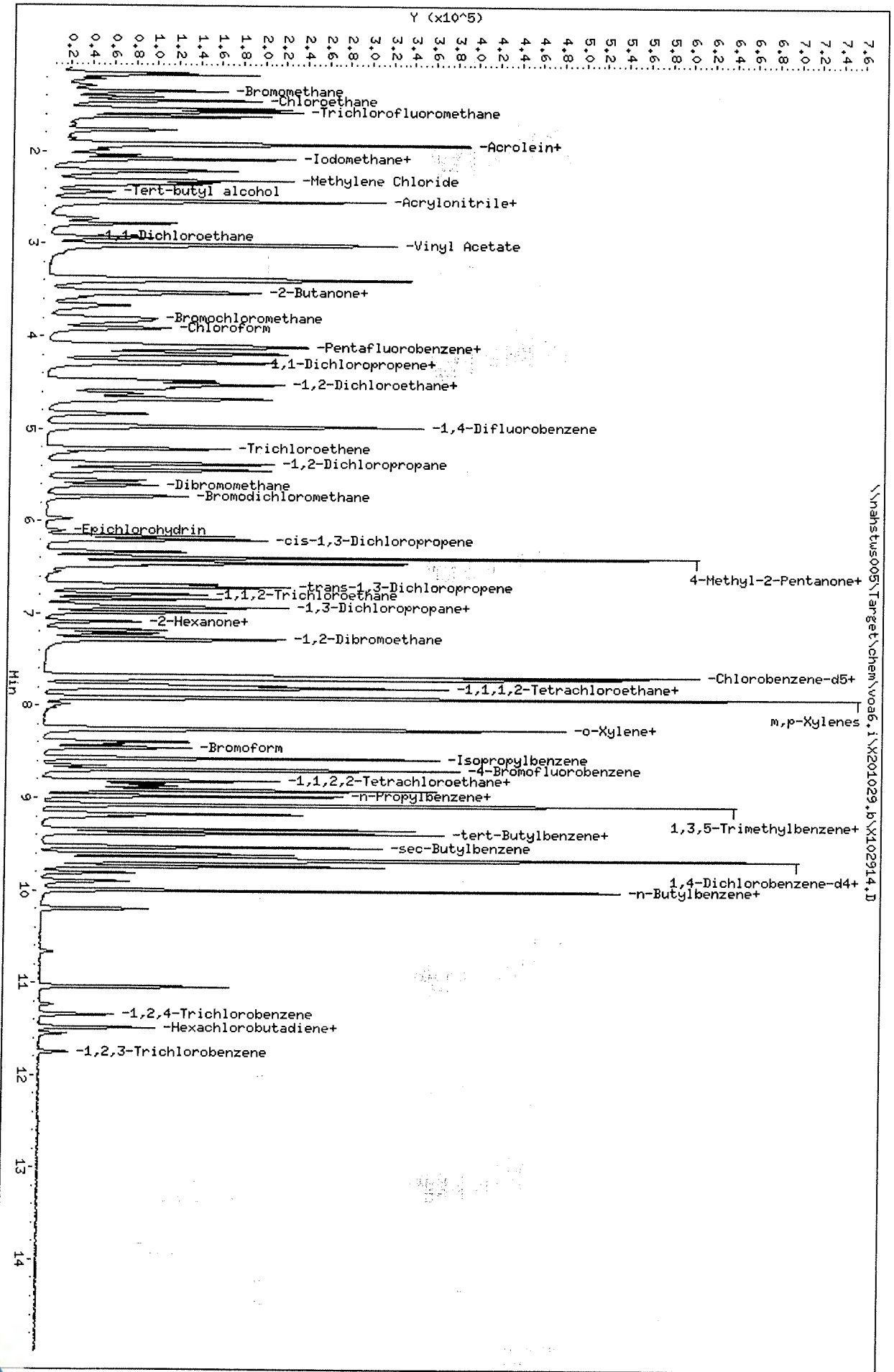
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102914.D
Lab Smp Id: HS20101248-06MS Client Smp ID: HS20101248-06MS
Inj Date : 29-OCT-2020 15:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20101248-06MS;HS20101248-06MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 14 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	155347	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	265768	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	230229	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	96086	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	112994	41.5529	41.55
$	69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	96337	43.9904	43.99
$	30 Dibromofluoromethane	113	4.103	4.110	(0.979)	95048	44.4453	44.44
$	48 Toluene-d8	98	6.388	6.388	(0.833)	319858	49.2865	49.28
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	34681	23.1579	23.15
	11 1,1-Dichloroethene	96	1.919	1.926	(0.458)	66644	17.6141	17.61
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	72105	25.1203	25.12
	27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	52663	21.6637	21.66
	17 Methylene Chloride	84	2.313	2.313	(0.552)	47674	19.4205	19.42
	38 Trichloroethene	130	5.214	5.214	(1.049)	46824	26.7867	26.78
	5 Vinyl Chloride	62	1.145	1.145	(0.273)	82693	17.3150	17.31



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102914.D
Date : 29-OCT-2020 15:42
Client ID: HS20101248-06MS
Sample Info: HS20101248-06MS;HS20101248-06MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102915.D Page 1
Report Date: 30-Nov-2020 14:34

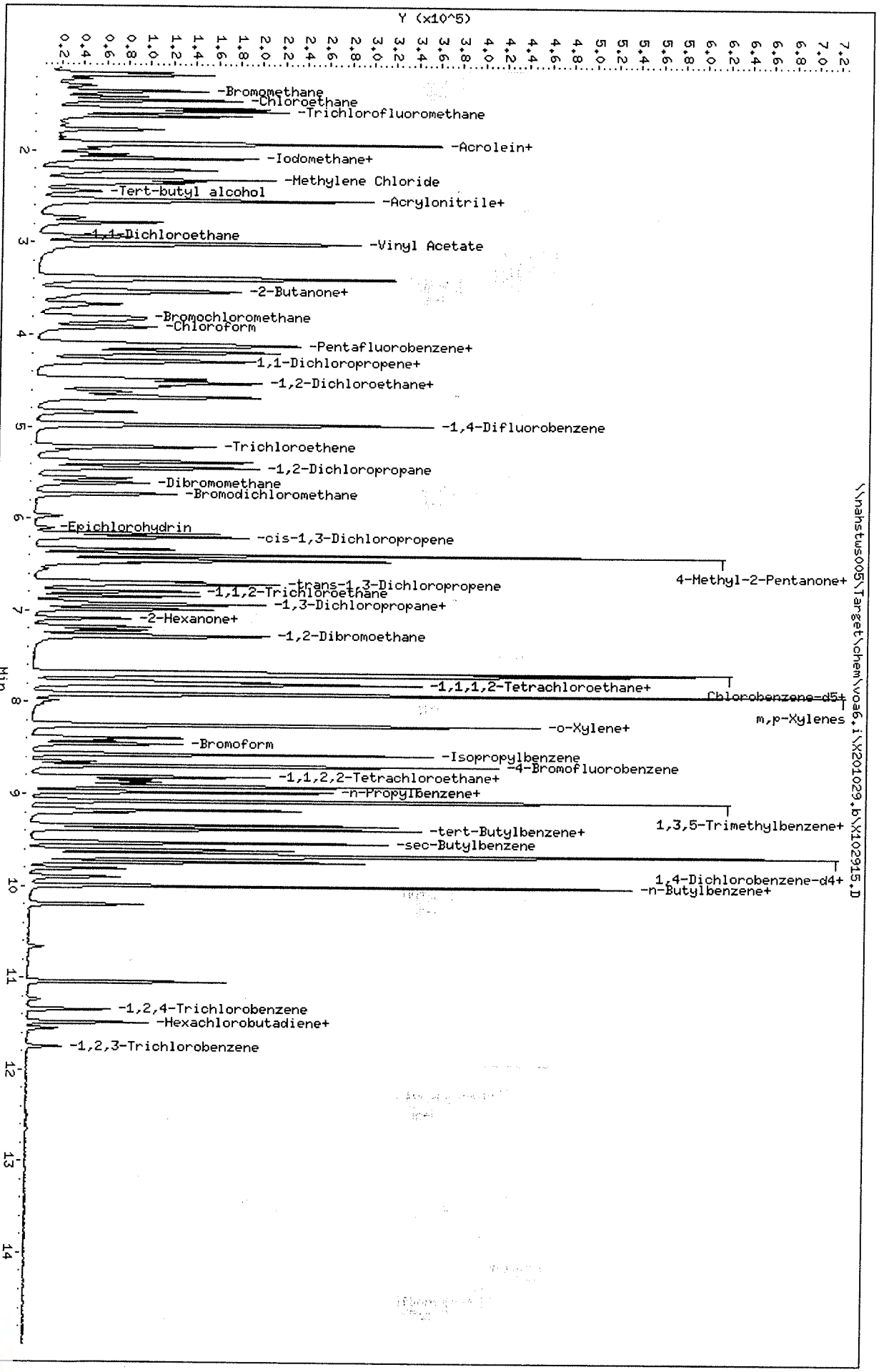
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102915.D
Lab Smp Id: HS20101248-06MSD Client Smp ID: HS20101248-06MSD
Inj Date : 29-OCT-2020 16:03
Operator : PC Inst ID: voa6.i
Smp Info : HS20101248-06MSD;HS20101248-06MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 14 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	153890	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	265753	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	246364	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	98989	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	110736	41.1085	41.10
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	100272	42.8430	42.84
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	92169	43.5071	43.50
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	321271	46.3677	46.36
53 1,1,2-Trichloroethane	83	6.847	6.840	(0.893)	33513	20.9123	20.91
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	61653	16.4492	16.44
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	69144	24.0901	24.09
27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	47600	19.7663	19.76
17 Methylene Chloride	84	2.313	2.313	(0.552)	45491	18.7067	18.70
38 Trichloroethene	130	5.214	5.214	(1.049)	43888	25.1085	25.10
5 Vinyl Chloride	62	1.145	1.145	(0.273)	79231	16.7471	16.74



Data File: \\nahstws005\Target\chem\voa6,i\X201029,b\X102915,D
Date : 29-OCT-2020 16:03
Client ID: HS20101248-06HSD
Sample Info: HS20101248-06HSD;HS20101248-06HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D
Lab Smp Id: HS20101089-03 Client Smp ID: HS20101089-03
Inj Date : 29-OCT-2020 16:24
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-03;HS20101089-03;;;
Misc Info : HS18090001;WATER;0;100;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 15
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

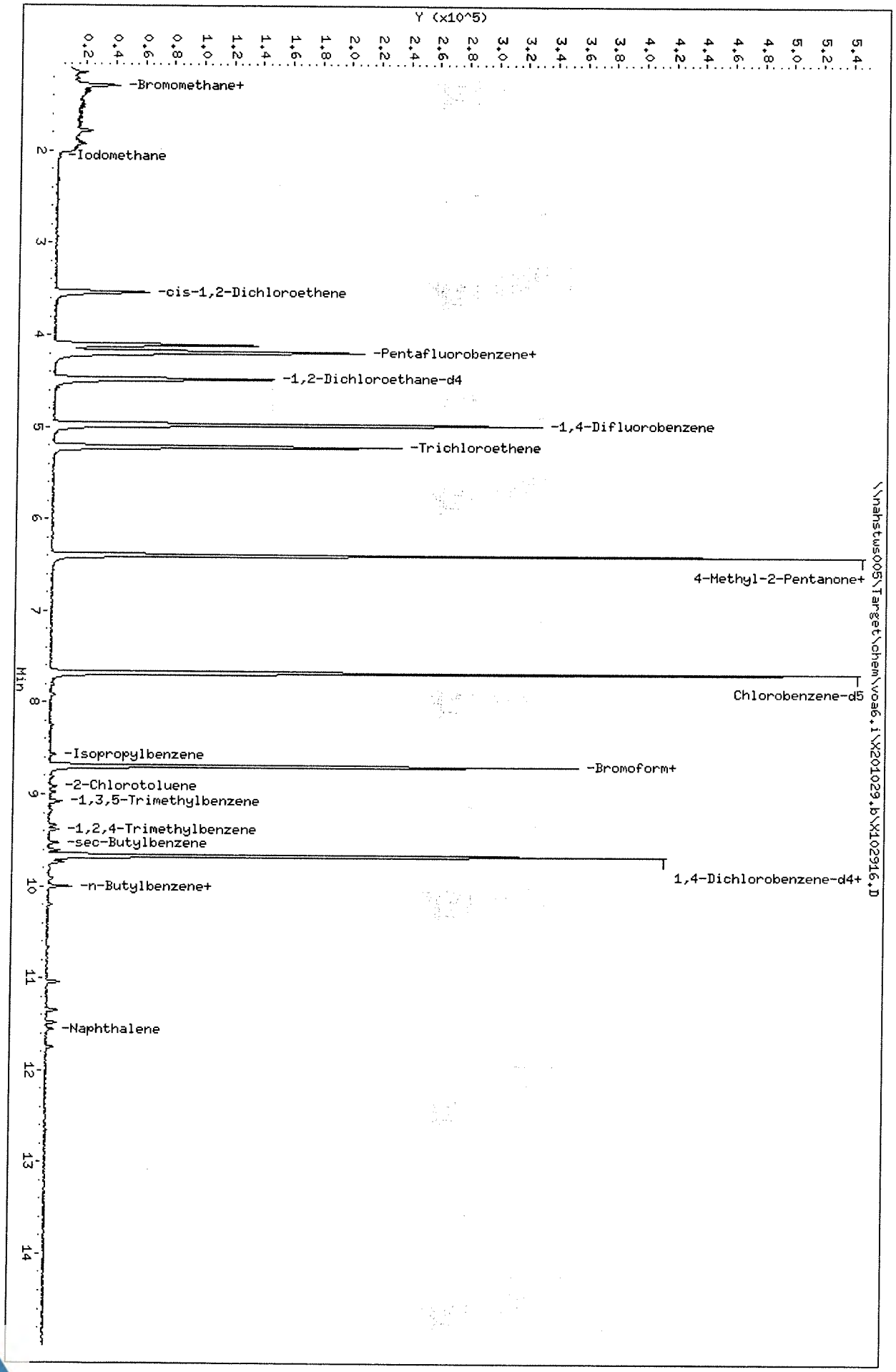
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	100.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150057	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	263105	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	227884	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	83747	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	109589	41.7214	41.72
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	94499	43.6131	43.61
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	89603	43.3762	43.37
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	307789	47.9628	47.96
27 cis-1,2-Dichloroethene	96	3.538	3.537	(0.844)	29214	12.4413	1244.12
38 Trichloroethene	130	5.214	5.214	(1.049)	65804	38.0257	3802.56
5 Vinyl Chloride	62	1.145	1.145	(0.273)	5472	1.18617	118.61(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D
Date : 29-OCT-2020 16:24
Client ID: HS20101089-03
Sample Info: HS20101089-03;HS20101089-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D

Date : 29-OCT-2020 16:24

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

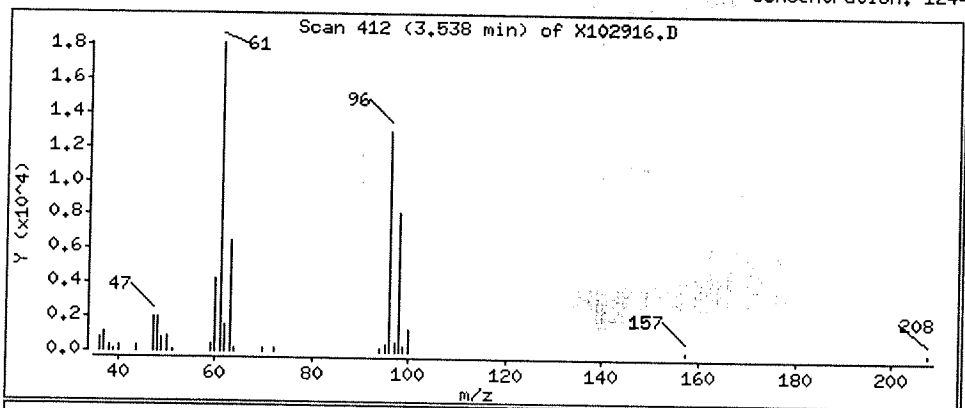
Operator: PC

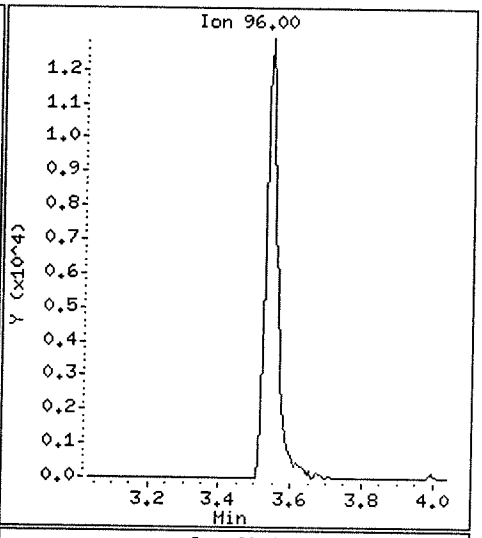
Column phase: DB624

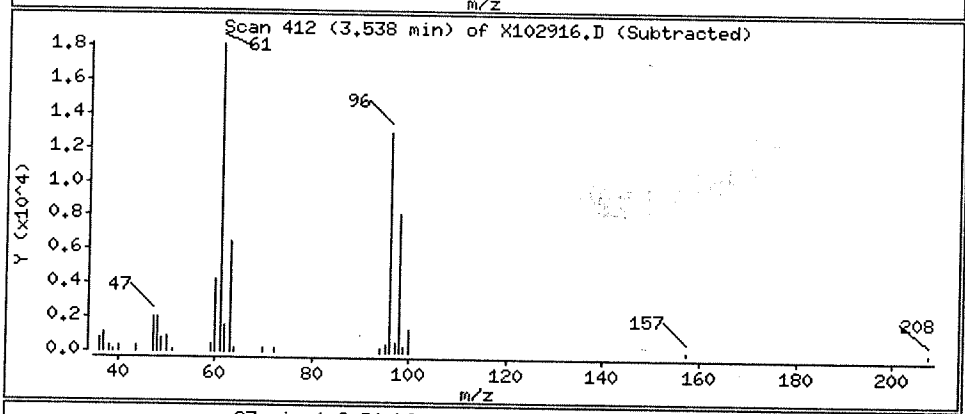
Column diameter: 0.18

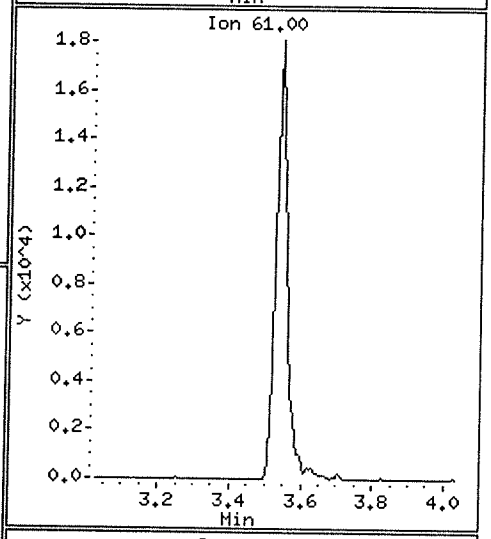
27 cis-1,2-Dichloroethene

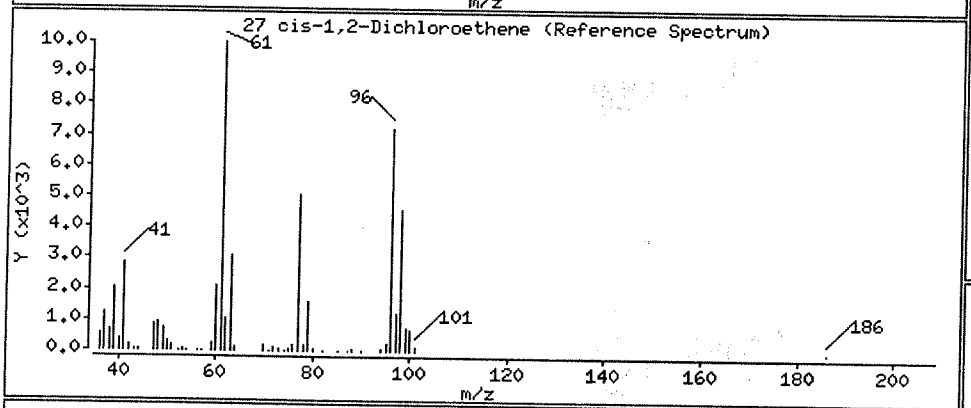
Concentration: 1244.12 ug/l

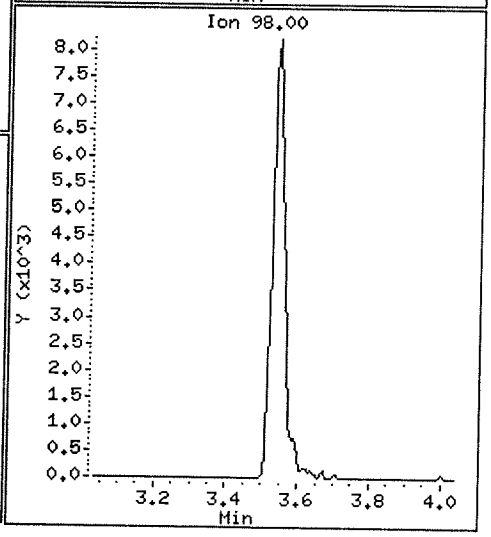


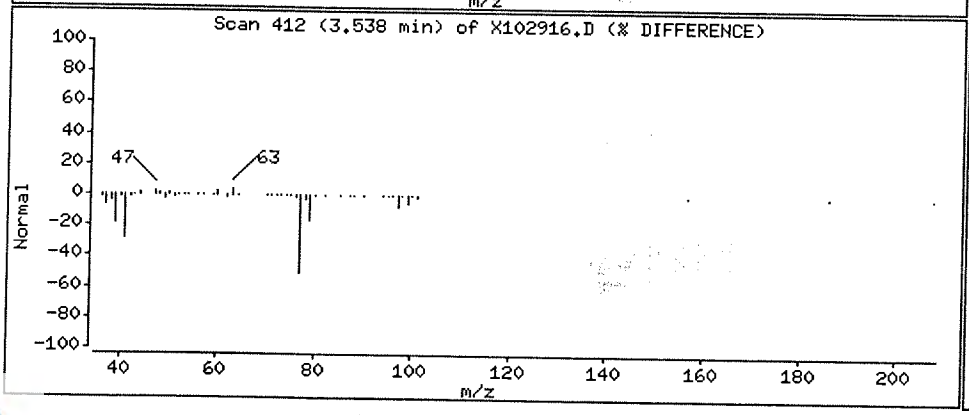












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D

Date : 29-OCT-2020 16:24

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

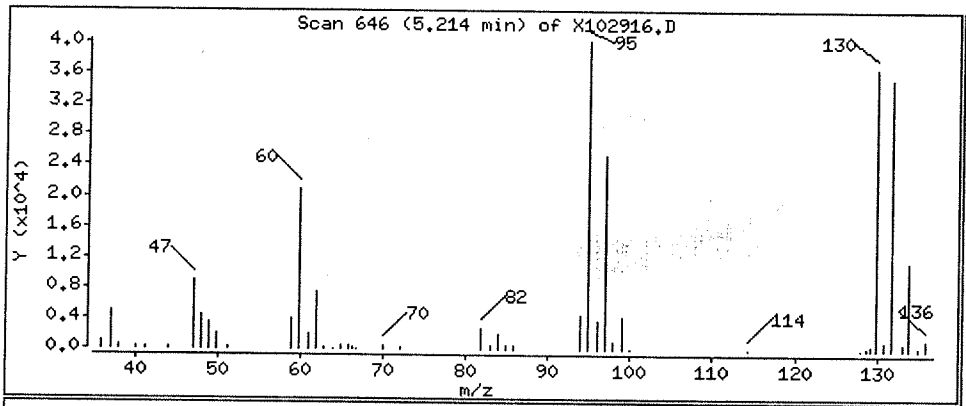
Operator: PC

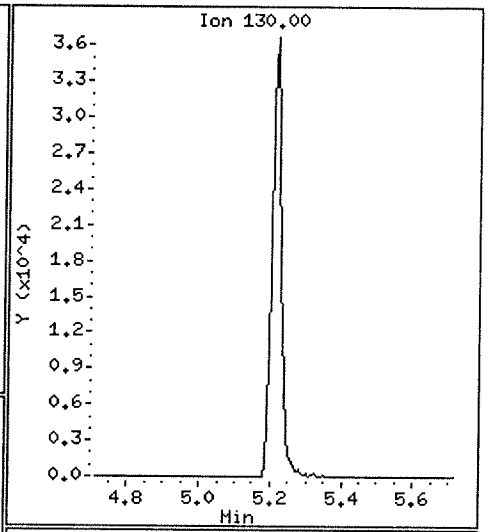
Column phase: DB624

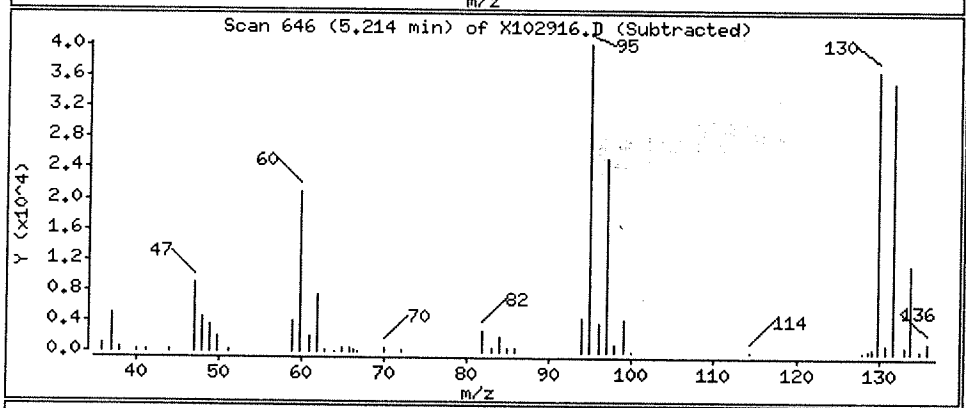
Column diameter: 0.18

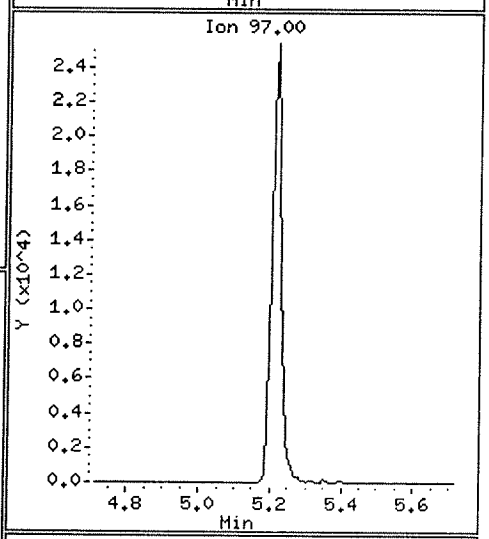
38 Trichloroethene

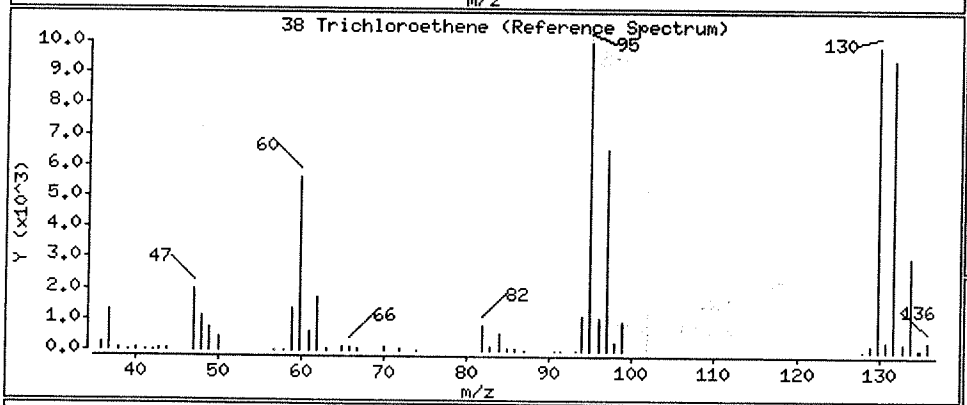
Concentration: 3802.56 ug/l

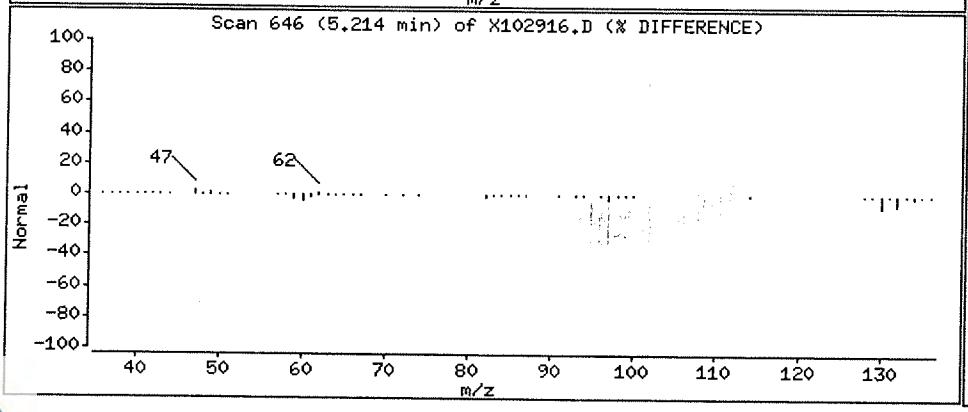


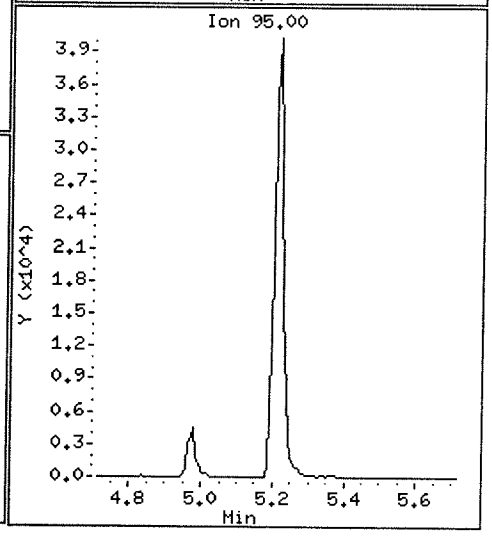












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102916.D

Date : 29-OCT-2020 16:24

Client ID: HS20101089-03

Instrument: voa6.i

Sample Info: HS20101089-03;HS20101089-03;;;

Purge Volume: 5.0

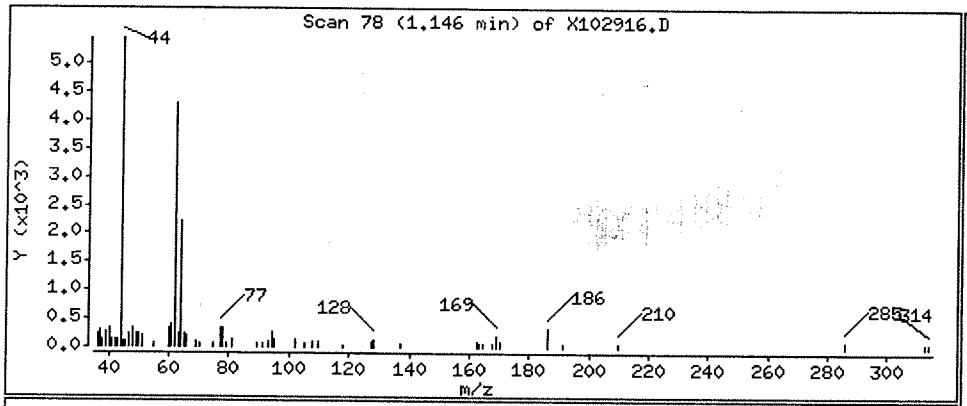
Operator: PC

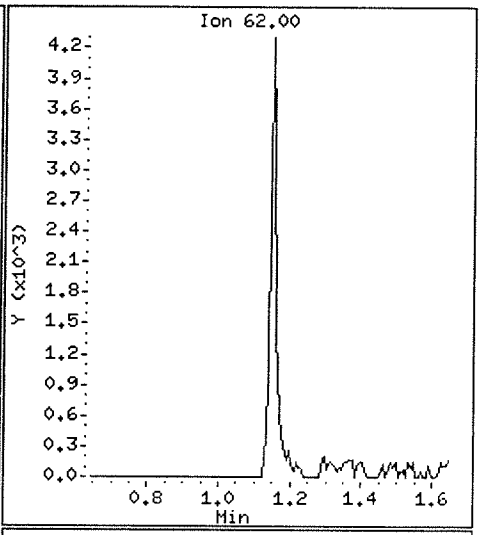
Column phase: DB624

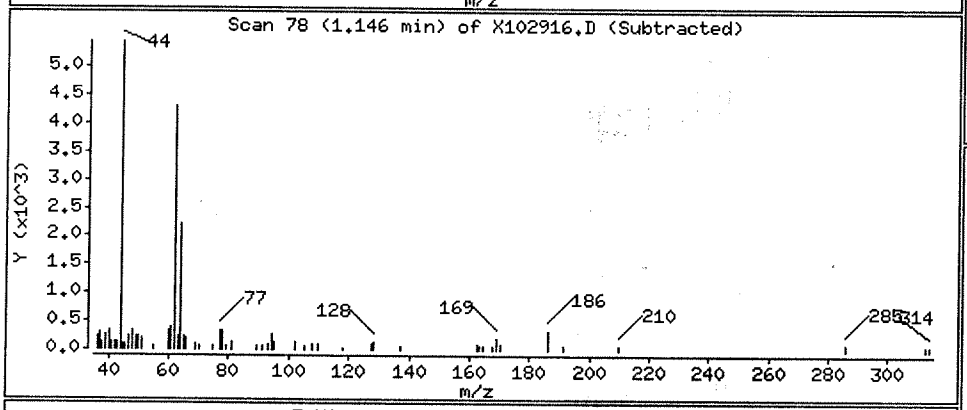
Column diameter: 0.18

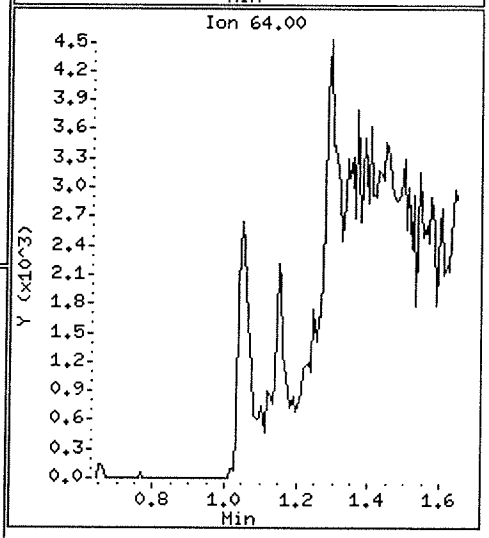
5 Vinyl Chloride

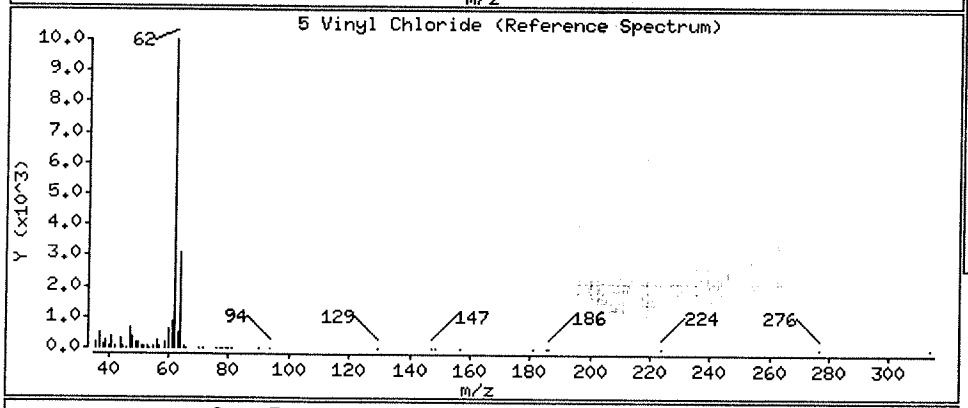
Concentration: 118.61 ug/l

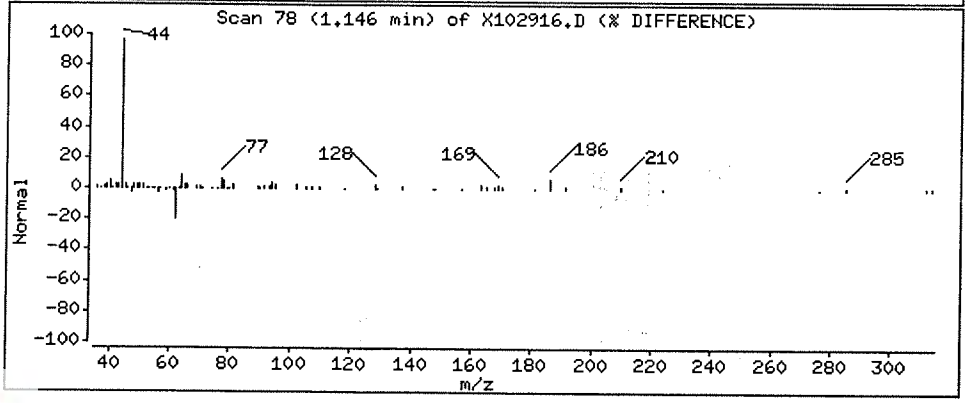












Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102918.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102918.D
Lab Smp Id: HS20101089-10 Client Smp ID: HS20101089-10
Inj Date : 29-OCT-2020 17:06
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-10;HS20101089-10;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

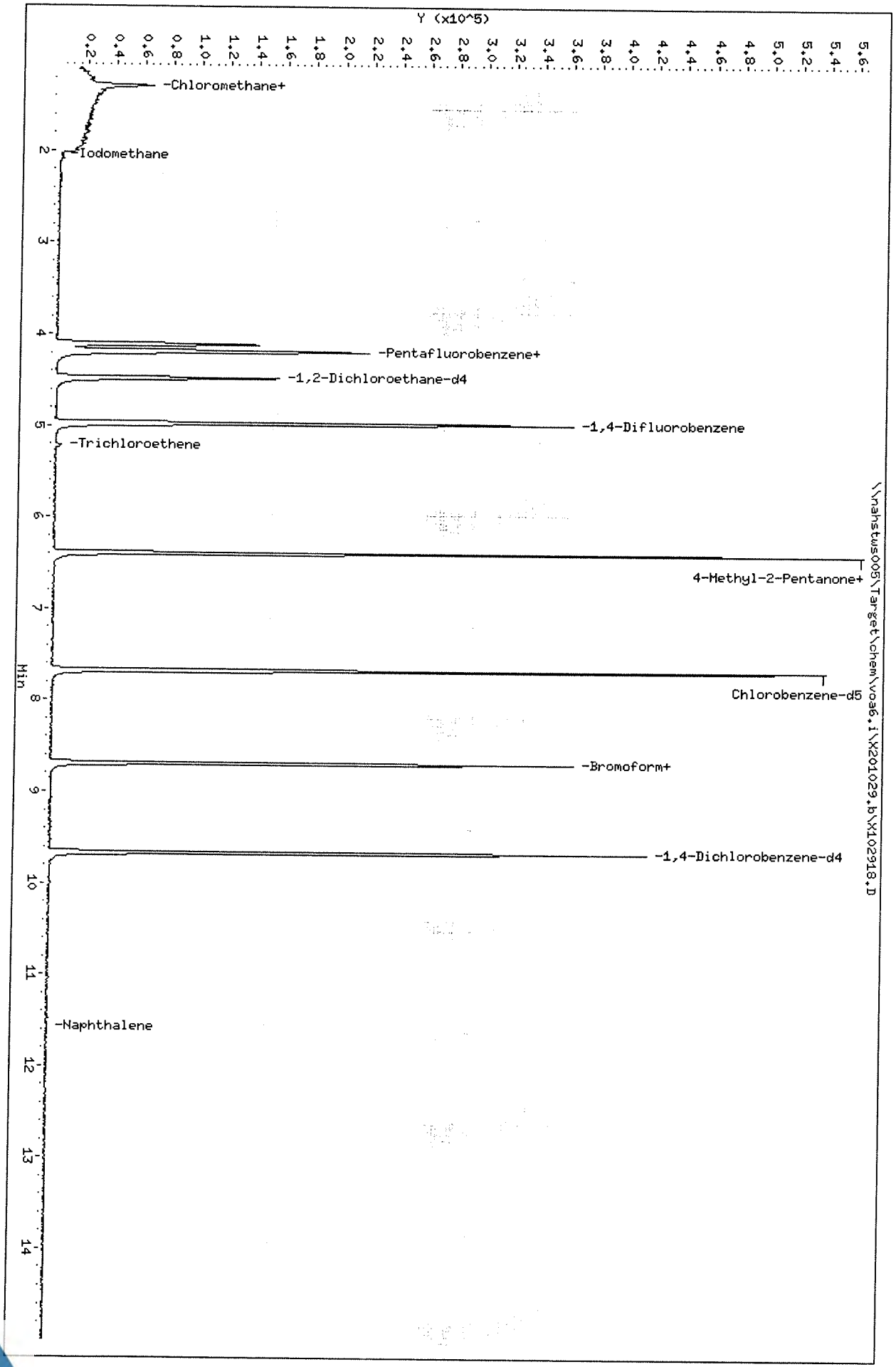
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	161082	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	273964	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	233682	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	88651	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	115489	40.9588	40.95
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	99140	44.5737	44.57
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	93856	42.3253	42.32
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	314408	47.7852	47.78
38 Trichloroethene	130	5.214	5.214	(1.049)	1181	0.65541	0.65(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102918.D
Date : 29-OCT-2020 17:06
Client ID: HS20101089-10
Sample Info: HS20101089-10;HS20101089-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102918.D

Date : 29-OCT-2020 17:06

Client ID: HS20101089-10

Instrument: voa6.i

Sample Info: HS20101089-10;HS20101089-10;;;

Purge Volume: 5.0

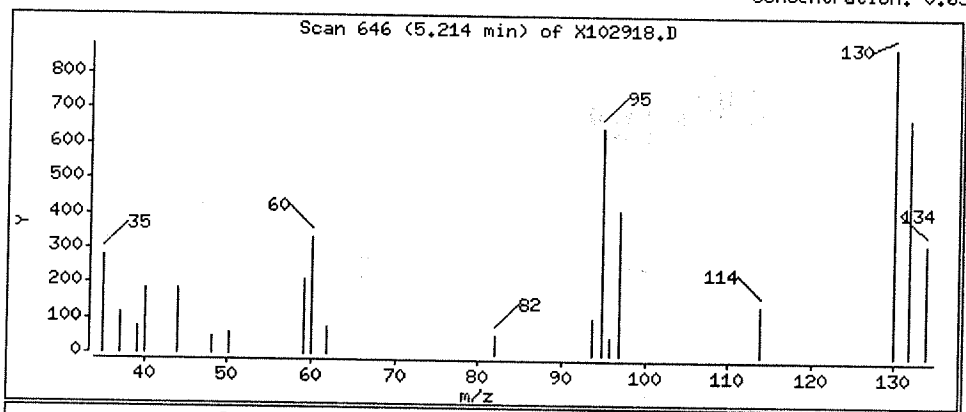
Operator: PC

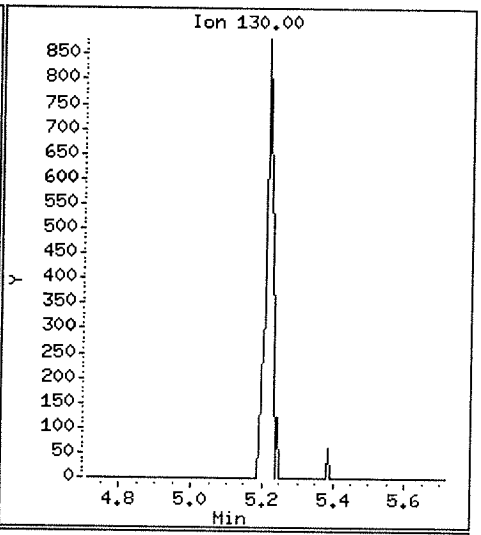
Column phase: DB624

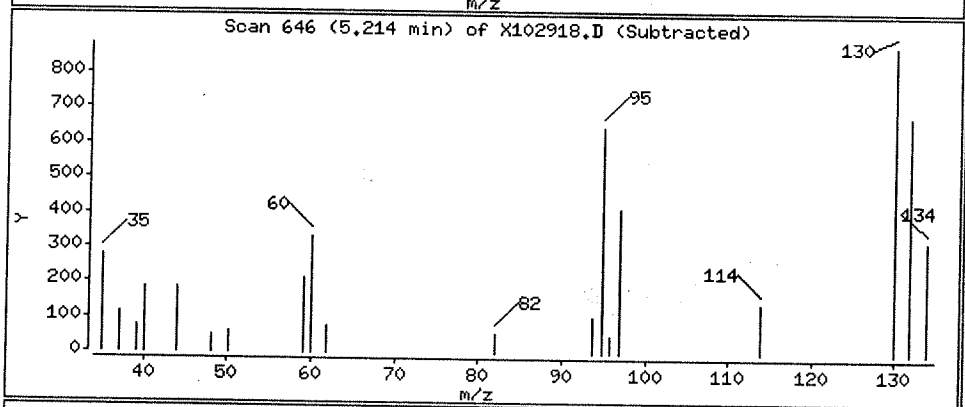
Column diameter: 0.18

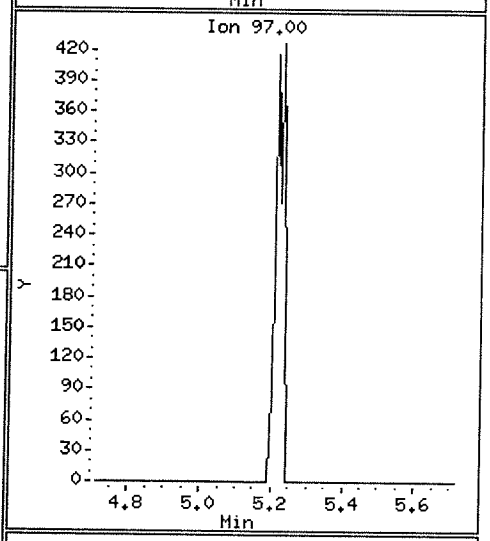
38 Trichloroethene

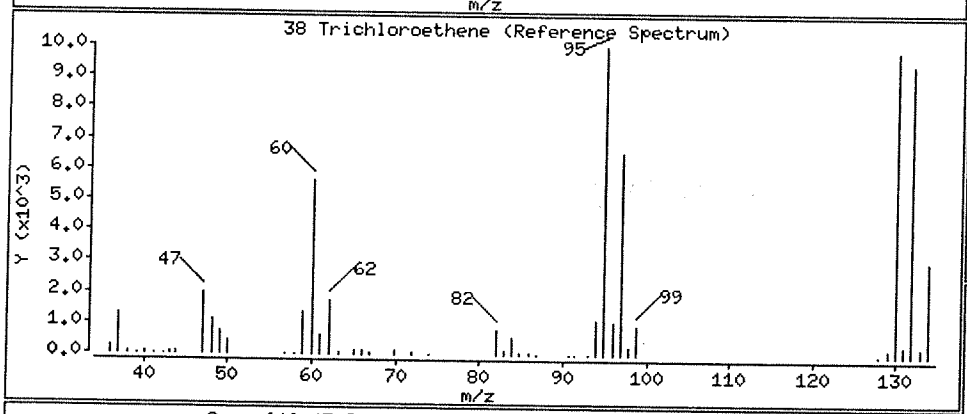
Concentration: 0.65 ug/l

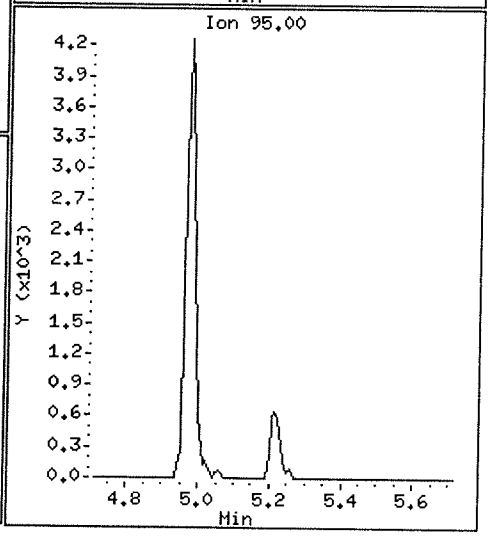


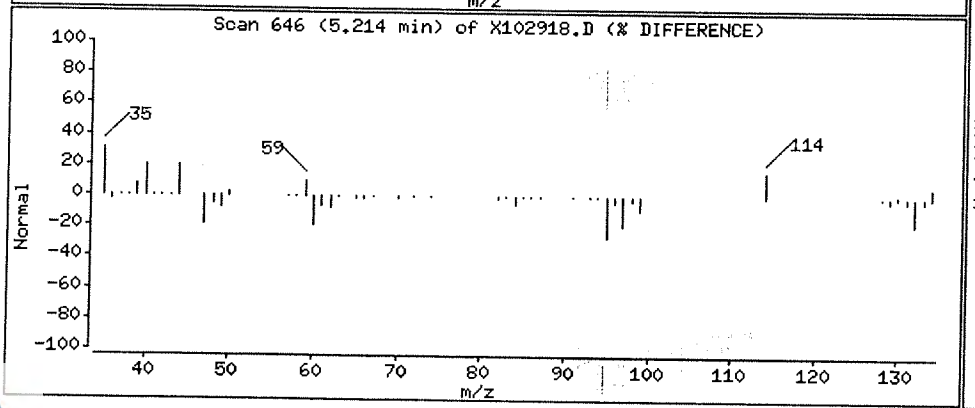












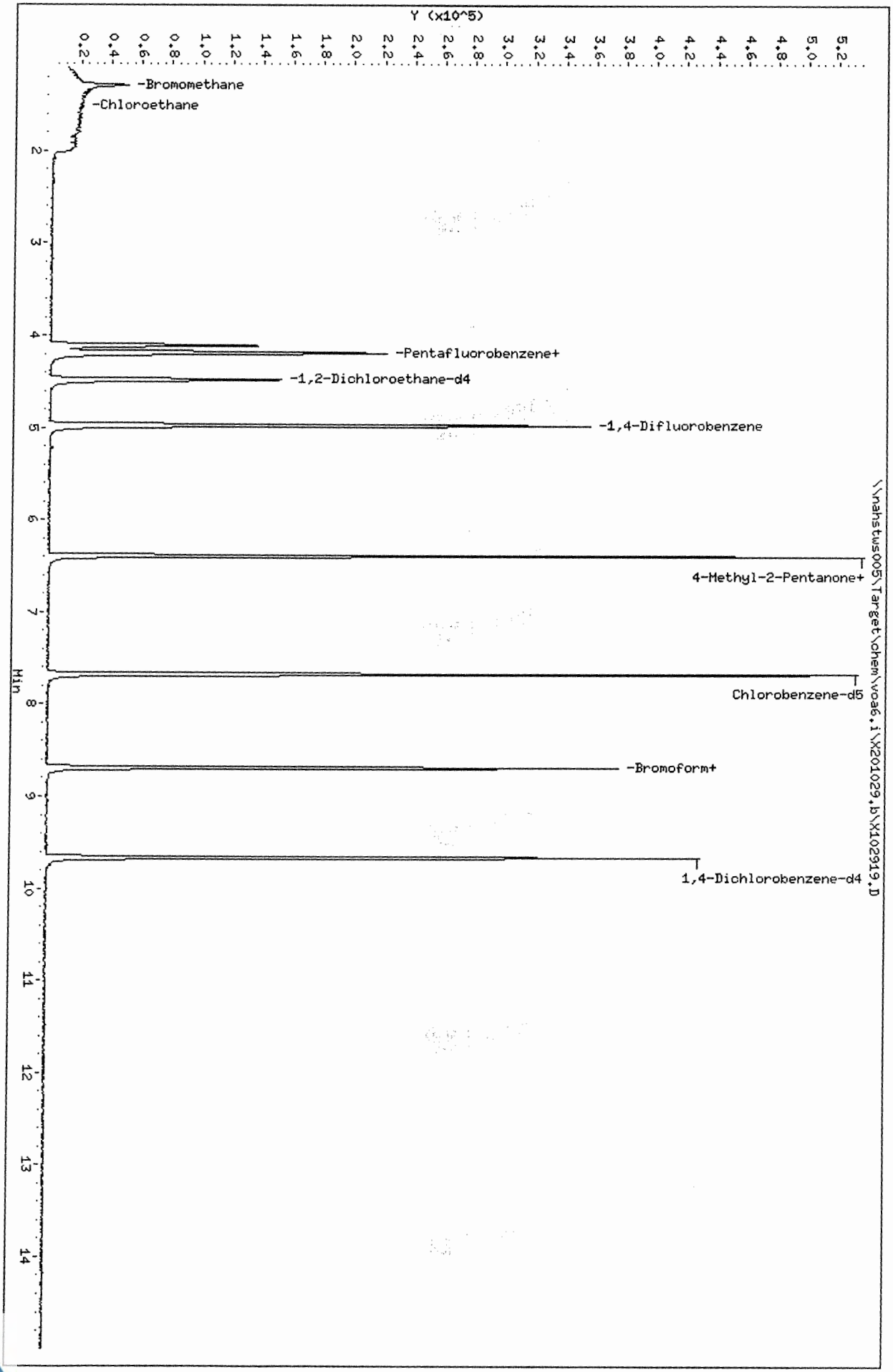
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102919.D
Lab Smp Id: HS20101089-06 Client Smp ID: HS20101089-06
Inj Date : 29-OCT-2020 17:28
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-06;HS20101089-06;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	155622	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	271144	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	232967	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	87922	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	112773	41.3985	41.39
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	99782	44.9810	44.98
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	91587	42.7512	42.75
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	311284	47.4675	47.46



Data : \\nahstws005\Target\chem\voa6.i\X201029.b\X102919.D
Date : 29-OCT-2020 17:28
Client ID: HS201010089-06
Sample Info: HS201010089-06;HS201010089-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102920.D Page
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102920.D
Lab Smp Id: HS20101089-07 Client Smp ID: HS20101089-07
Inj Date : 29-OCT-2020 17:49
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-07;HS20101089-07;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	155595	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	273122	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	230057	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	86806	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	114432	42.0143	42.01
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	94773	43.3395	43.33
$ 30 Dibromofluoromethane	113	4.111	4.110	(0.981)	90753	42.3692	42.36
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	313434	48.3661	48.36

...-2020 17:49

Client ID: HS20101089-07

Sample Info: HS20101089-07;HS20101089-07;;;

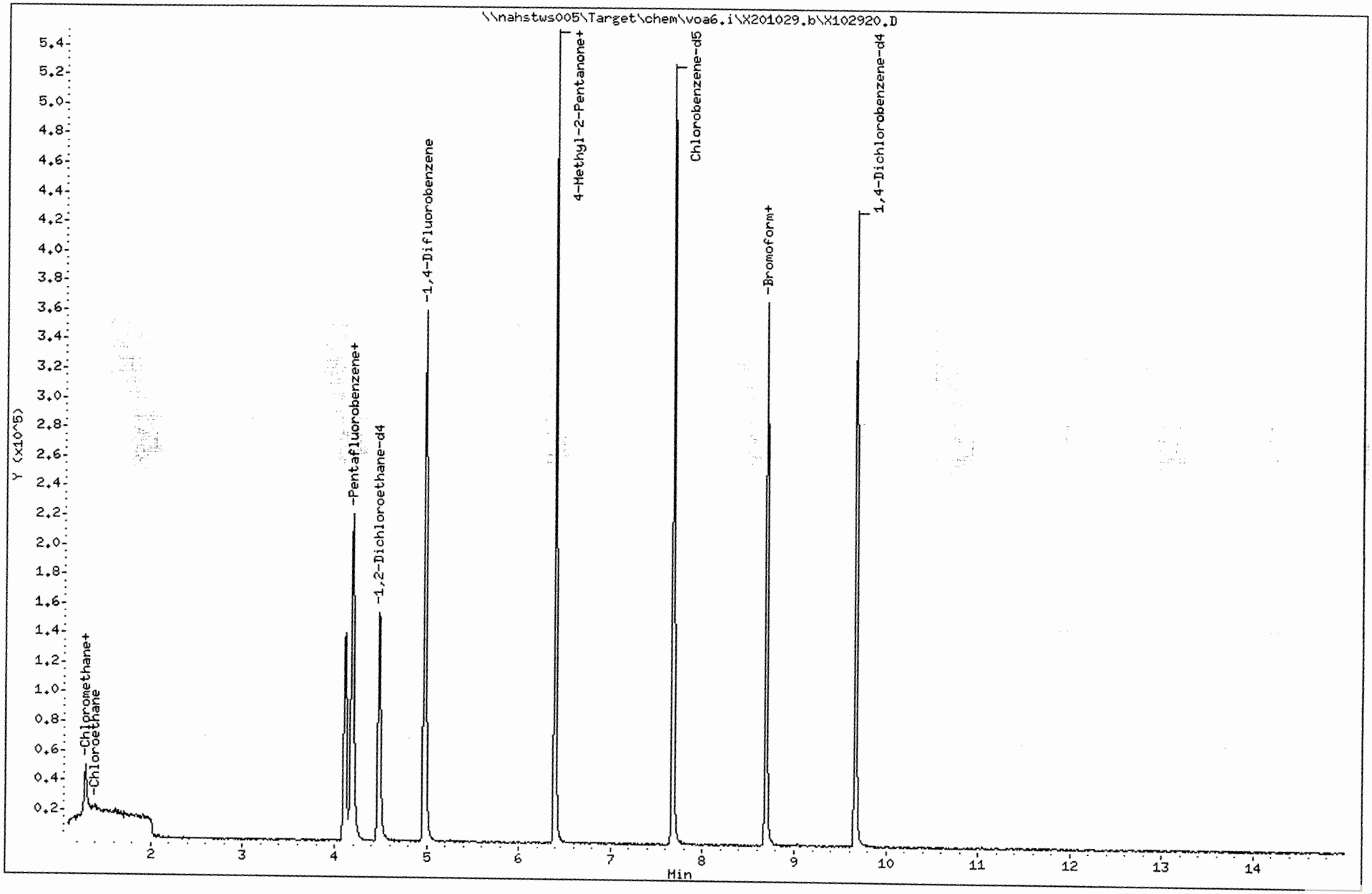
Purge Volume: 5.0

Column phase: DB624

Instrument: voa6.i

Operator: PC

Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102921.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102921.D
Lab Smp Id: HS20101089-08 Client Smp ID: HS20101089-08
Inj Date : 29-OCT-2020 18:10
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-08;HS20101089-08;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

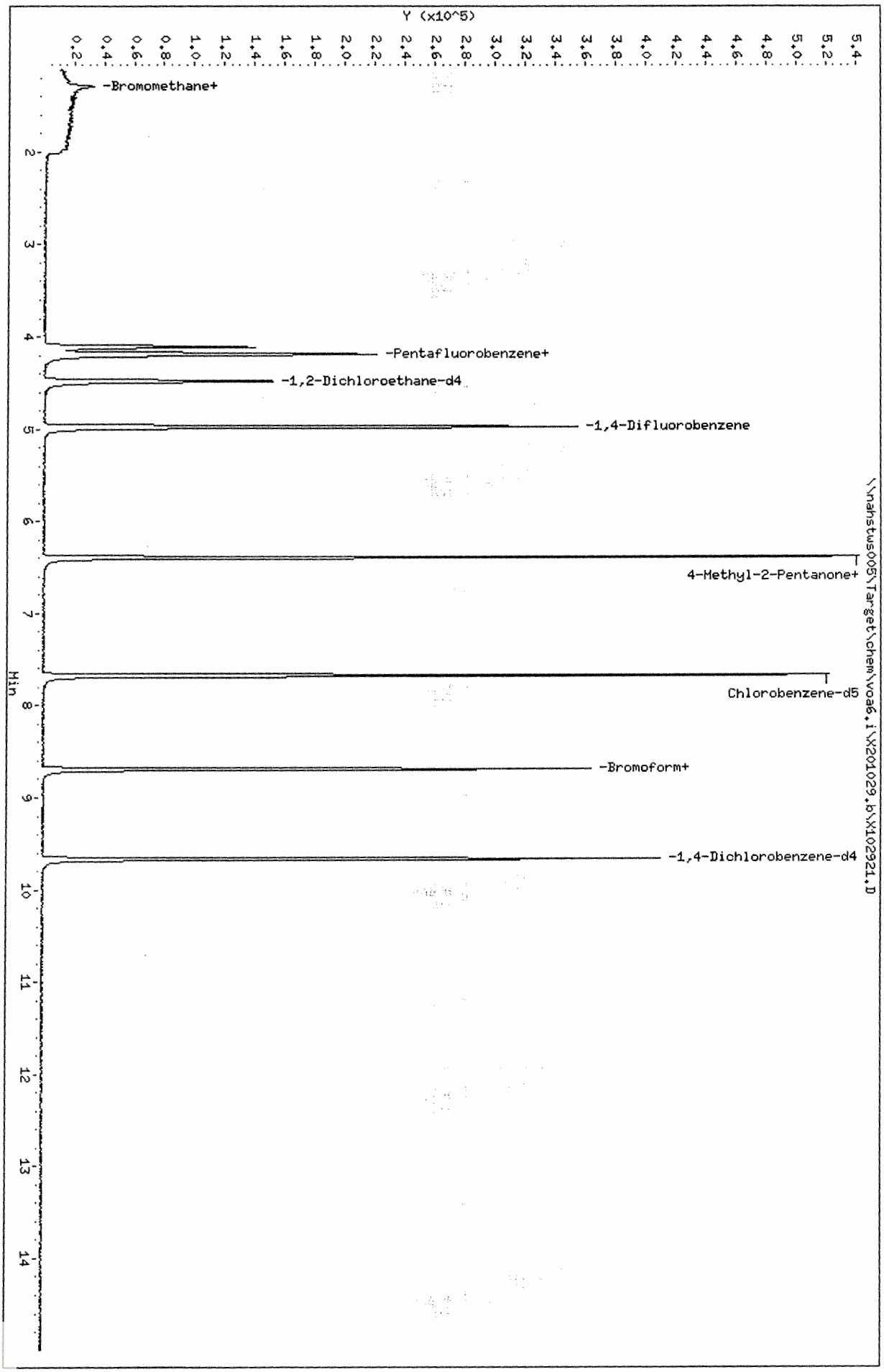
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	153229	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274449	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	228439	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	84494	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	114967	42.8619	42.86
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	95254	43.8437	43.84
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	92669	43.9318	43.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	314838	48.9069	48.90

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102921.D
Date : 29-OCT-2020 18:10
Client ID: HS20101089-08
Sample Info: HS20101089-08;HS20101089-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102922.D Page 1
Report Date: 30-Nov-2020 14:39

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102922.D
Lab Smp Id: HS20101089-09 Client Smp ID: HS20101089-09
Inj Date : 29-OCT-2020 18:31
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-09;HS20101089-09;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

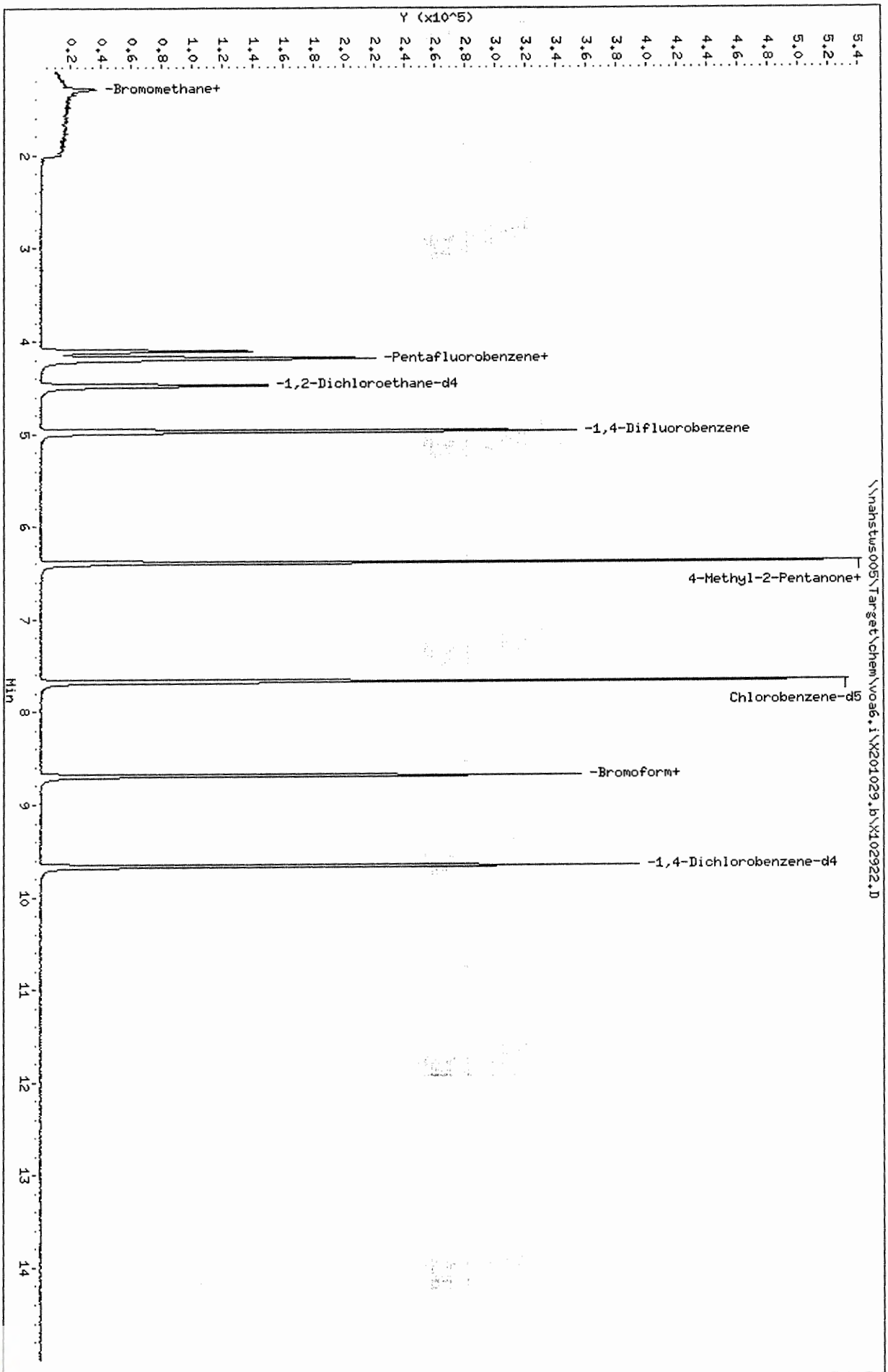
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	157356	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	266409	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	224452	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	81382	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.483	(1.068)	112202	40.7355	40.73(M)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	94596	44.2928	44.29
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	90986	42.0026	42.00
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	311866	49.2917	49.29

QC Flag Legend

M - Compound response manually integrated.

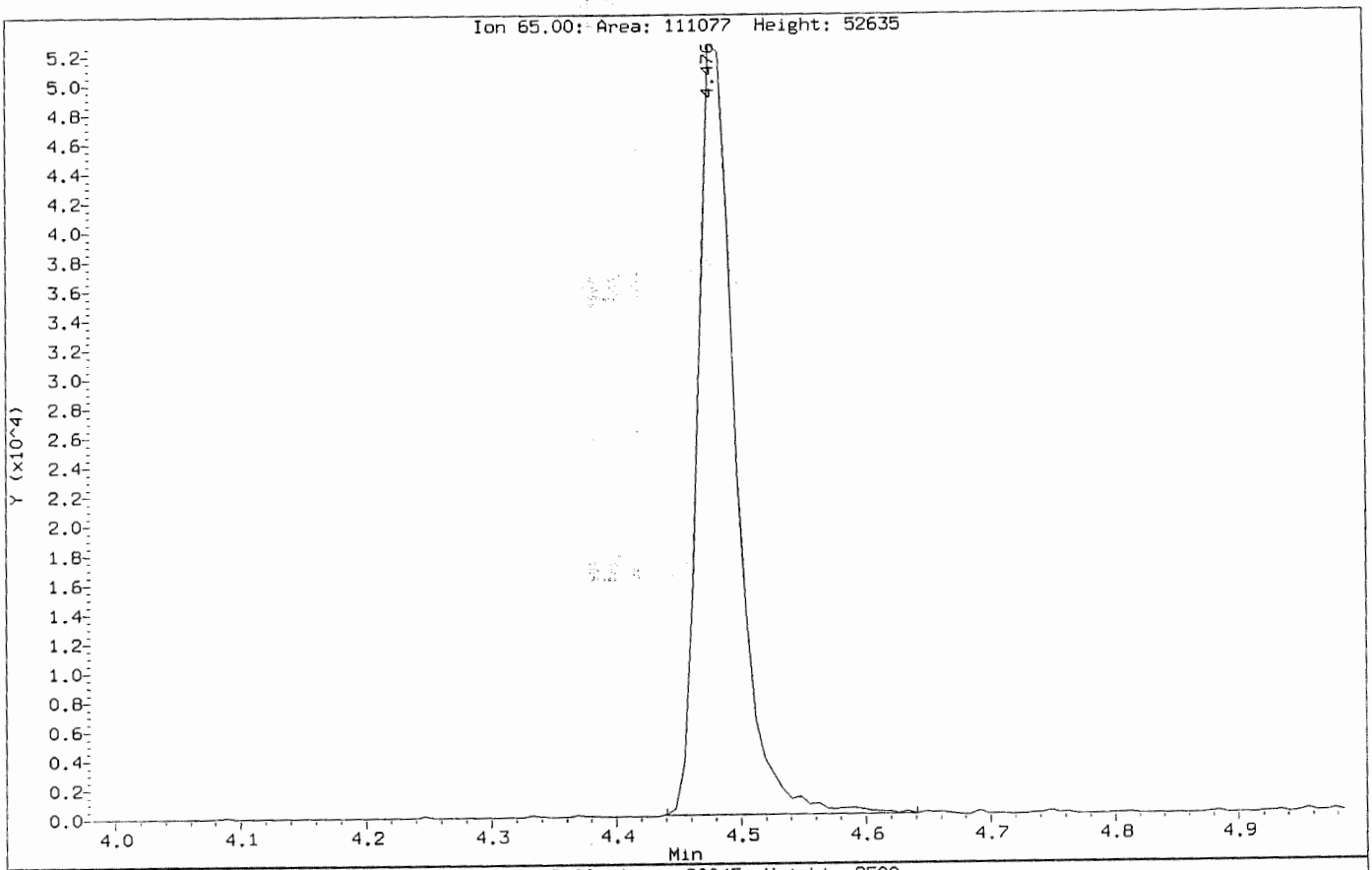


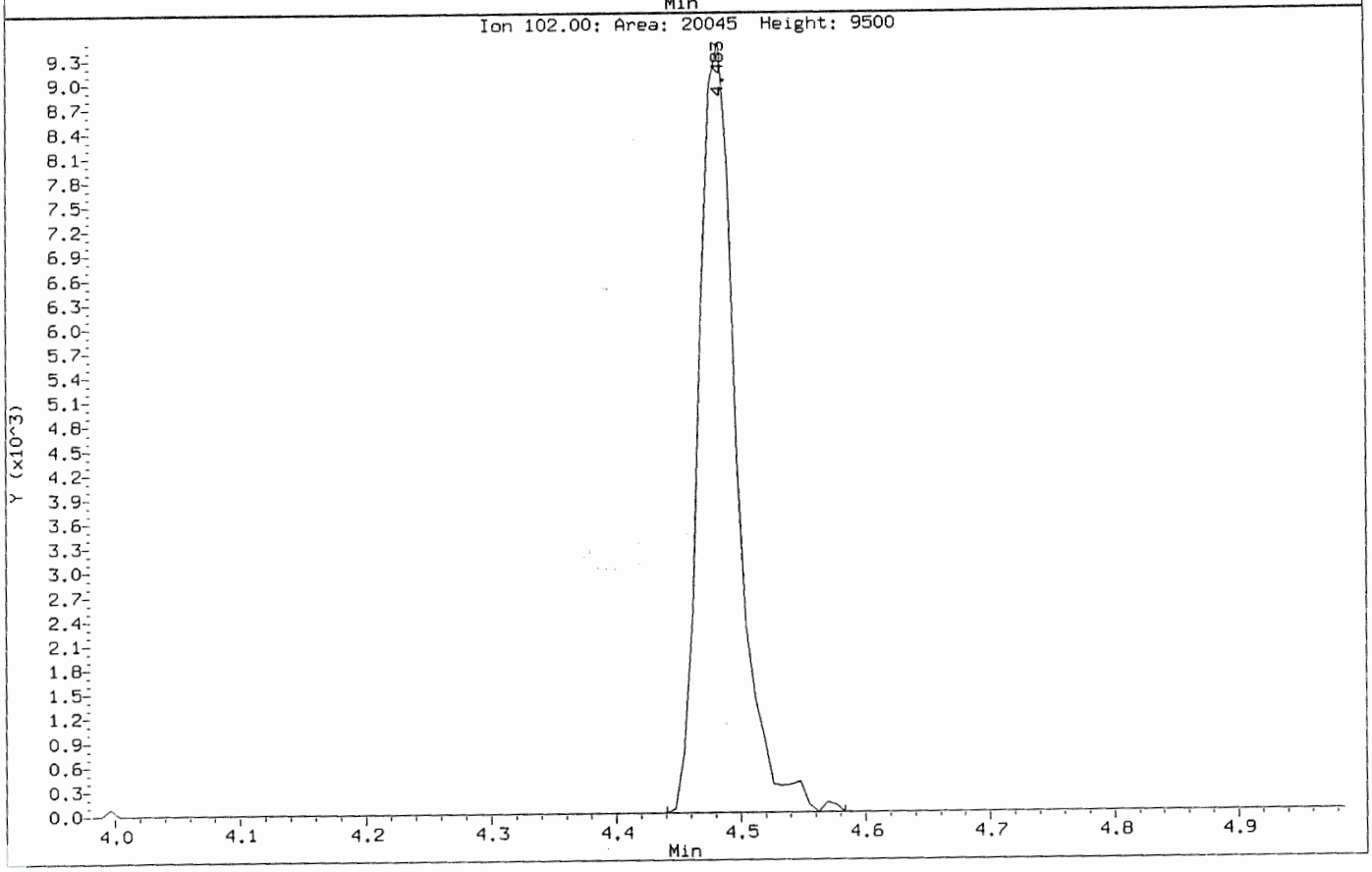
Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102922.D
Date : 29-OCT-2020 18:31
Client ID: HS20101089-09
Sample Info: HS20101089-09;HS20101089-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\Before\X102922.D
Injection Date: 29-OCT-2020 18:31
Instrument: voa6.i
Client Sample ID: HS20101089-09

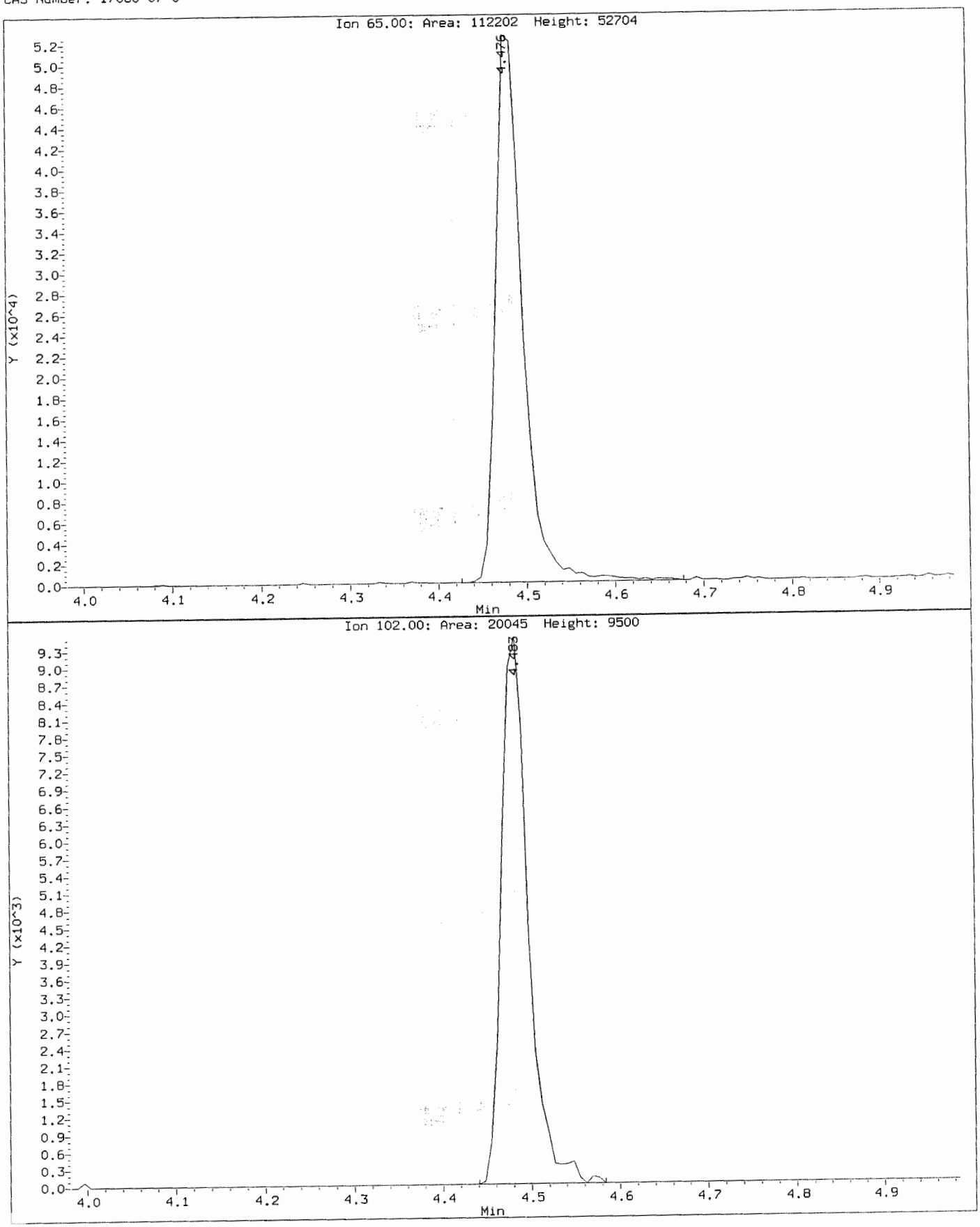
Compound: 1.2-Dichloroethane-d4
CAS Number: 17060-07-0





Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102922.D
Injection Date: 29-OCT-2020 18:31
Instrument: voa6.i
Client Sample ID: HS20101089-09

Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102923.D Page 1
Report Date: 30-Nov-2020 14:39

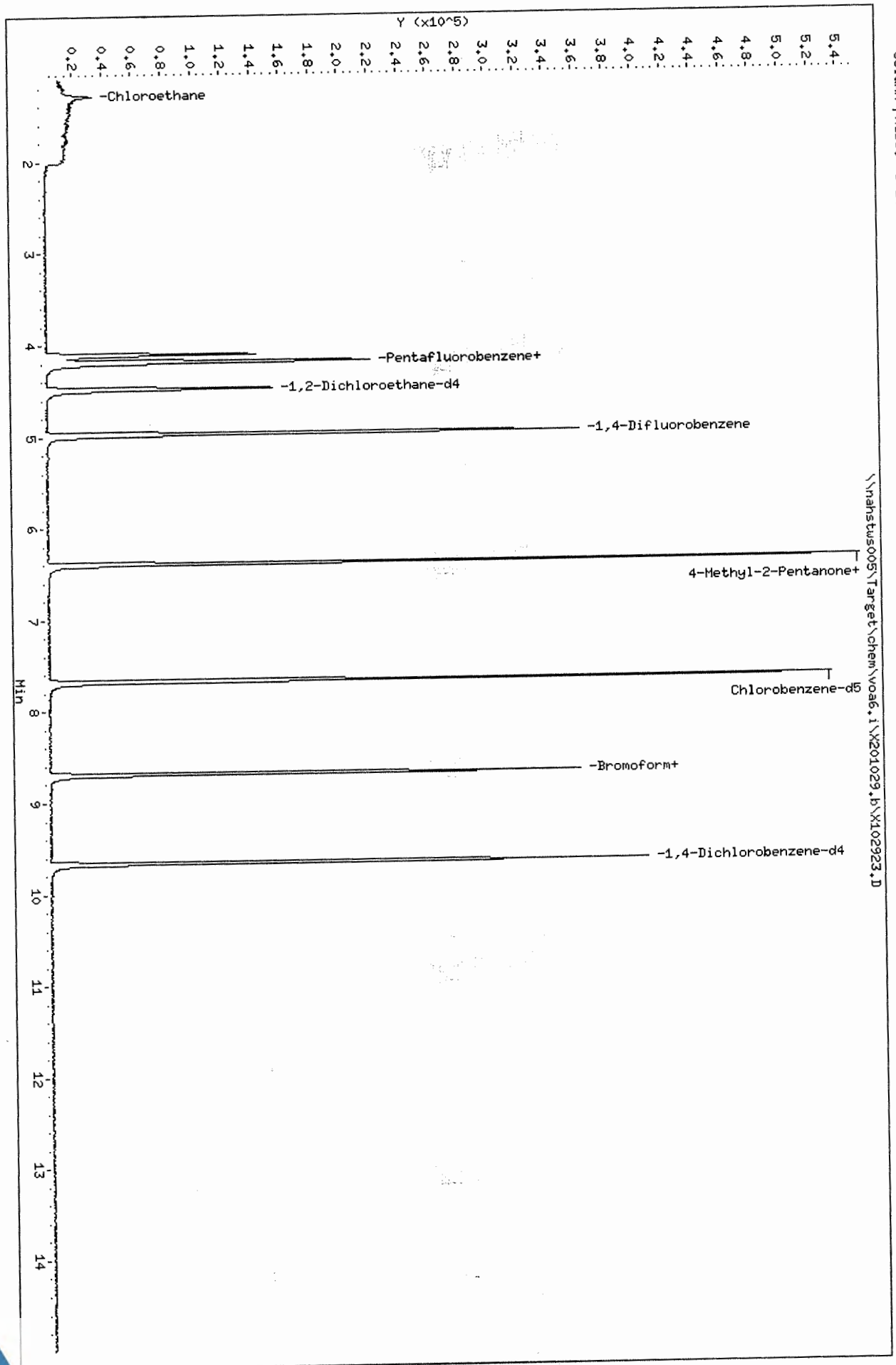
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102923.D
Lab Smp Id: HS20101089-05 Client Smp ID: HS20101089-05
Inj Date : 29-OCT-2020 18:52
Operator : PC Inst ID: voa6.i
Smp Info : HS20101089-05;HS20101089-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:36 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	159164	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	274184	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	230374	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	84225	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	113473	40.7290	40.72
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	94745	43.2704	43.27
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	91996	41.9865	41.98
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	314407	48.4465	48.44



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102923.D
Date : 29-OCT-2020 18:52
Client ID: HS20101089-05
Sample Info: HS20101089-05;HS20101089-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102924.D Page 1
Report Date: 30-Nov-2020 14:34

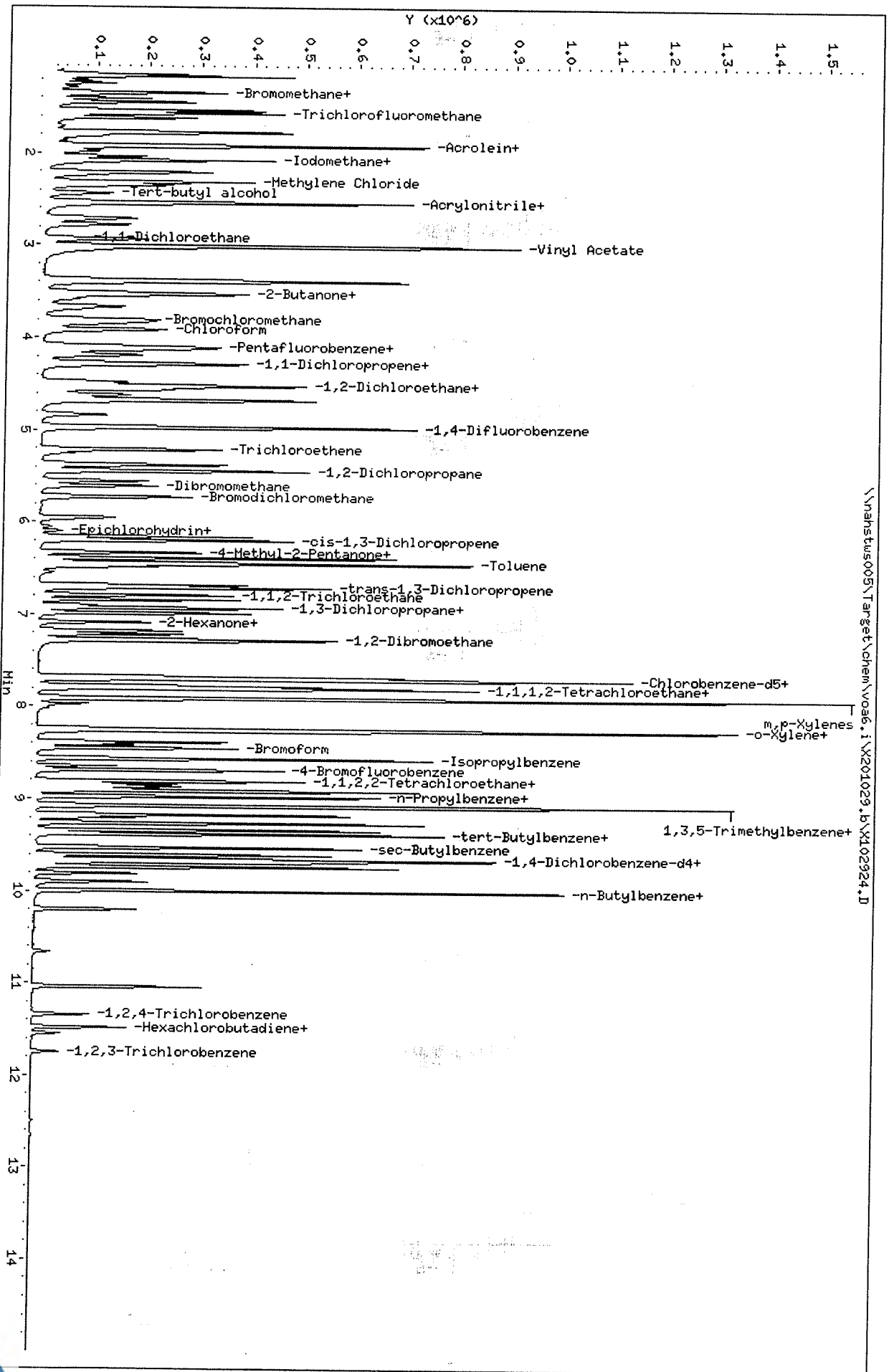
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201029.b\X102924.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 29-OCT-2020 19:13
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201029.b\8260W.m
Meth Date : 30-Nov-2020 14:34 voa6.i Quant Type: ISTD
Cal Date : 25-OCT-2020 19:09 Cal File: X102508.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	132906	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	280554	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	260317	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	105844	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.070)	116375	50.0000	50.01
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	121603	50.0000	48.87
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	93484	50.0000	51.09
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	358700	50.0000	48.89
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	79672	50.0000	47.05
11 1,1-Dichloroethene	96	1.926	1.926	(0.460)	139940	50.0000	43.23
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	154748	50.0000	51.07
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.844)	111639	50.0000	53.67
17 Methylene Chloride	84	2.312	2.312	(0.552)	103580	50.0000	49.31
38 Trichloroethene	130	5.214	5.214	(1.049)	94701	50.0000	51.32
5 Vinyl Chloride	62	1.145	1.145	(0.273)	174097	50.0000	42.60



Data File: \\nahstws005\Target\chem\voa6.i\X201029.b\X102924.D
Date : 29-OCT-2020 19:13
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

HS20101089 - Sub Perch Report IV (E2001014)

ALS WO# HS20101089

October 26, 2020 Service Request No:E2001014

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101089

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001014.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001014
Project:	HS20101089	**Date Received:**	10/22/20
Sample Matrix:	W		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Ten samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000533: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS/DLCS recoveries pass. MS/MSD was performed on an unrelated sample.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001014
Project: HS20101089

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001014-001	16WW44-201019	10/19/2020	0750
E2001014-002	16WW37-201019	10/19/2020	0835
E2001014-003	16WW38-201019	10/19/2020	0915
E2001014-004	16WW14-201019	10/19/2020	1000
E2001014-005	16WW34-201019	10/19/2020	1045
E2001014-006	16WW34-201019-FD	10/19/2020	1045
E2001014-007	16WW33-201019	10/19/2020	1130
E2001014-008	16WW32-201019	10/19/2020	1215
E2001014-009	16WW31-201019	10/19/2020	1255
E2001014-010	16WW46-201019	10/19/2020	1340

Service Request Summary

Folder #: **E2001014**
Client Name: ALS Environmental - US
Project Name: HS20101089
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/4/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101089
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001014-001	16WW44-201019	Ground Water	10/19/20 0750	**IV**
E2001014-002	16WW37-201019	Ground Water	10/19/20 0835	**IV**
E2001014-003	16WW38-201019	Ground Water	10/19/20 0915	**IV**
E2001014-004	16WW14-201019	Ground Water	10/19/20 1000	**IV**
E2001014-005	16WW34-201019	Ground Water	10/19/20 1045	**IV**
E2001014-006	16WW34-201019-FD	Ground Water	10/19/20 1045	**IV**
E2001014-007	16WW33-201019	Ground Water	10/19/20 1130	**IV**
E2001014-008	16WW32-201019	Ground Water	10/19/20 1215	**IV**
E2001014-009	16WW31-201019	Ground Water	10/19/20 1255	**IV**
E2001014-010	16WW46-201019	Ground Water	10/19/20 1340	**IV**

Service Request Summary

Folder #:	**E2001014**
Client Name:	ALS Environmental - US
Project Name:	HS20101089
Project Number:	

Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	10/22/20
Internal Due Date:	11/4/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20101089
EDD:	No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	10	Level II due 11/4,level IV 11/11

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14983**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101089
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101089-01**	**16WW44-201019**	**Groundwater**	**19 Oct 2020 07:50**
	SUB_Perch-6850			04 Nov 2020
2.	**HS20101089-02**	**16WW37-201019**	**Groundwater**	**19 Oct 2020 08:35**
	SUB_Perch-6850			04 Nov 2020
3.	**HS20101089-03**	**16WW38-201019**	**Groundwater**	**19 Oct 2020 09:15**
	SUB_Perch-6850			04 Nov 2020
4.	**HS20101089-04**	**16WW14-201019**	**Groundwater**	**19 Oct 2020 10:00**
	SUB_Perch-6850			04 Nov 2020
5.	**HS20101089-05**	**16WW34-201019**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
6.	**HS20101089-06**	**16WW34-201019-FD**	**Groundwater**	**19 Oct 2020 10:45**
	SUB_Perch-6850			04 Nov 2020
7.	**HS20101089-07**	**16WW33-201019**	**Groundwater**	**19 Oct 2020 11:30**
	SUB_Perch-6850			04 Nov 2020
8.	**HS20101089-08**	**16WW32-201019**	**Groundwater**	**19 Oct 2020 12:15**
	SUB_Perch-6850			04 Nov 2020
9.	**HS20101089-09**	**16WW31-201019**	**Groundwater**	**19 Oct 2020 12:55**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14983**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED		DUE DATE
	SUB_Perch-6850		04 Nov 2020
10. HS20101089-10	**16WW46-201019**	**Groundwater**	**19 Oct 2020 13:40**
	SUB_Perch-6850		04 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. Mangum Date/Time: 10/22/20

Received By: [illegible] Date/Time: 10/22/20 1105

Cooler ID(s): Temperature(s):

Cooler Receipt Form

ALS Environmental

Project Chemist: IH

Client/Project: ALS-HI

Thermometer ID: IR31

Date/Time Received: 10/22/20 Initials: IH

Date/Time Logged in: 10/22/20 Initials: IH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/22/20	1104	IH	2.8	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001014-001	16WW44-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001014-002	16WW37-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001014-003	16WW38-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001014-004	16WW14-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001014-005	16WW34-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001014-006	16WW34-201019-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001014-007	16WW33-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001014-008	16WW32-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001014-009	16WW31-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001014-010	16WW46-201019	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001015-001	16EW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001015-002	16WW49-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001015-003	16WW48-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001015-004	16WW51-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001015-005	16EW08-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001015-006	16EW04-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001015-007	16RW01-201020	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2001016-001	LH18/24-SP650_102120-AIX	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000533-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000533-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000533-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000533-04	16WW48-201020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000533-05	16WW48-201020 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000533-02	1.00µL	EQ2000533-03	1.00µL	EQ2000533-04	1.00µL	EQ2000533-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001014-001	100.00µL	E2001014-002	100.00µL	E2001014-003	100.00µL	E2001014-004	100.00µL	E2001014-005	100.00µL	E2001014-006	100.00µL
E2001014-007	100.00µL	E2001014-008	100.00µL	E2001014-009	100.00µL	E2001014-010	100.00µL	E2001015-001	100.00µL	E2001015-002	100.00µL
E2001015-003	100.00µL	E2001015-004	100.00µL	E2001015-005	100.00µL	E2001015-006	100.00µL	E2001015-007	100.00µL	E2001016-001	100.00µL
EQ2000533-01	100.00µL	EQ2000533-02	100.00µL	EQ2000533-03	100.00µL	EQ2000533-04	100.00µL	EQ2000533-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 368381 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/23/20 14:19

Preparation Steps

Step: Preparation
Started: 10/23/20 14:19
Finished: 10/23/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/26/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW44-201019	**Units:**	µg/L
Lab Code:	E2001014-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 10:42	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0835
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW37-201019	**Units:**	µg/L
Lab Code:	E2001014-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.393**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 12:59	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 0915
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW38-201019	**Units:**	µg/L
Lab Code:	E2001014-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:01	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1000
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW14-201019	**Units:**	µg/L
Lab Code:	E2001014-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:09	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019	**Units:**	µg/L
Lab Code:	E2001014-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:17	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW34-201019-FD	**Units:**	µg/L
Lab Code:	E2001014-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:24	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1130
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW33-201019	**Units:**	µg/L
Lab Code:	E2001014-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0259**	J	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:32	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1215
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW32-201019	**Units:**	µg/L
Lab Code:	E2001014-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:40	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1255
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW31-201019	**Units:**	µg/L
Lab Code:	E2001014-009	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 20:48	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	10/19/20 1340
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW46-201019	**Units:**	µg/L
Lab Code:	E2001014-010	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/23/20 21:04	368381	700781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000533-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:06	368381	700826	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089
Sample Matrix: Ground Water

Service Request: E2001014
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 368381

	Lab Control Sample EQ2000533-02			Duplicate Lab Control Sample EQ2000533-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.110	0.100	110	84 - 119	4	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.106**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:13	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000533-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	10/23/20	10/26/20 11:21	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	10/26/20

Matrix Spike Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2001015-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS Matrix Spike EQ2000533-04				Batch QCDMS Duplicate Matrix Spike EQ2000533-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	167	167	0.100	151	#	167	0.100	249	#	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-04	**Basis:**	NA
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:16	368381	700826	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000533-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**167**		1.00	0.500	0.250	10	10/23/20	10/26/20 12:24	368381	700826	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte **Curve Fit** **Weighting**

Perchlorate **Linear** **Equal** **R2 = 0.9997655579102110** **Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

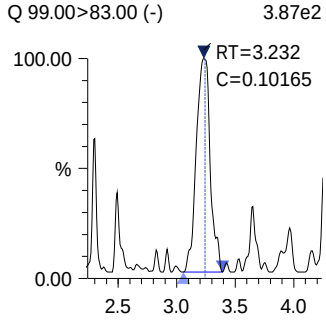
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

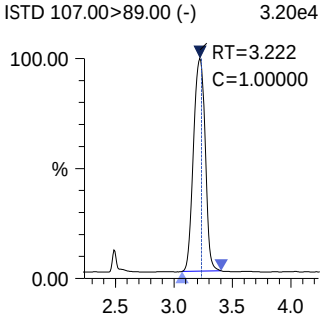
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

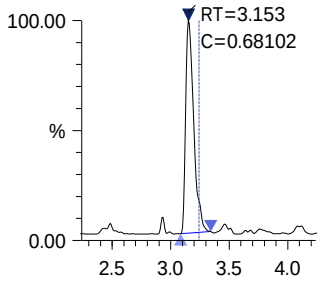
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

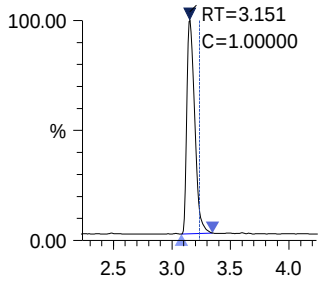
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

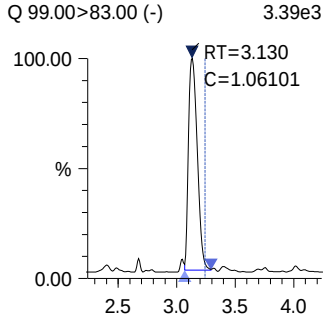
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

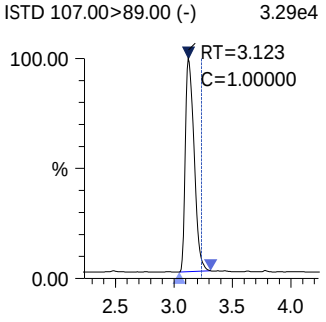
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

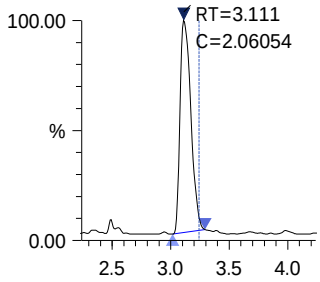
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

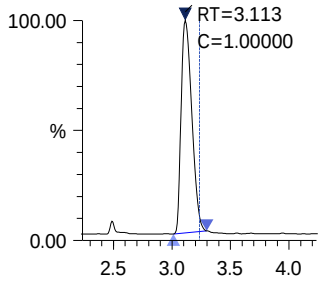
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

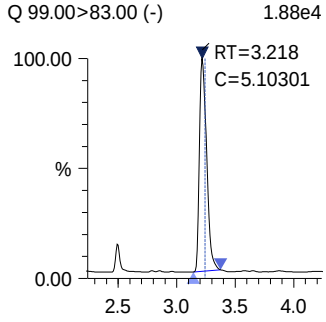
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

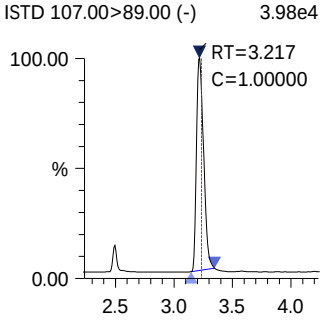
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

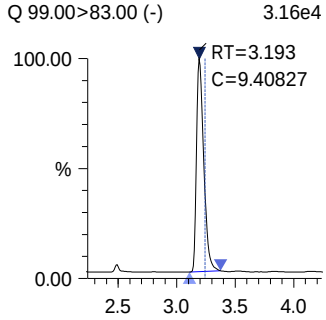
PERCHLORATE6

Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

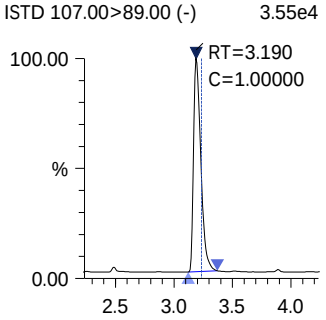
Perchlorate

Conc 9.40827
Area 136097



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693



ALS Group Houston

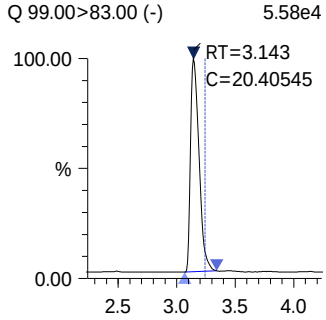
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

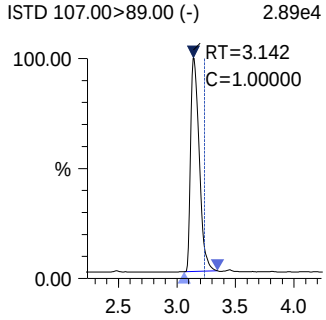
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

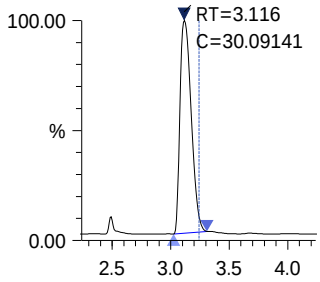
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

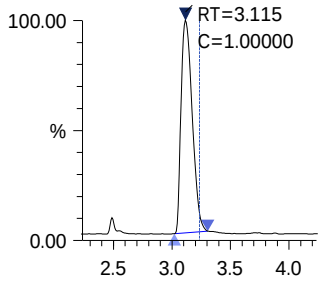
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

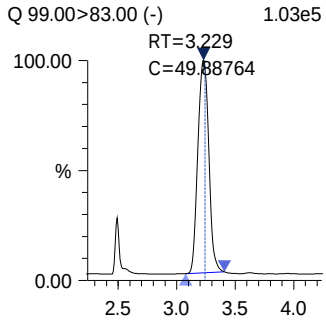
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

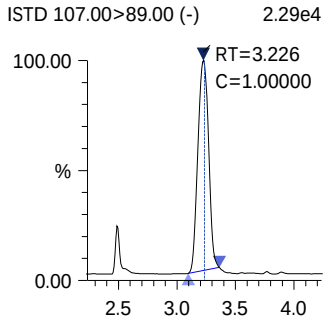
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

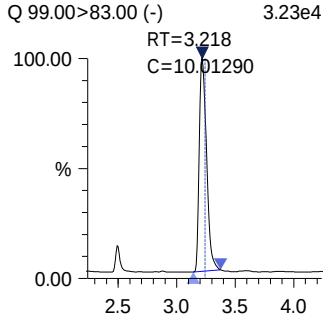
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

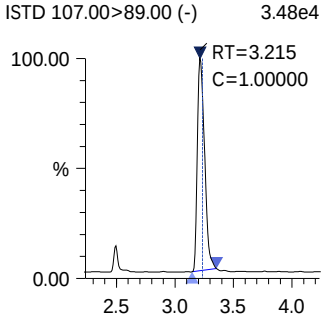
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201023

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201023_001	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:39
2	null		20201023_002	Perchlorate6850b.lcm	1x	☒		10/23/2020 15:46
3	IB		20201023_003	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:04
4	IB		20201023_004	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:12
5	LODV		20201023_005	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:20
6	ICS		20201023_006	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:28
7	PERCHLORATE7		20201023_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 16:35
8	EQ2000532-01		20201023_008	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:43
9	EQ2000532-02		20201023_009	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:51
10	EQ2000532-03		20201023_010	Perchlorate6850b.lcm	1x	☒		10/23/2020 16:59
11	E2001001-001		20201023_011	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:07
12	E2001001-002		20201023_012	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:15
13	E2001001-003		20201023_013	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:23
14	E2001001-004		20201023_014	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:31
15	E2001001-005		20201023_015	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:39
16	E2001001-006		20201023_016	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:47
17	E2001001-007		20201023_017	Perchlorate6850b.lcm	1x	☒		10/23/2020 17:55
18	PERCHLORATE7		20201023_018	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 18:02
19	E2001001-008		20201023_019	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:10
20	E2001002-001		20201023_020	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:18
21	E2001003-001		20201023_021	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:26
22	E2001003-002		20201023_022	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:34
23	E2001003-003		20201023_023	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:42
24	E2001003-004		20201023_024	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:50
25	EQ2000533-01		20201023_025	Perchlorate6850b.lcm	1x	☒		10/23/2020 18:58
26	EQ2000533-02		20201023_026	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:06
27	EQ2000533-03		20201023_027	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:13
28	EQ2000533-04		20201023_028	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:21
29	PERCHLORATE7		20201023_029	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 19:29
30	EQ2000533-05		20201023_030	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:37
31	E2001014-001		20201023_031	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:45
32	E2001014-002		20201023_032	Perchlorate6850b.lcm	1x	☒		10/23/2020 19:53
33	E2001014-003		20201023_033	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:01
34	E2001014-004		20201023_034	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:09
35	E2001014-005		20201023_035	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:17
36	E2001014-006		20201023_036	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:24
37	E2001014-007		20201023_037	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:32
38	E2001014-008		20201023_038	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:40
39	E2001014-009		20201023_039	Perchlorate6850b.lcm	1x	☒		10/23/2020 20:48
40	PERCHLORATE7		20201023_040	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 20:56
41	E2001014-010		20201023_041	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:04
42	E2001015-001		20201023_042	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:12
43	E2001015-002		20201023_043	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:20
44	E2001015-003		20201023_044	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:28
45	E2001015-004		20201023_045	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:36
46	E2001015-005		20201023_046	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:44
47	E2001015-006		20201023_047	Perchlorate6850b.lcm	1x	☒		10/23/2020 21:52
48	E2001015-007		20201023_048	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:00
49	E2001016-001		20201023_049	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:07
50	PERCHLORATE7		20201023_050	Perchlorate6850b.lcm	1x	☒	3100807-05	10/23/2020 22:15
51	null		20201023_051	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:20
52	null		20201023_052	Perchlorate6850b.lcm	1x	☒		10/23/2020 22:25
53								
54								
55								

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒	3100807-05	10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:07
26								
27								
28								
29								
30								
31								
32								
33								
34								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_029

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.82	NA	NA	NA	-1.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_040

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.53	NA	NA	NA	-4.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201023\20201023_050

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700781
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.67	NA	NA	NA	-3.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.74	NA	NA	NA	-2.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.61	NA	NA	NA	-3.9	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_024

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 700826
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/23/20 19:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201023\20201023_029
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000536-01
Analysis Lot: 700781
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-01	205,363	3.14
16WW38-201019	E2001014-003	137,403	3.12
16WW14-201019	E2001014-004	94,522	3.07
16WW34-201019	E2001014-005	202,842	3.15
16WW34-201019-FD	E2001014-006	179,043	3.19
16WW33-201019	E2001014-007	146,998	3.16
16WW32-201019	E2001014-008	148,270	3.11
16WW31-201019	E2001014-009	181,986	3.10

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 20:56

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_040	**Lab Code:**	EQ2000536-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-02	158,162	3.19
16WW46-201019	E2001014-010	85,083	3.12

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/23/20 22:15

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201023\20201023_050	**Lab Code:**	EQ2000536-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700781
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000536-03	189,894	3.08

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 10:26

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_007	**Lab Code:**	EQ2000540-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-01	226,473	3.06
16WW44-201019	E2001014-001	253,840	3.06
Method Blank	EQ2000533-01	248,798	3.06
Lab Control Sample	EQ2000533-02	253,069	3.07
Duplicate Lab Control Sample	EQ2000533-03	254,501	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101089

Service Request: E2001014
Date Analyzed: 10/26/20 11:29

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000540-02
Analysis Lot: 700826
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-02	224,624	3.06
Batch QCMS	EQ2000533-04	174,515	3.06
Batch QCDMS	EQ2000533-05	173,226	3.06
Batch QC	E2001015-003	166,464	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 12:47

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_024	**Lab Code:**	EQ2000540-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-03	229,585	3.07
16WW37-201019	E2001014-002	173,136	2.98

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001014
Project:	HS20101089	**Date Analyzed:**	10/26/20 13:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_026	**Lab Code:**	EQ2000540-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	700826
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000540-04	230,699	3.07

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

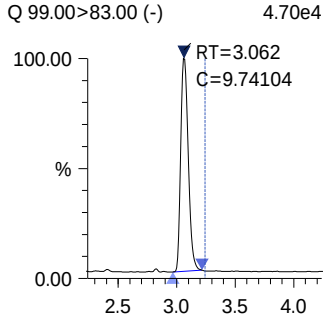
PERCHLORATE7

Date acquired: 10/26/2020 10:26:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 10:26:38 AM	206255	9.74104	20201026_007	3.062	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 10:26:38 AM	226473	1.00000	20201026_007	3.060	25.0000	1.0000	4

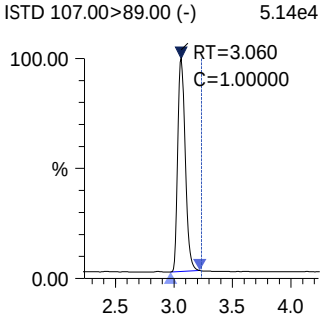
Perchlorate

Conc 9.74104
Area 206255



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 226473



ALS Group Houston

EQ2000533-01

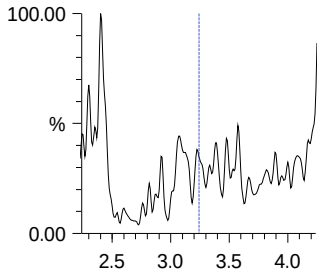
Date acquired: 10/26/2020 11:06:08 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_012.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-01	10/26/2020 11:06:08 AM	----	----	20201026_012	----	25.0000	1.0000	17
Sodium Perchlorate-18O4_IS	EQ2000533-01	10/26/2020 11:06:08 AM	248798	1.00000	20201026_012	3.064	25.0000	1.0000	17

Perchlorate

Conc ----
Area ----

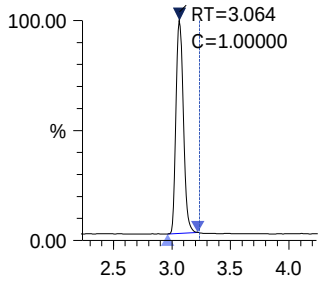
Q 99.00>83.00 (-) 2.84e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 248798

ISTD 107.00>89.00 (-) 5.74e4



ALS Group Houston

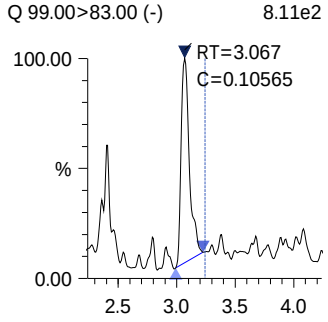
EQ2000533-02

Date acquired: 10/26/2020 11:13:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_013.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-02	10/26/2020 11:13:59 AM	3757	0.10565	20201026_013	3.067	25.0000	1.0000	18
Sodium Perchlorate-18O4_IS	EQ2000533-02	10/26/2020 11:13:59 AM	253069	1.00000	20201026_013	3.065	25.0000	1.0000	18

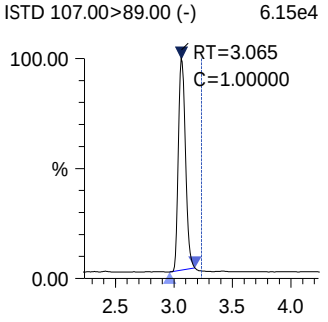
Perchlorate

Conc 0.10565
Area 3757



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 253069



ALS Group Houston

EQ2000533-03

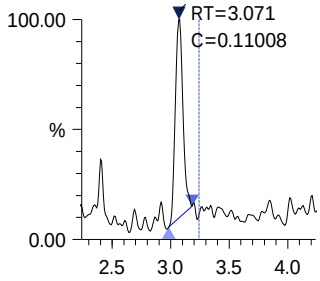
Date acquired: 10/26/2020 11:21:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_014.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-03	10/26/2020 11:21:53 AM	3884	0.11008	20201026_014	3.071	25.0000	1.0000	19
Sodium Perchlorate-18O4_IS	EQ2000533-03	10/26/2020 11:21:53 AM	254501	1.00000	20201026_014	3.065	25.0000	1.0000	19

Perchlorate

Conc 0.11008
Area 3884

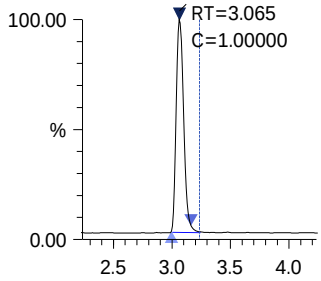
Q 99.00>83.00 (-) 9.36e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 254501

ISTD 107.00>89.00 (-) 6.16e4



ALS Group Houston

PERCHLORATE7

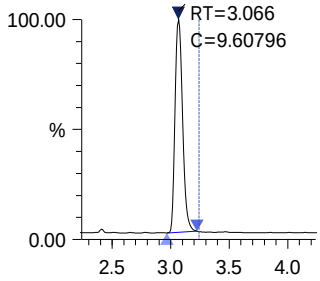
Date acquired: 10/26/2020 11:29:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 11:29:45 AM	201792	9.60796	20201026_015	3.066	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 11:29:45 AM	224624	1.00000	20201026_015	3.064	25.0000	1.0000	4

Perchlorate

Conc 9.60796
Area 201792

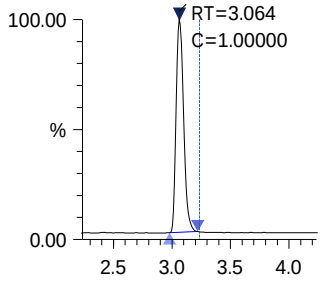
Q 99.00>83.00 (-) 4.61e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 224624

ISTD 107.00>89.00 (-) 5.13e4



ALS Group Houston

EQ2000533-04X10

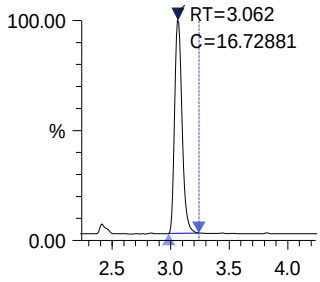
Date acquired: 10/26/2020 12:16:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_020.lcd
Vial: 20 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-04X10	10/26/2020 12:16:12 PM	272319	16.72881	20201026_020	3.062	25.0000	1.0000	20
Sodium Perchlorate-18O4_IS	EQ2000533-04X10	10/26/2020 12:16:12 PM	174515	1.00000	20201026_020	3.060	25.0000	1.0000	20

Perchlorate

Conc 16.72881
Area 272319

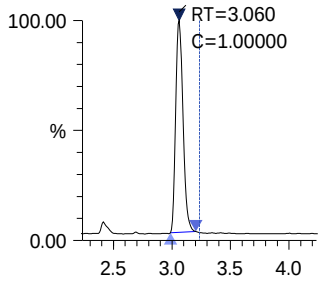
Q 99.00>83.00 (-) 6.29e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174515

ISTD 107.00>89.00 (-) 4.10e4



ALS Group Houston

EQ2000533-05X10

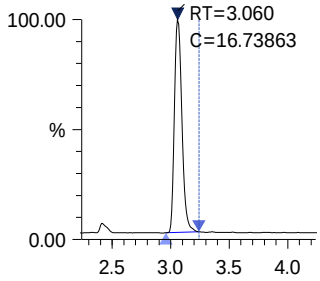
Date acquired: 10/26/2020 12:24:04 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_021.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 4

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000533-05X10	10/26/2020 12:24:04 PM	270465	16.73863	20201026_021	3.060	25.0000	1.0000	21
Sodium Perchlorate-18O4_IS	EQ2000533-05X10	10/26/2020 12:24:04 PM	173226	1.00000	20201026_021	3.058	25.0000	1.0000	21

Perchlorate

Conc 16.73863
Area 270465

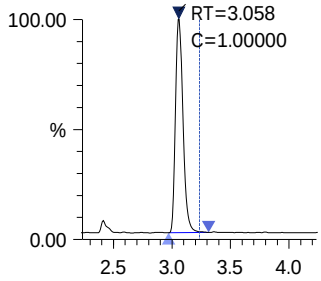
Q 99.00>83.00 (-) 6.19e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173226

ISTD 107.00>89.00 (-) 3.91e4



ALS Group Houston

PERCHLORATE7

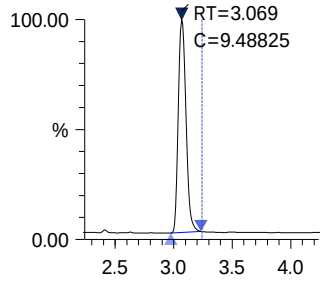
Date acquired: 10/26/2020 12:47:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_024.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 12:47:43 PM	203693	9.48825	20201026_024	3.069	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 12:47:43 PM	229585	1.00000	20201026_024	3.067	25.0000	1.0000	4

Perchlorate

Conc 9.48825
Area 203693

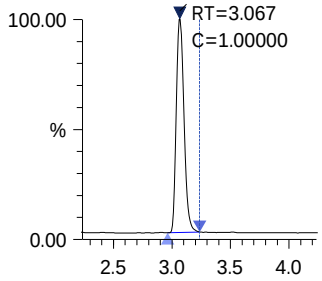
Q 99.00>83.00 (-) 4.54e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 229585

ISTD 107.00>89.00 (-) 5.07e4



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

November 10, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101123**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 12 sample(s) on Oct 22, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101123

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101123-01	16WW56-201021	Groundwater		21-Oct-2020 07:50	22-Oct-2020 09:10	☐
HS20101123-02	16RW11-201021	Groundwater		21-Oct-2020 08:45	22-Oct-2020 09:10	☐
HS20101123-03	16RW11-201021-FD	Groundwater		21-Oct-2020 08:45	22-Oct-2020 09:10	☐
HS20101123-04	16IW20-201021	Groundwater		21-Oct-2020 09:30	22-Oct-2020 09:10	☐
HS20101123-05	16WW40-201021	Groundwater		21-Oct-2020 10:15	22-Oct-2020 09:10	☐
HS20101123-06	16WW12-201021	Groundwater		21-Oct-2020 11:00	22-Oct-2020 09:10	☐
HS20101123-07	16RW04-201021	Groundwater		21-Oct-2020 11:45	22-Oct-2020 09:10	☐
HS20101123-08	16RW04-201021-FD	Groundwater		21-Oct-2020 11:45	22-Oct-2020 09:10	☐
HS20101123-09	16EW02-201021	Groundwater		21-Oct-2020 12:35	22-Oct-2020 09:10	☐
HS20101123-10	16EW06-201021	Groundwater		21-Oct-2020 13:30	22-Oct-2020 09:10	☐
HS20101123-11	16EW06-201021-FD	Groundwater		21-Oct-2020 13:30	22-Oct-2020 09:10	☐
HS20101123-12	Trip Blank-201021	Water	CG-092320-76	21-Oct-2020 00:00	22-Oct-2020 09:10	☐

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101123

Work Order Comments

- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.
- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GC Semivolatiles by Method RSK-175

Batch ID: R371594

Sample ID: 16WW56-201021 (HS20101123-01MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW56-201021 (HS20101123-01MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

Sample ID: HS20101079-03MS

- MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R371939

Sample ID: 16EW06-201021 (HS20101123-10)

- Lowest practical dilution for sample HS20101123-10 due to matrix.

Sample ID: 16EW06-201021-FD (HS20101123-11)

- Lowest practical dilution for sample HS20101123-11 due to matrix.

Batch ID: R371935

Sample ID: 16WW56-201021 (HS20101123-01MS)

- MS and/or MSD recovered outside control limits

WetChemistry by Method SW9056

Batch ID: R372041

Sample ID: 16WW12-201021 (HS20101123-06)

- Sample ran at 2X due to high concentration of Chloride and Sulfate

Sample ID: 16WW40-201021 (HS20101123-05)

- Sample ran at 2X due to high concentration of Chloride and Sulfate

Sample ID: HS20110128-11MSD

- MSD is for an unrelated sample

Batch ID: R371917

Sample ID: HS20101310-11MSD

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101123

CASE NARRATIVE

WetChemistry by Method SW9056

Batch ID: R371917

- MSD is for an unrelated sample (Sulfate)

Batch ID: R371188

Sample ID: 16EW02-201021 (HS20101123-09)

- Sample ran at 5X due to high concentration of Sulfate

Sample ID: 16WW56-201021 (HS20101123-01MS)

- The recovery of the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) associated with this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS/MSD may be due to sample matrix interference. (Bromide,Nitrogen, Nitrate (As N))

WetChemistry by Method SM2320B

Batch ID: R371123

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW56-201021
Collection Date: 21-Oct-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	03-Nov-2020 19:42
1,1-Dichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
1,2-Dichloroethane	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
cis-1,2-Dichloroethene	**20**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 19:42
Trichloroethene	**270**		**1.0**	**2.5**	**5.0**	**UG/L**	5	03-Nov-2020 20:46
Vinyl chloride	**2.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: 4-Bromofluorobenzene	*92.7*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: Dibromofluoromethane	*84.4*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*5*	*03-Nov-2020 20:46*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 14:23
Ethene	**0.00201**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 14:23
Methane	**0.00126**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 14:23
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**233**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**3.95**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	22-Oct-2020 21:03
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	22-Oct-2020 21:03
Sulfate	**1,190**		**20.0**	**50.0**	**50.0**	**mg/L**	100	03-Nov-2020 02:01
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW11-201021
Collection Date: 21-Oct-2020 08:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 21:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:07
1,2-Dichloroethane	**0.73**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
cis-1,2-Dichloroethene	**3.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:07
Trichloroethene	**3.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:07
Surr: 1,2-Dichloroethane-d4	*85.8*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:07*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW11-201021-FD
Collection Date: 21-Oct-2020 08:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	03-Nov-2020 21:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:28
1,2-Dichloroethane	**0.91**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
cis-1,2-Dichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:28
Trichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:28
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:28*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16IW20-201021
Collection Date: 21-Oct-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 21:49
1,1-Dichloroethene	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
1,2-Dichloroethane	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
cis-1,2-Dichloroethene	**170**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:49
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:49
Surr: 1,2-Dichloroethane-d4	*88.4*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: 4-Bromofluorobenzene	*93.8*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: Dibromofluoromethane	*85.3*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:49*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.00400**		**0.000144**	**0.000250**	**0.00100**	**mg/L**	1	26-Oct-2020 15:03
Ethene	**0.0309**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 15:03
Methane	**2.40**		**0.0107**	**0.0250**	**0.0500**	**mg/L**	100	26-Oct-2020 15:21
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**877**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:34
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**34.9**		**0.300**	**1.00**	**1.00**	**mg/L**	10	03-Nov-2020 02:19
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	22-Oct-2020 21:21
Sulfate	**165**		**2.00**	**5.00**	**5.00**	**mg/L**	10	03-Nov-2020 02:19
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastructure, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW40-201021
Collection Date: 21-Oct-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	04-Nov-2020 02:22
1,1-Dichloroethene	**7.5**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
1,2-Dichloroethane	**6.0**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
cis-1,2-Dichloroethene	**230**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 02:22
Trichloroethene	**1,700**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 02:43
Vinyl chloride	**6.3**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
Surr: 1,2-Dichloroethane-d4	*86.3*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: 1,2-Dichloroethane-d4	*85.2*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: 4-Bromofluorobenzene	*92.8*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: 4-Bromofluorobenzene	*94.4*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: Dibromofluoromethane	*85.6*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 02:43*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**6.97**		**0.0600**	**0.200**	**0.200**	**mg/L**	2	04-Nov-2020 09:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW12-201021
Collection Date: 21-Oct-2020 11:00

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	04-Nov-2020 06:14
1,1-Dichloroethene	**3.8**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
1,2-Dichloroethane	**5.5**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
cis-1,2-Dichloroethene	**67**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 06:14
Trichloroethene	**1,500**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 06:35
Vinyl chloride	**5.8**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: 1,2-Dichloroethane-d4	*89.0*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Dibromofluoromethane	*85.0*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 06:35*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**5.76**		**0.0600**	**0.200**	**0.200**	**mg/L**	2	04-Nov-2020 09:18
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW04-201021
Collection Date: 21-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	04-Nov-2020 06:56
1,1-Dichloroethene	**4.1**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	04-Nov-2020 06:56
cis-1,2-Dichloroethene	**140**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 06:56
Trichloroethene	**3,400**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 07:17
Vinyl chloride	**5.3**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: 4-Bromofluorobenzene	*90.2*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: 4-Bromofluorobenzene	*91.1*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: Dibromofluoromethane	*83.5*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: Dibromofluoromethane	*86.6*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 07:17*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**1.21**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	04-Nov-2020 09:36
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW04-201021-FD
Collection Date: 21-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	04-Nov-2020 07:38
1,1-Dichloroethene	**3.2**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	04-Nov-2020 07:38
cis-1,2-Dichloroethene	**140**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 07:38
Trichloroethene	**3,600**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 07:59
Vinyl chloride	**5.6**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
Surr: 1,2-Dichloroethane-d4	*85.9*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: 4-Bromofluorobenzene	*92.6*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: 4-Bromofluorobenzene	*89.5*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: Dibromofluoromethane	*82.5*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: Dibromofluoromethane	*83.3*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 07:59*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**1.19**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	04-Nov-2020 12:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW02-201021
Collection Date: 21-Oct-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	15	25	50	UG/L	50	04-Nov-2020 08:20
1,1-Dichloroethene	**110**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
1,2-Dichloroethane	**48**	J	**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
cis-1,2-Dichloroethene	**26,000**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 08:41
Methylene chloride	50	U	20	50	100	UG/L	50	04-Nov-2020 08:20
Trichloroethene	**26,000**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 08:41
Vinyl chloride	**51**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: 1,2-Dichloroethane-d4	*89.5*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: 4-Bromofluorobenzene	*89.5*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: Dibromofluoromethane	*86.2*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: Dibromofluoromethane	*86.2*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 08:41*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 15:12
Ethene	**0.00154**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 15:12
Methane	**0.00939**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 15:12
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**328**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:57
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**6.87**		**0.150**	**0.500**	**0.500**	**mg/L**	5	22-Oct-2020 21:39
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	22-Oct-2020 21:39
Sulfate	**1,380**		**10.0**	**25.0**	**25.0**	**mg/L**	50	03-Nov-2020 02:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW06-201021
Collection Date: 21-Oct-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	250	U	150	250	500	UG/L	500	04-Nov-2020 01:19
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
cis-1,2-Dichloroethene	**750**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:19
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 01:19
Trichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
Vinyl chloride	**510**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:19
Surr: 1,2-Dichloroethane-d4	*87.2*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: 4-Bromofluorobenzene	*89.8*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: Dibromofluoromethane	*85.6*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: Toluene-d8	*98.9*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 01:19*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW06-201021-FD
Collection Date: 21-Oct-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	500	U	150	500	500	UG/L	500	04-Nov-2020 01:40
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
cis-1,2-Dichloroethene	**520**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:40
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 01:40
Trichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
Vinyl chloride	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: 4-Bromofluorobenzene	*92.9*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: Dibromofluoromethane	*86.4*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 01:40*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101123
Sample ID: Trip Blank-201021 Lab ID:HS20101123-12
Collection Date: 21-Oct-2020 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 19:21
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 19:21
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: Dibromofluoromethane	*85.2*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 19:21*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371123 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			23 Oct 2020 02:20	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			23 Oct 2020 02:34	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			23 Oct 2020 02:57	1
Batch ID: R371188 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			22 Oct 2020 21:03	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			22 Oct 2020 21:21	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			22 Oct 2020 21:39	5
Batch ID: R371594 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			26 Oct 2020 14:23	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			26 Oct 2020 15:21	100
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			26 Oct 2020 15:03	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			26 Oct 2020 15:12	1
Batch ID: R371600 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			29 Oct 2020 18:36	1
HS20101123-02	16RW11-201021	21 Oct 2020 08:45			29 Oct 2020 18:36	1
HS20101123-03	16RW11-201021-FD	21 Oct 2020 08:45			29 Oct 2020 18:36	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			29 Oct 2020 18:36	1
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			29 Oct 2020 18:36	1
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			29 Oct 2020 18:36	1
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			29 Oct 2020 18:36	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			29 Oct 2020 18:36	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			29 Oct 2020 18:36	1
HS20101123-10	16EW06-201021	21 Oct 2020 13:30			29 Oct 2020 18:36	1
HS20101123-11	16EW06-201021-FD	21 Oct 2020 13:30			29 Oct 2020 18:36	1
Batch ID: R371917 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 02:01	100
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			03 Nov 2020 02:19	10
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			03 Nov 2020 02:37	50
Batch ID: R371935 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101123-12	Trip Blank-201021	21 Oct 2020 00:00			03 Nov 2020 19:21	1
Batch ID: R371935 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 20:46	5
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 19:42	1
HS20101123-02	16RW11-201021	21 Oct 2020 08:45			03 Nov 2020 21:07	1
HS20101123-03	16RW11-201021-FD	21 Oct 2020 08:45			03 Nov 2020 21:28	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			03 Nov 2020 21:49	1

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020 **DATES REPORT**
WorkOrder: HS20101123

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 02:43	25
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 02:22	5
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 06:35	25
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 06:14	5
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 07:17	50
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 06:56	5
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 07:59	50
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 07:38	5
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			04 Nov 2020 08:41	500
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			04 Nov 2020 08:20	50
HS20101123-10	16EW06-201021	21 Oct 2020 13:30			04 Nov 2020 01:19	500
HS20101123-11	16EW06-201021-FD	21 Oct 2020 13:30			04 Nov 2020 01:40	500
Batch ID: R372041 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 09:00	2
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 09:18	2
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 09:36	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 12:37	1
Batch ID: R372266 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			09 Nov 2020 20:25	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			09 Nov 2020 20:25	1
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			09 Nov 2020 20:25	1
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			09 Nov 2020 20:25	1
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			09 Nov 2020 20:25	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			09 Nov 2020 20:25	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			09 Nov 2020 20:25	1

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:00**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000250	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000250	0.000500								U

LCS Sample ID: **LCS-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:08**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0204	0.00100	0.01804	0	113	75 - 125				
Ethene	0.0186	0.00100	0.0168	0	111	75 - 125				
Methane	0.00935	0.000500	0.009647	0	96.9	75 - 125				

LCSD Sample ID: **LCSD-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:19**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0200	0.00100	0.01804	0	111	75 - 125	0.02037	1.7	30	
Ethene	0.0179	0.00100	0.0168	0	107	75 - 125	0.01859	3.66	30	
Methane	0.0105	0.000500	0.009647	0	109	75 - 125	0.009349	11.8	30	

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **26-Oct-2020 14:31**
Client ID: **16WW56-201021** Run ID: **FID-4_371594** SeqNo: **5807468** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0245	0.00100	0.01804	0	136	75 - 125				S
Ethene	0.0261	0.00100	0.0168	0.002009	144	75 - 125				S
Methane	0.0131	0.000500	0.009647	0.001258	123	75 - 125				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **26-Oct-2020 13:16**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0111	0.00100	0.01804	0	61.4	75 - 125				S
Ethene	0.0124	0.00100	0.0168	0.001226	66.7	75 - 125				S
Methane	0.00691	0.000500	0.009647	0.003527	35.1	75 - 125				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 14:49**
Client ID: **16WW56-201021** Run ID: **FID-4_371594** SeqNo: **5807469** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0251	0.00100	0.01804	0	139	75 - 125	0.02450	2.53	30	S
Ethene	0.0267	0.00100	0.0168	0.002009	147	75 - 125	0.02614	2.06	30	S
Methane	0.0123	0.000500	0.009647	0.001258	114	75 - 125	0.01312	6.57	30	

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 13:34**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807464** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0261	0.00100	0.01804	0	144	75 - 125	0.01109	80.6	30	SR
Ethene	0.0261	0.00100	0.0168	0.001226	148	75 - 125	0.01244	71	30	SR
Methane	0.0133	0.000500	0.009647	0.003527	102	75 - 125	0.006909	63.5	30	R

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371935 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 18:18**
Client ID: Run ID: **VOA6_371935** SeqNo: **5815257** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.1*	*1.0*	*50*	*0*	*86.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.11*	*1.0*	*50*	*0*	*90.2*	*85 - 114*				
Surr: Dibromofluoromethane	*41.82*	*1.0*	*50*	*0*	*83.6*	*80 - 119*				
Surr: Toluene-d8	*50.18*	*1.0*	*50*	*0*	*100*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 17:15**
Client ID: Run ID: **VOA6_371935** SeqNo: **5815256** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.19	1.0	20	0	96.0	80 - 119				
1,1-Dichloroethene	19.03	1.0	20	0	95.2	71 - 131				
1,2-Dichloroethane	19.48	1.0	20	0	97.4	73 - 128				
cis-1,2-Dichloroethene	17.85	1.0	20	0	89.3	78 - 123				
Methylene chloride	17.33	2.0	20	0	86.6	74 - 124				
Trichloroethene	19.91	1.0	20	0	99.6	79 - 123				
Vinyl chloride	19.48	1.0	20	0	97.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.1*	*1.0*	*50*	*0*	*100*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.89*	*1.0*	*50*	*0*	*99.8*	*85 - 114*				
Surr: Dibromofluoromethane	*47.06*	*1.0*	*50*	*0*	*94.1*	*80 - 119*				
Surr: Toluene-d8	*47.74*	*1.0*	*50*	*0*	*95.5*	*89 - 112*				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371935 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101123-01MS** Units: **UG/L** Analysis Date: **03-Nov-2020 20:04**
Client ID: **16WW56-201021** Run ID: **VOA6_371935** SeqNo: **5815262** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	25.37	1.0	20	0	127	80 - 119				S
1,1-Dichloroethene	24.98	1.0	20	1.516	117	71 - 131				
1,2-Dichloroethane	24.02	1.0	20	0.663	117	73 - 128				
cis-1,2-Dichloroethene	71.36	1.0	20	19.57	259	78 - 123				S
Methylene chloride	20.14	2.0	20	0	101	74 - 124				
Trichloroethene	405	1.0	20	216.9	940	79 - 123				SEO
Vinyl chloride	29.58	1.0	20	2.82	134	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.67*	*1.0*	*50*	*0*	*91.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.28*	*1.0*	*50*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*44.14*	*1.0*	*50*	*0*	*88.3*	*80 - 119*				
Surr: Toluene-d8	*50.31*	*1.0*	*50*	*0*	*101*	*89 - 112*				

MSD Sample ID: **HS20101123-01MSD** Units: **UG/L** Analysis Date: **03-Nov-2020 20:25**
Client ID: **16WW56-201021** Run ID: **VOA6_371935** SeqNo: **5815263** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	23.7	1.0	20	0	118	80 - 119	25.37	6.84	20	
1,1-Dichloroethene	23.91	1.0	20	1.516	112	71 - 131	24.98	4.4	20	
1,2-Dichloroethane	24.09	1.0	20	0.663	117	73 - 128	24.02	0.278	20	
cis-1,2-Dichloroethene	72.84	1.0	20	19.57	266	78 - 123	71.36	2.06	20	S
Methylene chloride	20.25	2.0	20	0	101	74 - 124	20.14	0.534	20	
Trichloroethene	383.9	1.0	20	216.9	835	79 - 123	405	5.36	20	SEO
Vinyl chloride	29.23	1.0	20	2.82	132	58 - 137	29.58	1.19	20	
Surr: 1,2-Dichloroethane-d4	*45.21*	*1.0*	*50*	*0*	*90.4*	*81 - 118*	*45.67*	*1.01*	*20*	
Surr: 4-Bromofluorobenzene	*47.96*	*1.0*	*50*	*0*	*95.9*	*85 - 114*	*47.28*	*1.43*	*20*	
Surr: Dibromofluoromethane	*45.21*	*1.0*	*50*	*0*	*90.4*	*80 - 119*	*44.14*	*2.39*	*20*	
Surr: Toluene-d8	*49.84*	*1.0*	*50*	*0*	*99.7*	*89 - 112*	*50.31*	*0.939*	*20*	

The following samples were analyzed in this batch: HS20101123-01 HS20101123-02 HS20101123-03 HS20101123-04 HS20101123-12

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **04-Nov-2020 00:37**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.55*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.35*	*1.0*	*50*	*0*	*90.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.78*	*1.0*	*50*	*0*	*85.6*	*80 - 119*				
Surr: Toluene-d8	*50.97*	*1.0*	*50*	*0*	*102*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 23:55**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.11	1.0	20	0	95.6	80 - 119				
1,1-Dichloroethene	19.02	1.0	20	0	95.1	71 - 131				
1,2-Dichloroethane	18.08	1.0	20	0	90.4	73 - 128				
cis-1,2-Dichloroethene	18.12	1.0	20	0	90.6	78 - 123				
Methylene chloride	17.62	2.0	20	0	88.1	74 - 124				
Trichloroethene	17.96	1.0	20	0	89.8	79 - 123				
Vinyl chloride	17.9	1.0	20	0	89.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.2*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.13*	*1.0*	*50*	*0*	*98.3*	*85 - 114*				
Surr: Dibromofluoromethane	*49.1*	*1.0*	*50*	*0*	*98.2*	*80 - 119*				
Surr: Toluene-d8	*48.72*	*1.0*	*50*	*0*	*97.4*	*89 - 112*				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20101123-05MS** Units: **UG/L** Analysis Date: **04-Nov-2020 03:04**
Client ID: **16WW40-201021** Run ID: **VOA6_371939** SeqNo: **5815470** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	553.9	25	500	0	111	80 - 119				
1,1-Dichloroethene	599.3	25	500	0	120	71 - 131				
1,2-Dichloroethane	508.3	25	500	0	102	73 - 128				
cis-1,2-Dichloroethene	765.8	25	500	239.8	105	78 - 123				
Methylene chloride	500.5	50	500	0	100	74 - 124				
Trichloroethene	2239	25	500	1724	103	79 - 123				
Vinyl chloride	650.7	25	500	0	130	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1104*	*25*	*1250*	*0*	*88.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1183*	*25*	*1250*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*1124*	*25*	*1250*	*0*	*89.9*	*80 - 119*				
Surr: Toluene-d8	*1251*	*25*	*1250*	*0*	*100*	*89 - 112*				

MSD Sample ID: **HS20101123-05MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 03:25**
Client ID: **16WW40-201021** Run ID: **VOA6_371939** SeqNo: **5815471** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	554.7	25	500	0	111	80 - 119	553.9	0.148	20	
1,1-Dichloroethene	551.9	25	500	0	110	71 - 131	599.3	8.24	20	
1,2-Dichloroethane	565.3	25	500	0	113	73 - 128	508.3	10.6	20	
cis-1,2-Dichloroethene	721.8	25	500	239.8	96.4	78 - 123	765.8	5.91	20	
Methylene chloride	470.7	50	500	0	94.1	74 - 124	500.5	6.15	20	
Trichloroethene	2193	25	500	1724	93.8	79 - 123	2239	2.1	20	
Vinyl chloride	578.2	25	500	0	116	58 - 137	650.7	11.8	20	
Surr: 1,2-Dichloroethane-d4	*1128*	*25*	*1250*	*0*	*90.3*	*81 - 118*	*1104*	*2.17*	*20*	
Surr: 4-Bromofluorobenzene	*1180*	*25*	*1250*	*0*	*94.4*	*85 - 114*	*1183*	*0.206*	*20*	
Surr: Dibromofluoromethane	*1079*	*25*	*1250*	*0*	*86.3*	*80 - 119*	*1124*	*4.11*	*20*	
Surr: Toluene-d8	*1231*	*25*	*1250*	*0*	*98.5*	*89 - 112*	*1251*	*1.65*	*20*	

The following samples were analyzed in this batch:

HS20101123-05	HS20101123-06	HS20101123-07	HS20101123-08
HS20101123-09	HS20101123-10	HS20101123-11	

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371123 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 01:56**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796162** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 02:04**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796163** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1019	5.00	1000	0	102	85 - 115				

LCSD Sample ID: **LCSD3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 02:14**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796164** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1010	5.00	1000	0	101	85 - 115	1019	0.838	20	

DUP Sample ID: **HS20101123-01DUP** Units: **mg/L** Analysis Date: **23-Oct-2020 02:26**
Client ID: **16WW56-201021** Run ID: **ManTech01_371123** SeqNo: **5796166** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	235.3	5.00					232.9	0.995	20	

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371188 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-102220** Units: **mg/L** Analysis Date: **22-Oct-2020 23:45**
Client ID: Run ID: **ICS-Integrion_371188** SeqNo: **5797283** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U

LCS Sample ID: **LCS-102220** Units: **mg/L** Analysis Date: **23-Oct-2020 00:03**
Client ID: Run ID: **ICS-Integrion_371188** SeqNo: **5797284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.991	0.100	4	0	99.8	80 - 120				
Nitrogen, Nitrate (As N)	4.133	0.100	4	0	103	80 - 120				

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **22-Oct-2020 21:57**
Client ID: **16WW56-201021** Run ID: **ICS-Integrion_371188** SeqNo: **5797279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	6.38	0.100	2	3.955	121	80 - 120				S
Nitrogen, Nitrate (As N)	3.169	0.100	2	0	158	80 - 120				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **22-Oct-2020 22:15**
Client ID: **16WW56-201021** Run ID: **ICS-Integrion_371188** SeqNo: **5797280** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	6.364	0.100	2	3.955	120	80 - 120	6.38	0.256	20	S
Nitrogen, Nitrate (As N)	2.904	0.100	2	0	145	80 - 120	3.169	8.7	20	S

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371917 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:19**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814879** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:37**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814880** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.828	0.100	4	0	95.7	80 - 120				
Sulfate	18.37	0.500	20	0	91.8	80 - 120				

MS Sample ID: **HS20101310-11MS** Units: **mg/L** Analysis Date: **03-Nov-2020 06:49**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814901** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.111	0.100	2	1.274	91.9	80 - 120				
Sulfate	137.5	0.500	10	128.6	89.3	80 - 120				EO

MSD Sample ID: **HS20101310-11MSD** Units: **mg/L** Analysis Date: **03-Nov-2020 07:07**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814902** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.191	0.100	2	1.274	95.9	80 - 120	3.111	2.53	20	
Sulfate	135.3	0.500	10	128.6	66.7	80 - 120	137.5	1.66	20	SEO

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R372041 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110320** Units: **mg/L** Analysis Date: **03-Nov-2020 13:46**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817805** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-110320** Units: **mg/L** Analysis Date: **03-Nov-2020 14:04**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817806** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.905	0.100	4	0	97.6	80 - 120				

MS Sample ID: **HS20110128-11MS** Units: **mg/L** Analysis Date: **04-Nov-2020 19:14**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817837** PrepDate: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	9.856	0.200	4	6.126	93.2	80 - 120				

MSD Sample ID: **HS20110128-11MSD** Units: **mg/L** Analysis Date: **04-Nov-2020 19:32**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817838** PrepDate: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	11.23	0.200	4	6.126	127	80 - 120	9.856	13	20	S

The following samples were analyzed in this batch: HS20101123-05 HS20101123-06 HS20101123-07 HS20101123-08

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101123**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

ALS Houston, US Date: 10-Nov-20

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101123

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	Sub
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	WET209
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	VOA091
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	RSK008
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	Sub

ALS Houston, US Date: 10-Nov-20

Sample Receipt Checklist

Work Order ID: HS20101123 **Date/Time Received:** **22-Oct-2020 09:10**

Client Name: CBI-Houston **Received by:** **Jared R. Makan**

Completed By:	/S/ Paresh M. Giga	22-Oct-2020 12:58	**Reviewed by:**	/S/ RJ Modashia	22-Oct-2020 19:41
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	2.1C U/C	IR31
Cooler(s)/Kit(s):	44257	
Date/Time sample(s) sent to storage:	10/22/2020 13:20	

Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Head space
16RW11-201021 All vials
16RW11-201021-FD Vials 2 & 3

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. 501032
Job: **LHAAP 16 October 2020**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW56-201021	WG	10/21/20/0750		10	X	X	X	X	X	X					
16WW56-201021-MS	WG	10/21/20/0750		10	X	X	X	X	X	X					
16WW56-201021-MSD	WG	10/21/20/0750		10	X	X	X	X	X	X					
16RW11-201021	WG	10/21/20/0845		4	X					X					
16RW11-201021-FD	WG	10/21/20/0845		4	X					X					
16IW20-201021	WG	10/21/20/0930		10	X	X	X	X	X	X					
16WW40-201021	WG	10/21/20/1015		7	X	X			X	X					
16WW12-201021	WG	10/21/20/1100		7	X	X			X	X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/21/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Hussain	10/22/20	09:10							

Remarks: Cooler 442571 1431
Temp 2.1°C CFU

HS20101123

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: APTIM LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. 511032
Job: **LHAAP 16 October 2020**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Time	Sample Matrix	Date /	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
						Analyses										
16RW04-201021		WG	10/21/20/1145		7	X	X			X	X					
16RW04-201021-FD		WG	10/21/20/1145		7	X	X			X	X					
16EW02-201021		WG	10/21/20/1235		10	X	X	X	X	X	X					
16EW06-201021		WG	10/21/20/1330		4	X					X					
16EW06-201021-FD		WG	10/21/20/1330		4	X					X					
TRIP BLANK-201021		W	10/21/20		2	X										

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101123

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/21/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
S. Mureen	10/22/20	09:10							

Remarks:

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

44257

CUSTODY SEAL

Date: 10/22/20 Time: 1430
Name: Scott Beesinger
Company: BHMTS

Seal Broken By:
Date: 10/22/20

44257 OCT 2

Must Deliver Next Business Day
Time and Tempature Sensitive!

44257

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 29SEP20
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 28x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5856
REF: LHAAP 16 - BO 74064 - RJ

RMA:

FedEx Express

FedEx
TRK# 0221 1891 8880 8733

THU - 22 OCT 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

#475873 10/21 SSEJ2/A27E/2766

October 29, 2020 Service Request No:E2001035

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101123

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001035.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001035
Project:	HS20101123	**Date Received:**	10/22/20
Sample Matrix:	L		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eleven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Due to the sample matrix, samples E2001035-010/011 had to be prepped as solids (samples viscous).

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000537: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS, DLCS, MS, & DMS recoveries are within QC limits.

EQ2000548: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001035
Project: HS20101123

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001035-001	16WW56-201021	10/21/2020	0750
E2001035-002	16RW11-201021	10/21/2020	0845
E2001035-003	16RW11-201021-FD	10/21/2020	0845
E2001035-004	16IW20-201021	10/21/2020	0930
E2001035-005	16WW40-201021	10/21/2020	1015
E2001035-006	16WW12-201021	10/21/2020	1100
E2001035-007	16RW04-201021	10/21/2020	1145
E2001035-008	16RW04-201021-FD	10/21/2020	1145
E2001035-009	16EW02-201021	10/21/2020	1235
E2001035-010	16EW06-201021	10/21/2020	1330
E2001035-011	16EW06-201021-FD	10/21/2020	1330

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001035-001	16WW56-201021	Ground Water	10/21/20 0750	**IV**
E2001035-002	16RW11-201021	Ground Water	10/21/20 0845	**IV**
E2001035-003	16RW11-201021-FD	Ground Water	10/21/20 0845	**IV**
E2001035-004	16IW20-201021	Ground Water	10/21/20 0930	**IV**
E2001035-005	16WW40-201021	Ground Water	10/21/20 1015	**IV**
E2001035-006	16WW12-201021	Ground Water	10/21/20 1100	**IV**
E2001035-007	16RW04-201021	Ground Water	10/21/20 1145	**IV**
E2001035-008	16RW04-201021-FD	Ground Water	10/21/20 1145	**IV**
E2001035-009	16EW02-201021	Ground Water	10/21/20 1235	**IV**
E2001035-010	16EW06-201021	Misc. Solid	10/21/20 1330	**IV**
E2001035-011	16EW06-201021-FD	Misc. Solid	10/21/20 1330	**IV**

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14995**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20101123
TSR: Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	SUB_Perch-6850			05 Nov 2020
2.	**HS20101123-02**	**16RW11-201021**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
3.	**HS20101123-03**	**16RW11-201021-FD**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
4.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	SUB_Perch-6850			05 Nov 2020
5.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	SUB_Perch-6850			05 Nov 2020
6.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	SUB_Perch-6850			05 Nov 2020
7.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
8.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
9.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14995**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		05 Nov 2020
10.	**HS20101123-10**	**16EW06-201021**	**Groundwater**	**21 Oct 2020 13:30**
		SUB_Perch-6850		05 Nov 2020
11.	**HS20101123-11**	**16EW06-201021-FD**	**Groundwater**	**21 Oct 2020 13:30**
		SUB_Perch-6850		05 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 10/22/20 1645

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1824

Date/Time Received: 10/22/20 Initials: CH

Date/Time Logged in: 10/22/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		10/22/20	1645	CH	3.3	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001035-001	16WW56-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001035-002	16RW11-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001035-003	16RW11-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001035-004	16IW20-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001035-005	16WW40-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001035-006	16WW12-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001035-007	16RW04-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001035-008	16RW04-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001035-009	16EW02-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001036-001	16WW27-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001036-002	16WW27-201022-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001036-003	16WW43-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001036-004	16WW13-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001036-005	16WW42-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001036-006	16RW02-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001036-007	16RW05-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001036-008	16EW03-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2000537-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000537-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000537-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000537-04	16WW56-201021 MS	.01	6850/ClO4 DOD			Liquid	10mL	
22	EQ2000537-05	16WW56-201021 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000537-02	1.00µL	EQ2000537-03	1.00µL	EQ2000537-04	1.00µL	EQ2000537-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001035-001	100.00µL	E2001035-002	100.00µL	E2001035-003	100.00µL	E2001035-004	100.00µL	E2001035-005	100.00µL	E2001035-006	100.00µL
E2001035-007	100.00µL	E2001035-008	100.00µL	E2001035-009	100.00µL	E2001036-001	100.00µL	E2001036-002	100.00µL	E2001036-003	100.00µL
E2001036-004	100.00µL	E2001036-005	100.00µL	E2001036-006	100.00µL	E2001036-007	100.00µL	E2001036-008	100.00µL	EQ2000537-01	100.00µL
EQ2000537-02	100.00µL	EQ2000537-03	100.00µL	EQ2000537-04	100.00µL	EQ2000537-05	100.00µL				

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

Preparation Steps

Step: Preparation
Started: 10/26/20 14:30
Finished: 10/26/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/27/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

Prep Run#: 368660 **Prep WorkFlow:** Gen CLO4 **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/28/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001025-001	2020-BH-1-1	.01	6850/ClO4			Soil	1.006g	
2	E2001025-002	2020-BH-1-7	.01	6850/ClO4			Soil	1.040g	
3	E2001035-010	16EW06-201021	.02	6850/ClO4 DOD			Misc. Solid	1.003g	
4	E2001035-011	16EW06-201021-FD	.02	6850/ClO4 DOD			Misc. Solid	1.066g	
5	E2001036-009	16EW07-201022	.02	6850/ClO4 DOD			Misc. Solid	1.070g	
6	EQ2000548-01	MB		6850/ClO4 DOD			Solid	1.047g	
7	EQ2000548-02	LCS		6850/ClO4 DOD			Solid	0.980g	
8	EQ2000548-03	DLCS		6850/ClO4 DOD			Solid	0.977g	
9	EQ2000548-04	2020-BH-1-1 MS	.01	6850/ClO4			Solid	0.994g	
10	EQ2000548-05	2020-BH-1-1 DMS	.01	6850/ClO4			Solid	0.985g	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL EQ2000548-05 100.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001025-001 100.00µL E2001025-002 100.00µL E2001035-010 100.00µL E2001035-011 100.00µL E2001036-009 100.00µL EQ2000548-01 100.00µL
EQ2000548-01 100.00µL EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL
EQ2000548-05 100.00µL

Preparation Steps

Step: Extraction
Started: 10/28/20 14:30
Finished: 10/28/20 15:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/29/2020

Preparation Information Benchsheet

Prep Run#: 368660
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: Gen CLO4
Prep Method: Method

Status: Prepped
Prep Date/Time: 10/28/20 14:30

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.309**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:43	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021	**Units:**	µg/L
Lab Code:	E2001035-002	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:51	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-003	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:59	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0930
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16IW20-201021	**Units:**	µg/L
Lab Code:	E2001035-004	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/28/20 13:29	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1015
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW40-201021	**Units:**	µg/L
Lab Code:	E2001035-005	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.240**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:23	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1100
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW12-201021	**Units:**	µg/L
Lab Code:	E2001035-006	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**18.5**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:31	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021	**Units:**	µg/L
Lab Code:	E2001035-007	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:38	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-008	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:46	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1235
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW02-201021	**Units:**	µg/L
Lab Code:	E2001035-009	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:54	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021	**Units:**	µg/Kg
Lab Code:	E2001035-010	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.997	0.750	0.300	1	10/28/20	10/28/20 18:09	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021-FD	**Units:**	µg/Kg
Lab Code:	E2001035-011	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.938	0.750	0.300	1	10/28/20	10/28/20 18:17	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000537-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:04	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/Kg
Lab Code:	EQ2000548-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.955	0.750	0.300	1	10/28/20	10/28/20 17:14	368660	701275	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123
Sample Matrix: Ground Water

Service Request: E2001035
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: As Received

Extraction Lot: 368462

	Lab Control Sample EQ2000537-02			Duplicate Lab Control Sample EQ2000537-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.101	0.100	101	0.104	0.100	104	84 - 119	3	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:12	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:20	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20
Sample Matrix:	Misc. Solid		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/Kg
Prep Method:	Method	**Basis:**	As Received
		Extraction Lot:	368660

	Lab Control Sample EQ2000548-02			Duplicate Lab Control Sample EQ2000548-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	103	102	101	109	102	106	84 - 121	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**103**		1.02	0.765	0.307	1	10/28/20	10/28/20 17:22	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**109**		1.02	0.768	0.308	1	10/28/20	10/28/20 17:30	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Analytical Method: 6850

		16WW56-201021MS				16WW56-201021DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000537-04				EQ2000537-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.309	0.407	0.100	98		0.407	0.100	98	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-04	**Basis:**	As Received
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:28	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-05	**Basis:**	As Received
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:35	368462	701198	

Initial Calibration

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20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte	Curve Fit	Weighting		
Perchlorate	**Linear**	**Equal**	**R2 = 0.9997655579102110**	**Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

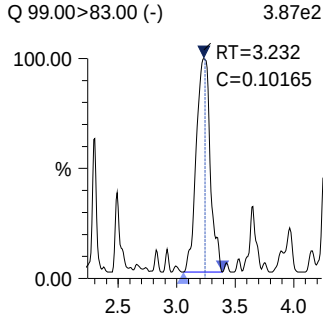
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

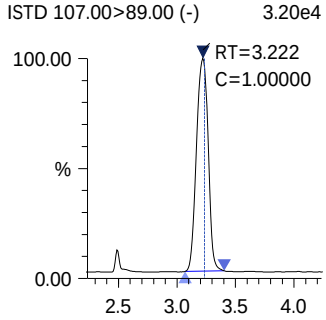
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

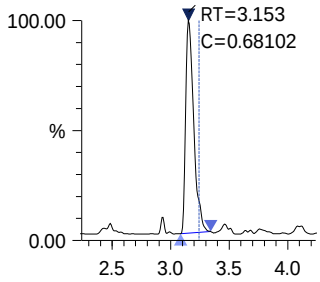
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

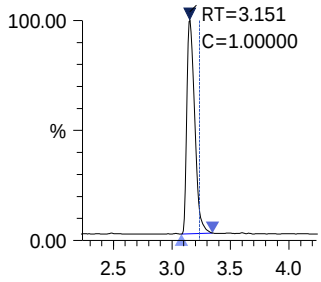
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

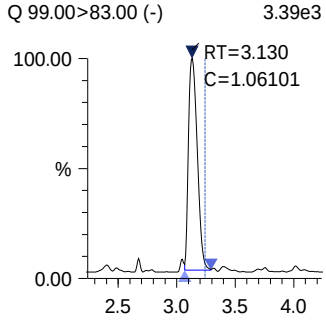
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

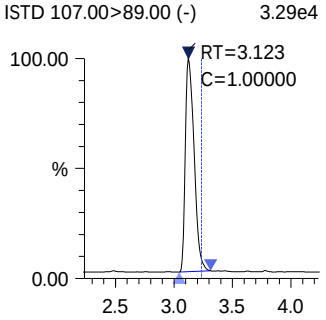
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

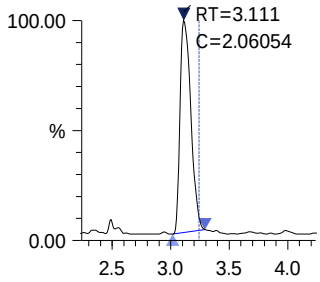
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

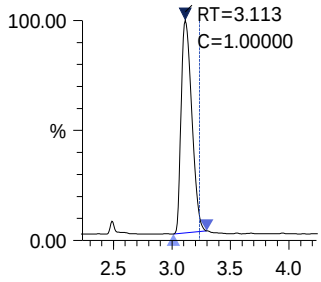
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

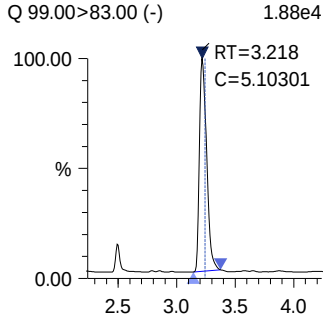
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

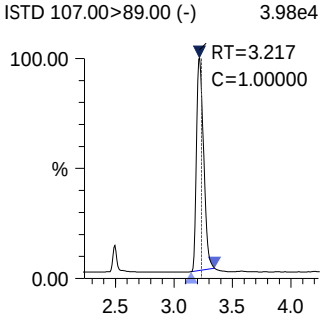
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

PERCHLORATE6

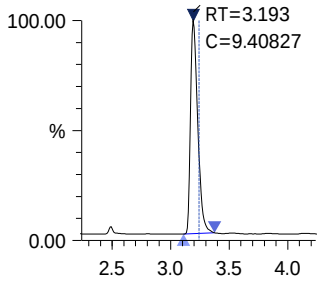
Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

Perchlorate

Conc 9.40827
Area 136097

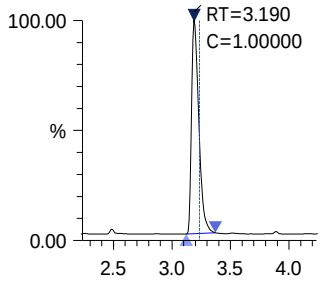
Q 99.00>83.00 (-) 3.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693

ISTD 107.00>89.00 (-) 3.55e4



ALS Group Houston

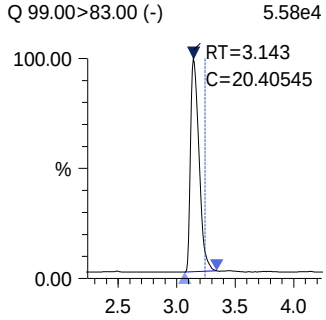
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

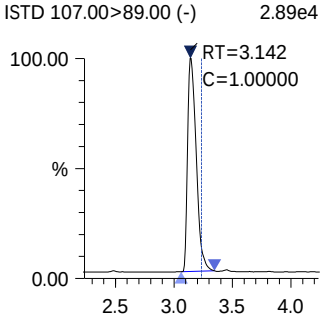
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

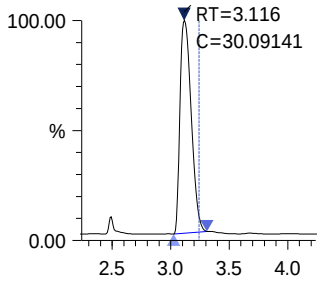
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

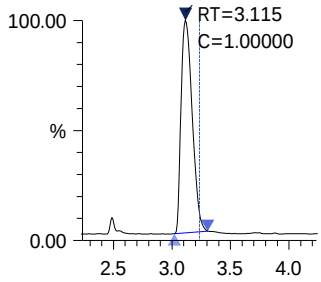
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

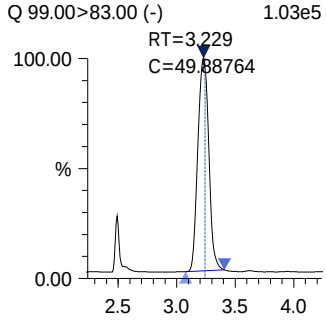
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

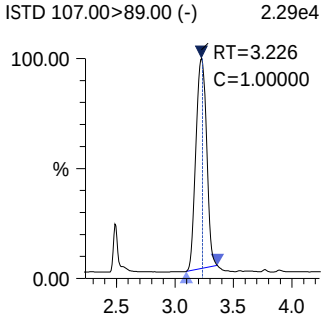
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

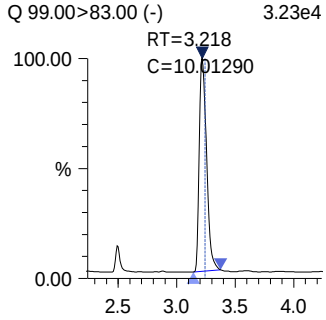
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

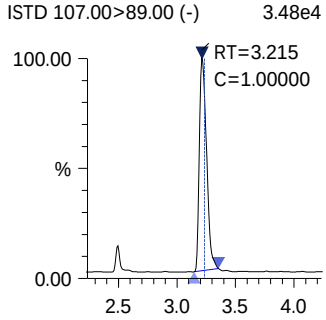
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒		10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 13:07
26	E2000949-001		20201026_027	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:48
27	E2000949-002		20201026_028	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:56
28	EQ2000537-01		20201026_029	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:04
29	EQ2000537-02		20201026_030	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:12
30	EQ2000537-03		20201026_031	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:20
31	EQ2000537-04		20201026_032	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:28
32	EQ2000537-05		20201026_033	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:35
33	E2001035-001		20201026_034	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:43
34	E2001035-002		20201026_035	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:51
35	E2001035-003		20201026_036	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:59
36	PERCHLORATE7		20201026_037	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 15:07
37	E2001035-004		20201026_038	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:15
38	E2001035-005		20201026_039	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:23
39	E2001035-006		20201026_040	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:31
40	E2001035-007		20201026_041	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:38
41	E2001035-008		20201026_042	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:46
42	E2001035-009		20201026_043	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:54
43	E2001036-001		20201026_044	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:02
44	E2001036-002		20201026_045	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:10
45	E2001036-003		20201026_046	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:18
46	E2001036-004		20201026_047	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:26
47	PERCHLORATE7		20201026_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 16:34
48	E2001036-005		20201026_049	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:42
49	E2001036-006		20201026_050	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:49
50	E2001036-007		20201026_051	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:57
51	E2001036-008		20201026_052	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:05
52	PERCHLORATE7		20201026_053	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 17:13
53	EQ2000538-01		20201026_054	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:21
54	EQ2000538-02		20201026_055	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:29
55	EQ2000538-03		20201026_056	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:37
56	E2001028-001		20201026_057	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:45
57	E2001028-002		20201026_058	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:52
58	E2001028-003		20201026_059	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:00
59	E2001028-004		20201026_060	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:08
60	E2001028-005		20201026_061	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:16
61	E2001028-006		20201026_062	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:24

20201026

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
62	E2001028-007		20201026_063	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:32
63	PERCHLORATE7		20201026_064	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 18:40
64	E2001028-008		20201026_065	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:48
65	E2001028-009		20201026_066	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:55
66	E2001028-010		20201026_067	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:03
67	E2001028-011		20201026_068	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:11
68	E2001028-012		20201026_069	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:19
69	E2001028-013		20201026_070	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:27
70	E2001028-014		20201026_071	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:35
71	E2001028-015		20201026_072	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:43
72	E2001034-014		20201026_073	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:51
73	PERCHLORATE7		20201026_074	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 19:59
74								
75								
76								

20201028

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201028_001	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:12
2	null		20201028_002	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:17
3	IB		20201028_003	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:23
4	IB		20201028_004	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:31
5	LODV		20201028_005	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:38
6	ICS		20201028_006	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:46
7	PERCHLORATE7		20201028_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 9:54
8	E2001035-004X2		20201028_008	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:19
9	E2001036-008X2		20201028_009	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:27
10	E2001028-009X100		20201028_010	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:35
11	E2001028-010X50		20201028_011	Perchlorate6850b.lcm	x50	☒		10/28/2020 11:43
12	E2001028-011X100		20201028_012	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:51
13	E2001028-013X100		20201028_014	Perchlorate6850b.lcm	x100	☒		10/28/2020 12:06
14	PERCHLORATE7		20201028_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 12:14
15	E2000949-002X2		20201028_017	Perchlorate6850b.lcm	x2	☒		10/28/2020 12:57
16	E2001028-011X200		20201028_018	Perchlorate6850b.lcm	x200	☒		10/28/2020 13:05
17	E2001028-012X100		20201028_019	Perchlorate6850b.lcm	x100	☒		10/28/2020 13:13
18	PERCHLORATE7		20201028_020	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:21
19	E2001035-004		20201028_021	Perchlorate6850b.lcm	1x	☒		10/28/2020 13:29
20	PERCHLORATE7		20201028_022	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:37
21	PERCHLORATE7		20201028_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 17:06
22	EQ2000548-01		20201028_024	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:14
23	EQ2000548-02		20201028_025	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:22
24	EQ2000548-03		20201028_026	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:30
25	EQ2000548-04		20201028_027	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:38
26	EQ2000548-05		20201028_028	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:46
27	E2001025-001		20201028_029	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:53
28	E2001025-002		20201028_030	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:01
29	E2001035-010		20201028_031	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:09
30	E2001035-011		20201028_032	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:17
31	E2001036-009		20201028_033	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:25
32	PERCHLORATE7		20201028_034	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 18:33
33								
34								
35								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_037

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	NA	NA	NA	4.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_048

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_053

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.52	NA	NA	NA	-4.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	NA	NA	NA	-2.0	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_020

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_022

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_023

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701275
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.93	NA	NA	NA	-0.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	10/20/20
File ID:	I:\LCMS01\DATA\20201028\20201028_034	**Calibration ID:**	EC2000045
		Analysis Lot:	701275
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 13:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_026	**Lab Code:**	EQ2000550-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-01	230,699	3.07
Method Blank	EQ2000537-01	251,836	3.06
Lab Control Sample	EQ2000537-02	252,875	3.06
Duplicate Lab Control Sample	EQ2000537-03	250,027	3.06
16WW56-201021MS	EQ2000537-04	114,572	3.04
16WW56-201021DMS	EQ2000537-05	116,922	3.04
16WW56-201021	E2001035-001	119,976	3.03
16RW11-201021	E2001035-002	85,003	3.05
16RW11-201021-FD	E2001035-003	85,286	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 15:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_037	**Lab Code:**	EQ2000550-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-02	253,082	3.06
16WW40-201021	E2001035-005	107,556	3.04
16WW12-201021	E2001035-006	113,227	3.04
16RW04-201021	E2001035-007	204,476	3.04
16RW04-201021-FD	E2001035-008	222,558	3.04
16EW02-201021	E2001035-009	142,354	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 16:34

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_048	**Lab Code:**	EQ2000550-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-03	240,567	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 17:13

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_053	**Lab Code:**	EQ2000550-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-04	244,513	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 09:54

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_007	**Lab Code:**	EQ2000550-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-05	188,253	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 12:14

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_015	**Lab Code:**	EQ2000550-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-06	198,091	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 13:21

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_020	**Lab Code:**	EQ2000550-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-07	206,211	3.05
16IW20-201021	E2001035-004	142,110	2.97

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 13:37

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_022	**Lab Code:**	EQ2000550-08
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-08	217,130	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 17:06

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_023	**Lab Code:**	EQ2000551-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701275
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-01	228,962	2.99
Method Blank	EQ2000548-01	237,056	3.05
Lab Control Sample	EQ2000548-02	212,794	3.05
Duplicate Lab Control Sample	EQ2000548-03	206,721	3.05
16EW06-201021	E2001035-010	161,544	3.05
16EW06-201021-FD	E2001035-011	150,930	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 18:33

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_034	**Lab Code:**	EQ2000551-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701275
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-02	225,202	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

PERCHLORATE7

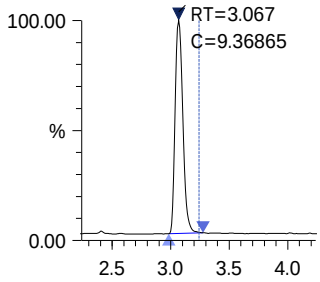
Date acquired: 10/26/2020 1:07:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_026.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 1:07:32 PM	202116	9.36865	20201026_026	3.067	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 1:07:32 PM	230699	1.00000	20201026_026	3.065	25.0000	1.0000	4

Perchlorate

Conc 9.36865
Area 202116

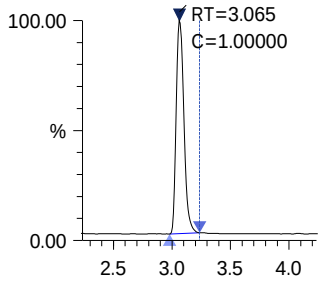
Q 99.00>83.00 (-) 4.48e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 230699

ISTD 107.00>89.00 (-) 5.11e4



ALS Group Houston

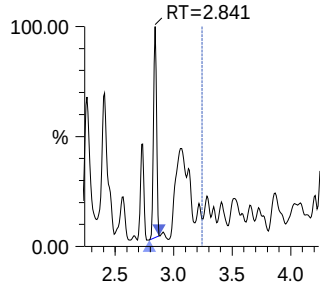
EQ2000537-01

Date acquired: 10/26/2020 2:04:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_029.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-01	10/26/2020 2:04:29 PM	----	----	20201026_029	----	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	EQ2000537-01	10/26/2020 2:04:29 PM	251836	1.00000	20201026_029	3.057	25.0000	1.0000	3

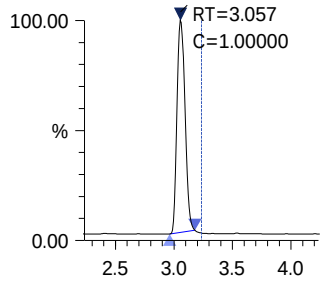
Perchlorate

Conc ----
Area ----
Q 99.00>83.00 (-) 4.04e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 251836
ISTD 107.00>89.00 (-) 5.34e4



ALS Group Houston

EQ2000537-02

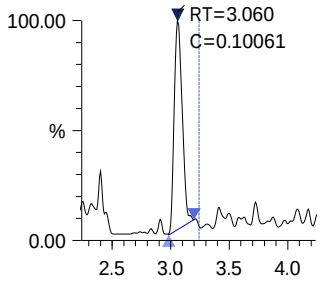
Date acquired: 10/26/2020 2:12:23 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_030.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-02	10/26/2020 2:12:23 PM	3636	0.10061	20201026_030	3.060	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	EQ2000537-02	10/26/2020 2:12:23 PM	252875	1.00000	20201026_030	3.056	25.0000	1.0000	4

Perchlorate

Conc 0.10061
Area 3636

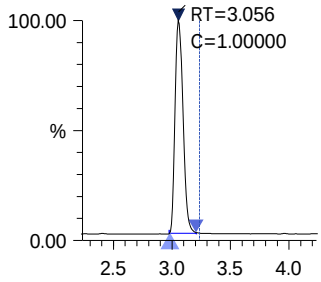
Q 99.00>83.00 (-) 7.92e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 252875

ISTD 107.00>89.00 (-) 5.81e4



ALS Group Houston

EQ2000537-03

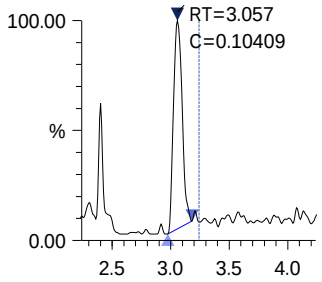
Date acquired: 10/26/2020 2:20:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_031.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-03	10/26/2020 2:20:15 PM	3676	0.10409	20201026_031	3.057	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000537-03	10/26/2020 2:20:15 PM	250027	1.00000	20201026_031	3.057	25.0000	1.0000	5

Perchlorate

Conc 0.10409
Area 3676

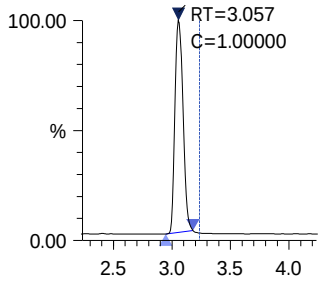
Q 99.00>83.00 (-) 7.41e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 250027

ISTD 107.00>89.00 (-) 5.29e4



ALS Group Houston

EQ2000537-04

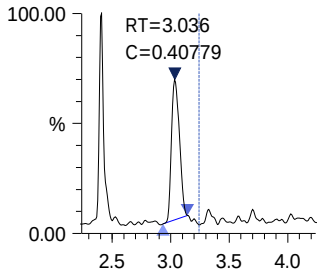
Date acquired: 10/26/2020 2:28:05 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_032.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-04	10/26/2020 2:28:05 PM	4964	0.40779	20201026_032	3.036	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000537-04	10/26/2020 2:28:05 PM	115604	1.00000	20201026_032	3.037	25.0000	1.0000	6

Perchlorate

Conc 0.40779
Area 4964

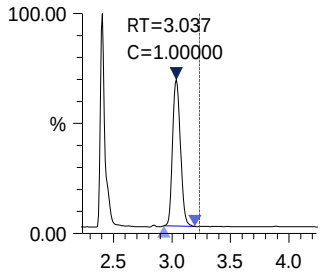
Q 99.00>83.00 (-) 1.61e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 115604

ISTD 107.00>89.00 (-) 3.60e4



ALS Group Houston

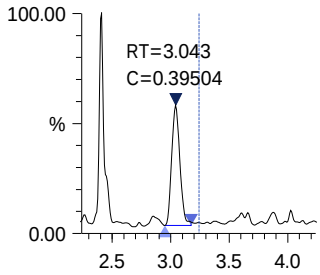
EQ2000537-05

Date acquired: 10/26/2020 2:35:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_033.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-05	10/26/2020 2:35:56 PM	4922	0.39504	20201026_033	3.043	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000537-05	10/26/2020 2:35:56 PM	117876	1.00000	20201026_033	3.038	25.0000	1.0000	7

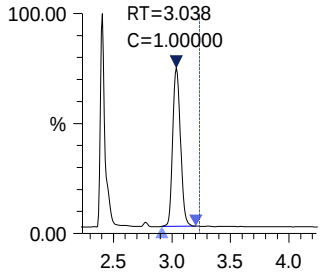
Perchlorate

Conc 0.39504
Area 4922
Q 99.00>83.00 (-) 1.82e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 117876
ISTD 107.00>89.00 (-) 3.44e4



ALS Group Houston

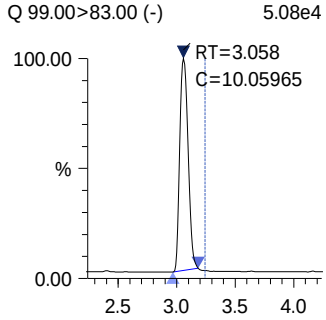
PERCHLORATE7

Date acquired: 10/26/2020 3:07:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_037.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 3:07:28 PM	246952	10.05965	20201026_037	3.058	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 3:07:28 PM	262617	1.00000	20201026_037	3.057	25.0000	1.0000	4

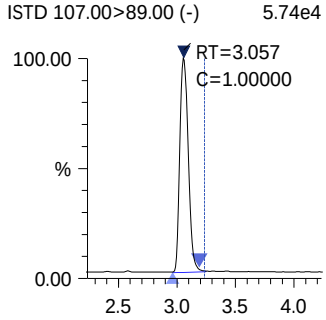
Perchlorate

Conc 10.05965
Area 246952



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 262617



ALS Group Houston

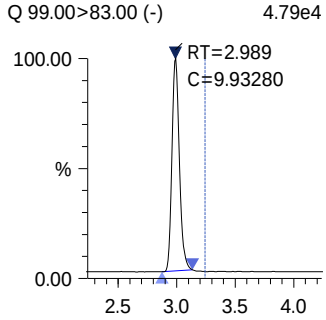
PERCHLORATE7

Date acquired: 10/28/2020 5:06:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_023.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 5:06:37 PM	212604	9.93280	20201028_023	2.989	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 5:06:37 PM	228962	1.00000	20201028_023	2.986	25.0000	1.0000	4

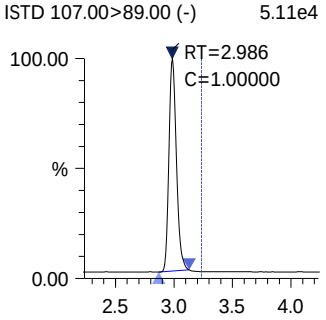
Perchlorate

Conc 9.93280
Area 212604



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 228962



ALS Group Houston

EQ2000548-01

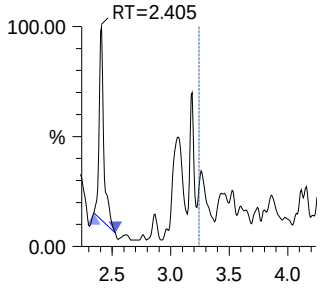
Date acquired: 10/28/2020 5:14:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_024.lcd
Vial: 45 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-01	10/28/2020 5:14:30 PM	----	----	20201028_024	----	25.0000	1.0000	45
Sodium Perchlorate-18O4_IS	EQ2000548-01	10/28/2020 5:14:30 PM	237056	1.00000	20201028_024	3.052	25.0000	1.0000	45

Perchlorate

Conc ----
Area ----

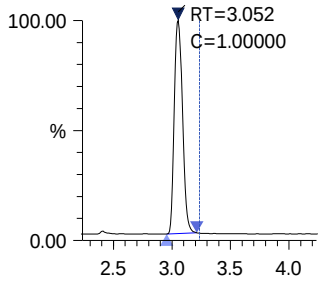
Q 99.00>83.00 (-) 3.39e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 237056

ISTD 107.00>89.00 (-) 4.88e4



ALS Group Houston

EQ2000548-02

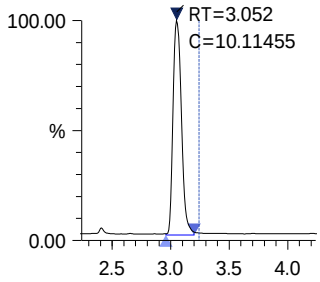
Date acquired: 10/28/2020 5:22:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_025.lcd
Vial: 46 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-02	10/28/2020 5:22:24 PM	201186	10.11455	20201028_025	3.052	25.0000	1.0000	46
Sodium Perchlorate-18O4_IS	EQ2000548-02	10/28/2020 5:22:24 PM	212794	1.00000	20201028_025	3.049	25.0000	1.0000	46

Perchlorate

Conc 10.11455
Area 201186

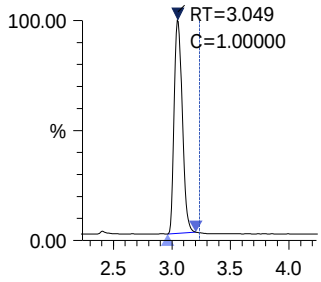
Q 99.00>83.00 (-) 4.04e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 212794

ISTD 107.00>89.00 (-) 4.43e4



ALS Group Houston

EQ2000548-03

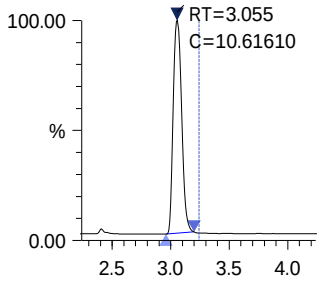
Date acquired: 10/28/2020 5:30:17 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_026.lcd
Vial: 47 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-03	10/28/2020 5:30:17 PM	205086	10.61610	20201028_026	3.055	25.0000	1.0000	47
Sodium Perchlorate-18O4_IS	EQ2000548-03	10/28/2020 5:30:17 PM	206721	1.00000	20201028_026	3.052	25.0000	1.0000	47

Perchlorate

Conc 10.61610
Area 205086

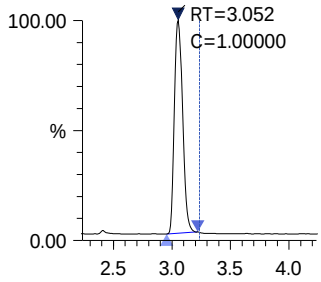
Q 99.00>83.00 (-) 4.15e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 206721

ISTD 107.00>89.00 (-) 4.26e4



ALS Group Houston

EQ2000548-04

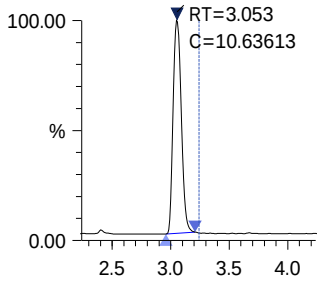
Date acquired: 10/28/2020 5:38:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_027.lcd
Vial: 48 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-04	10/28/2020 5:38:09 PM	148600	10.63613	20201028_027	3.053	25.0000	1.0000	48
Sodium Perchlorate-18O4_IS	EQ2000548-04	10/28/2020 5:38:09 PM	149504	1.00000	20201028_027	3.050	25.0000	1.0000	48

Perchlorate

Conc 10.63613
Area 148600

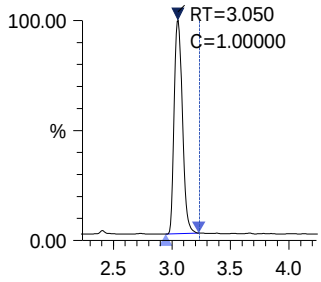
Q 99.00>83.00 (-) 3.10e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 149504

ISTD 107.00>89.00 (-) 3.07e4



ALS Group Houston

EQ2000548-05

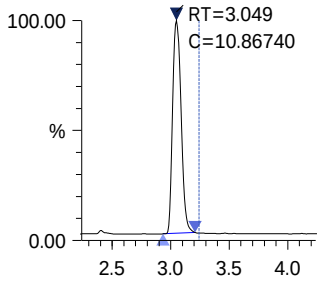
Date acquired: 10/28/2020 5:46:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_028.lcd
Vial: 49 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-05	10/28/2020 5:46:02 PM	188229	10.86740	20201028_028	3.049	25.0000	1.0000	49
Sodium Perchlorate-18O4_IS	EQ2000548-05	10/28/2020 5:46:02 PM	185364	1.00000	20201028_028	3.046	25.0000	1.0000	49

Perchlorate

Conc 10.86740
Area 188229

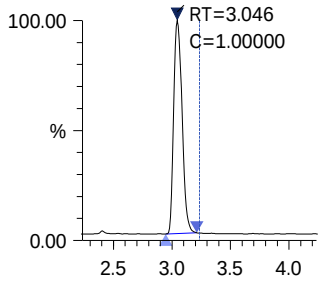
Q 99.00>83.00 (-) 3.78e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 185364

ISTD 107.00>89.00 (-) 3.75e4



ALS Group Houston

PERCHLORATE7

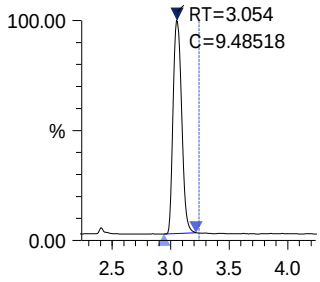
Date acquired: 10/28/2020 6:33:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_034.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 6:33:19 PM	199740	9.48518	20201028_034	3.054	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 6:33:19 PM	225202	1.00000	20201028_034	3.051	25.0000	1.0000	4

Perchlorate

Conc 9.48518
Area 199740

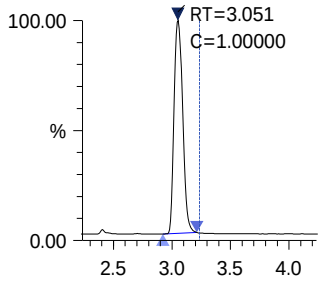
Q 99.00>83.00 (-) 3.98e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 225202

ISTD 107.00>89.00 (-) 4.43e4



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November 06, 2020 **Analytical Report for Service Request No:** K2009641

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 23, 2020
For your reference, these analyses have been assigned our service request number **K2009641.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009641
Date Received: 10/23/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Seven ground water samples were received for analysis at ALS Environmental on 10/23/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

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K20096041

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101123
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
2.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
3.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
4.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
5.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
6.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
7.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

K20096041

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 10/22/2020 1800.

Received By: _____ Date/Time: 10/23/20 0945

Cooler ID(s): _____ Temperature(s): _____

PM KL

Cooler Receipt and Preservation Form

Client ARS - Houston Service Request K20 09644

Received: 10/23/20 Opened: 10/23/20 By: BR Unloaded: 10/23/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
MH	3.4	IR02				189188818907	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW56-201021	K2009641-001	**0.72**	0.50	0.20	0.07	1	11/03/20 11:36	
16IW20-201021	K2009641-002	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW40-201021	K2009641-003	**7.35**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW12-201021	K2009641-004	**3.98**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021	K2009641-005	**2.70**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021-FD	K2009641-006	**2.67**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW02-201021	K2009641-007	**7.36**	0.50	0.20	0.07	1	11/03/20 11:36	
Method Blank	K2009641-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009641-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	0.72	1.99	1.35	94 #	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009641-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	0.72	26.3	25.0	102	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009641-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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General Chemistry

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Work Request # Original ( ) K2009134, 9255, 9599, 9641, 9670

Tier: II II IV IV II

Date Analyzed: 11.3.20

Analyst: MAS Run # 701641

Analysis: SM 5310C/TOCT

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS:

-Rpd between source & dup sample is high but both results are below 5x the MRL

Final Approved by: _____ Date: 11/5/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2009134-002	Carbon, Total Organic	N/A		Water	0.64 mg/L	10 mL	64 mg/L	100	7	50			11/3/20 11:36:00	N	II
K2009134-003	Carbon, Total Organic	N/A		Water	0.36 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009134-004	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009255-001	Carbon, Total Organic	N/A		Ground Water	31.28 mg/L	10 mL	31.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-002	Carbon, Total Organic	N/A		Ground Water	14.47 mg/L	10 mL	14.5 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-003	Carbon, Total Organic	N/A		Ground Water	14.31 mg/L	10 mL	14.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009599-001	Carbon, Total Organic	N/A		Ground Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-002	Carbon, Total Organic	N/A		Ground Water	3.74 mg/L	10 mL	3.74 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-003	Carbon, Total Organic	N/A		Ground Water	8.44 mg/L	10 mL	8.44 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009599-004	Carbon, Total Organic	N/A		Ground Water	4.52 mg/L	10 mL	4.52 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-005	Carbon, Total Organic	N/A		Ground Water	33.24 mg/L	10 mL	332 mg/L	10	0.7	5.0			11/3/20 11:36:00	N	IV
K2009641-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009641-002	Carbon, Total Organic	N/A		Ground Water	14.39 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-003	Carbon, Total Organic	N/A		Ground Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-004	Carbon, Total Organic	N/A		Ground Water	3.98 mg/L	10 mL	3.98 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-005	Carbon, Total Organic	N/A		Ground Water	2.70 mg/L	10 mL	2.70 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-006	Carbon, Total Organic	N/A		Ground Water	2.67 mg/L	10 mL	2.67 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-007	Carbon, Total Organic	N/A		Ground Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009670-001	Carbon, Total Organic	N/A		Water	12.78 mg/L	10 mL	12.8 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-01	Carbon, Total Organic	CCV		Water	25.74 mg/L	10 mL	25.7 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-02	Carbon, Total Organic	CCV		Water	26.06 mg/L	10 mL	26.1 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-03	Carbon, Total Organic	CCV		Water	25.82 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-04	Carbon, Total Organic	CCV		Water	25.86 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2017240-10	Carbon, Total Organic	LCS		Water	24.00 mg/L	10 mL	24.0 mg/L	1	0.07	0.50	96		11/3/20 11:36:00	N	II
KQ2017240-11	Carbon, Total Organic	MS	K2009641-001	Ground Water	26.31 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	102		11/3/20 11:36:00	N	IV
KQ2017240-12	Carbon, Total Organic	DUP	K2009641-001	Ground Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50		94*	11/3/20 11:36:00	N	IV
KQ2017240-13	Carbon, Total Organic	MS	K2009599-003	Ground Water	30.52 mg/L	10 mL	30.5 mg/L	1	0.07	0.50	88		11/3/20 11:36:00	N	IV
KQ2017240-14	Carbon, Total Organic	DUP	K2009599-003	Ground Water	8.47 mg/L	10 mL	8.47 mg/L	1	0.07	0.50		<1	11/3/20 11:36:00	N	IV
KQ2017240-15	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-16	Carbon, Total Organic	CCV		Ground Water	25.81 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-17	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-18	Carbon, Total Organic	CCV		Ground Water	25.87 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Fusion Report - 11032020
Tuesday, November 03, 2020 11:36 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
*	(clean)		Clean	2020/11/03 11:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.77	29.98	16.21	49.60	05:24
2	TC Clean	39.08	52.21	13.13	50.34	04:05
3	TC Clean	8.61	21.95	13.34	50.36	03:51
4	TC Clean	10.08	23.09	13.01	50.34	03:51

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
*	(clean)		Clean	2020/11/03 11:58

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.19	13.34	13.15	49.82	05:24
2	TC Clean	12.57	25.54	12.97	50.09	04:01
3	TC Clean	5.95	18.94	12.99	50.33	03:49
4	TC Clean	8.24	21.10	12.85	50.24	03:47

Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 12:20

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.36	13.22	12.86	49.50	05:11
2	TC Clean	11.19	24.11	12.92	50.30	04:04
3	TC Clean	5.27	18.13	12.86	50.08	03:46
4	TC Clean	8.34	21.24	12.90	50.07	03:45

Sample Type: Blank (Creating v1471) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/11/03 12:49

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.46	22.30	12.83	49.38	05:13
2	TC Clean	11.94	24.85	12.91	50.24	04:06
3	TC Clean	8.41	21.21	12.79	50.08	03:56
4	TC Clean	8.14	20.76	12.62	50.22	03:56
5	Reagent Blank	13.63	26.37	12.75	50.10	05:06
6	Acid Blank	0.79	13.42	12.63	49.86	05:30

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1929 ppm	0.0000 ppm	0.0000%	2020/11/03 13:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1929	1.9285	11.16	23.76	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0291 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0291	260.2915	192.48	205.17	12.69	50.55	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.44	21.27	12.82	50.57	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 14:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.45	21.04	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.3615 ppm (PASS)	0.0000 ppm	0%	2020/11/03 14:22

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

	Type									
C	TOC	25.0 ppm	1	24.3615	243.6154	180.78	193.55	12.77	50.51	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3202 ppm	0.0000 ppm	0.0000%	2020/11/03 14:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3202	3.2015	12.06	24.80	12.74	50.46	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2009468-008 DOC	0.7621 ppm	0.0319 ppm	4.1800%	2020/11/03 14:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7396	7.3955	15.00	27.80	12.80	50.44	10:26
2	TOC	0.7846	7.8460	15.32	27.92	12.60	50.56	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2009501-001 DOC	10.6458 ppm	0.0354 ppm	0.3300%	2020/11/03 15:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.6708	106.7080	84.66	97.52	12.85	50.50	10:26
2	TOC	10.6208	106.2076	84.31	97.01	12.69	50.48	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2009501-003 DOC 4x	17.4630 ppm	0.0816 ppm	0.4700%	2020/11/03 15:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.4053	174.0525	131.91	144.74	12.83	50.51	10:27
2	TOC	17.5207	175.2072	132.72	145.57	12.86	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC)	CAS_salt_010711	CAS_salt_010711

(v1471) (v4) (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2009501-003DUP DOC 4x	17.0412 ppm	0.0286 ppm	0.1700%	2020/11/03 16:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.0614	170.6141	129.49	141.95	12.45	50.38	10:29
2	TOC	17.0209	170.2092	129.21	141.96	12.75	50.51	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2009501-003MS DOC 5x	40.6505 ppm	0.1104 ppm	0.2700%	2020/11/03 16:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	40.5725	405.7247	294.42	307.16	12.74	50.46	10:25
2	TOC	40.7286	407.2857	295.52	308.25	12.74	50.41	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2009560-001 DOC	1.7795 ppm	0.0095 ppm	0.5300%	2020/11/03 17:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7862	17.8619	22.34	35.19	12.85	50.34	10:28
2	TOC	1.7728	17.7279	22.25	34.85	12.60	50.48	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2009560-002 DOC	0.4700 ppm	0.0203 ppm	4.3100%	2020/11/03 17:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4557	4.5572	13.01	25.84	12.83	50.43	10:28
2	TOC	0.4844	4.8438	13.21	26.02	12.81	50.39	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.7386 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7386	257.3862	190.44	203.18	12.73	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.77	20.63	12.85	50.36	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	K2009560-004 DOC	1.1781 ppm	0.0266 ppm	2.2600%	2020/11/03 18:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1592	11.5923	17.94	30.81	12.87	50.40	10:30
2	TOC	1.1969	11.9687	18.21	30.97	12.76	50.55	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	K2009560-005 DOC	0.9729 ppm	0.0276 ppm	2.8400%	2020/11/03 19:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9924	9.9244	16.77	29.26	12.49	50.48	10:28
2	TOC	0.9534	9.5338	16.50	29.20	12.71	50.43	10:26

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2009560-006 DOC	0.7008 ppm	0.0281 ppm	4.0100%	2020/11/03 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6810	6.8096	14.59	27.49	12.90	50.41	10:27
2	TOC	0.7207	7.2073	14.87	27.57	12.70	50.40	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2009560-007 DOC	0.8376 ppm	0.0023 ppm	0.2800%	2020/11/03 20:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8359	8.3592	15.68	28.40	12.73	50.37	10:26
2	TOC	0.8392	8.3920	15.70	28.31	12.61	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2009560-008 DOC	0.5497 ppm	0.0073 ppm	1.3200%	2020/11/03 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5548	5.5480	13.70	26.46	12.75	50.39	10:25
2	TOC	0.5445	5.4453	13.63	26.56	12.93	50.36	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2009560-009 DOC	0.7137 ppm	0.0290 ppm	4.0700%	2020/11/03 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6932	6.9322	14.67	27.47	12.80	50.36	10:27
2	TOC	0.7343	7.3428	14.96	27.64	12.68	50.34	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2009599-001	14.3778 ppm	0.1881 ppm	1.3100%	2020/11/03 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.5108	145.1081	111.60	124.25	12.65	50.36	10:30
2	TOC	14.2448	142.4480	109.74	122.50	12.76	50.38	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K2009599-002	3.7353 ppm	0.0174 ppm	0.4700%	2020/11/03 21:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7476	37.4761	36.10	48.70	12.60	50.34	10:27
2	TOC	3.7229	37.2295	35.93	48.72	12.79	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K2009599-003	8.4434 ppm	0.2066 ppm	2.4500%	2020/11/03 22:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5895	85.8950	70.06	82.63	12.56	50.38	10:27
2	TOC	8.2973	82.9726	68.02	80.93	12.91	50.37	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K2009599-003DUP	8.4682 ppm	0.1266 ppm	1.5000%	2020/11/03 22:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5577	85.5771	69.84	82.73	12.89	50.38	10:28
2	TOC	8.3787	83.7866	68.59	81.35	12.77	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0569 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:18

Pos	Base Analysis	ID	Rep	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run

	Type		#							Time
B	TOC	25 ppm	1	26.0569	260.5694	192.68	205.51	12.83	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.73	12.69	50.35	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 23:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.49	20.24	12.75	50.34	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.0002 ppm (PASS)	0.0000 ppm	0%	2020/11/04 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.0002	240.0016	178.25	191.05	12.80	50.33	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	21	TOC	K2009599-003MS	30.5199 ppm	0.2792 ppm	0.9100%	2020/11/04 00:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.7173	307.1734	225.29	237.88	12.59	50.33	10:29
2	TOC	30.3225	303.2246	222.52	235.37	12.85	50.33	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2009599-004	4.5248 ppm	0.1496 ppm	3.3100%	2020/11/04 00:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6306	46.3059	42.29	55.23	12.93	50.33	10:26
2	TOC	4.4190	44.1904	40.81	53.60	12.79	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2009599-005 10x	33.2444 ppm	0.4726 ppm	1.4200%	2020/11/04 01:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.9103	329.1027	240.67	253.38	12.71	50.32	10:27
2	TOC	33.5786	335.7857	245.36	258.09	12.73	50.29	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2009641-001	5.3742 ppm	0.2819 ppm	5.2500%	2020/11/04 01:40

-NH carry over

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.5736	55.7360	48.91	61.56	12.66	50.29	10:31
2	TOC	5.1749	51.7487	46.11	59.07	12.95	50.30	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2009641-001DUP	1.9856 ppm	0.0348 ppm	1.7500%	2020/11/04 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.0101	20.1014	23.91	36.68	12.77	50.31	10:28
2	TOC	1.9610	19.6096	23.57	36.34	12.78	50.31	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	26	TOC	K2009641-001MS	26.3108 ppm	0.0841 ppm	0.3200%	2020/11/04 02:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3703	263.7026	194.79	207.61	12.82	50.26	10:31
2	TOC	26.2514	262.5137	193.96	207.12	13.16	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	27	TOC	K2009641-002	14.3894 ppm	0.3804 ppm	2.6400%	2020/11/04 03:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6584	146.5836	112.64	125.62	12.99	50.28	10:27
2	TOC	14.1204	141.2035	108.86	121.75	12.89	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	28	TOC	K2009641-003	7.3487 ppm	0.0012 ppm	0.0200%	2020/11/04 03:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3496	73.4955	61.37	74.32	12.95	50.27	10:30
2	TOC	7.3478	73.4784	61.36	74.16	12.81	50.28	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	29	TOC	K2009641-004	3.9775 ppm	0.0623 ppm	1.5700%	2020/11/04 04:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0216	40.2160	38.02	50.81	12.78	50.28	10:30
2	TOC	3.9335	39.3350	37.40	50.11	12.71	50.27	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2009641-005	2.7030 ppm	0.0247 ppm	0.9100%	2020/11/04 04:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6856	26.8557	28.65	41.18	12.53	50.25	10:26
2	TOC	2.7205	27.2050	28.90	41.84	12.95	50.26	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2009641-006	2.6683 ppm	0.0241 ppm	0.9000%	2020/11/04 04:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6853	26.8529	28.65	41.25	12.61	50.25	10:25
2	TOC	2.6512	26.5122	28.41	41.25	12.84	50.27	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2009641-007	7.3631 ppm	0.0302 ppm	0.4100%	2020/11/04 05:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3417	73.4171	61.31	74.17	12.86	50.27	10:28
2	TOC	7.3845	73.8448	61.61	74.50	12.88	50.25	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8156 ppm (PASS)	0.0000 ppm	0%	2020/11/04 05:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8156	258.1560	190.98	203.77	12.79	50.25	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 06:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.53	20.42	12.89	50.24	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2009670-001	12.7753 ppm	0.0369 ppm	0.2900%	2020/11/04 06:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.7493	127.4926	99.24	112.12	12.88	50.22	10:26
2	TOC	12.8014	128.0143	99.61	112.45	12.84	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2009255-001	31.2797 ppm	0.5426 ppm	1.7300%	2020/11/04 06:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.8960	308.9596	226.54	239.32	12.78	50.19	10:27
2	TOC	31.6633	316.6334	231.92	244.59	12.66	50.28	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2009255-002	14.4665 ppm	0.3169 ppm	2.1900%	2020/11/04 07:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6906	146.9057	112.86	125.76	12.90	50.28	10:27
2	TOC	14.2424	142.4238	109.72	122.66	12.95	50.32	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	36	TOC	K2009255-003	14.3057 ppm	0.2508 ppm	1.7500%	2020/11/04 07:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4830	144.8301	111.41	124.15	12.74	50.45	10:31
2	TOC	14.1283	141.2833	108.92	121.82	12.90	50.31	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2009134-002 100X	0.6368 ppm	0.0439 ppm	6.9000%	2020/11/04 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6678	6.6785	14.50	27.19	12.69	50.33	10:30
2	TOC	0.6057	6.0569	14.06	27.05	12.99	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2009134-003 100X	0.3611 ppm	0.0127 ppm	3.5200%	2020/11/04 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3521	3.5209	12.28	25.08	12.79	50.33	10:32
2	TOC	0.3700	3.7005	12.41	25.02	12.61	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	K2009134-004 100X	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.36	21.09	12.73	50.35	10:30
2	TOC	0.0000	0.0000	8.59	21.35	12.76	50.29	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	19.67	12.84	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.78	19.55	12.77	50.32	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1470	1.6077	0.0460	0.0000	0.0000	0.0000	2020/10/30 19:52	Fusion1 (Fusion1)
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v38	Calibration curve formula:	TOC: y = 7.015x + 9.892
Ver Creation:	2020/06/13 16:40	r^2 value:	TOC: r^2 = 0.99974
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 10:09

Fusion Report - 11032020
Wednesday, November 04, 2020 10:34 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v6)		
Comment:			

Report Results

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8577 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8577	258.5765	191.28	204.17	12.89	50.35	10:27

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.67	20.68	13.01	50.21	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met. (v4) (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml

UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 11:04

Fusion Report - 11042020A
Wednesday, November 04, 2020 12:16 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 14:04 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11042020A	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1)		
Comment:			

Report Results

Sample Type: Sample — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.1022 ppm	0.0000 ppm	0.0000%	2020/11/04 12:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1022	1.0219	10.53	23.56	13.03	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8736 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8736	258.7362	191.39	204.35	12.96	50.46	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.94	12.89	50.39	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2009641-001	0.7150 ppm	0.0316 ppm	4.4100%	2020/11/04 13:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7373	7.3727	14.98	27.58	12.60	50.37	10:25
2	TOC	0.6926	6.9265	14.67	27.62	12.95	50.37	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

-Reported Value w/o carry over

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8075 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8075	258.0747	190.93	203.88	12.96	50.42	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.16	20.83	12.67	50.28	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC
Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 13:58

ALS Environmental

StarLIMS Run: 701641

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 19-GEN-8-55J 50 ppm LCS: 19-GEN-8-41K 25.0 ppm

ICAL Date: 6/16/2020

ICAL ID: 19-GEN-8-22-G

ICS ID: 19-GEN-8-35-K

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-55I 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-55K

21 % H3PO4: 19-GEN-08-55L

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: MAS	Date Analyzed: 11/3/2020
Reviewed By:	Date Reviewed: 11/5/20

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Houston, TX 77099
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WorkOrder: HS20101123

LHAAP 16 October 2020

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

01-Dec-2020

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HS20101123 LHAAP 16 October 2020 Final

ALS WO# HS20101123

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November 10, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101123**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 12 sample(s) on Oct 22, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101123

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101123-01	16WW56-201021	Groundwater		21-Oct-2020 07:50	22-Oct-2020 09:10	☐
HS20101123-02	16RW11-201021	Groundwater		21-Oct-2020 08:45	22-Oct-2020 09:10	☐
HS20101123-03	16RW11-201021-FD	Groundwater		21-Oct-2020 08:45	22-Oct-2020 09:10	☐
HS20101123-04	16IW20-201021	Groundwater		21-Oct-2020 09:30	22-Oct-2020 09:10	☐
HS20101123-05	16WW40-201021	Groundwater		21-Oct-2020 10:15	22-Oct-2020 09:10	☐
HS20101123-06	16WW12-201021	Groundwater		21-Oct-2020 11:00	22-Oct-2020 09:10	☐
HS20101123-07	16RW04-201021	Groundwater		21-Oct-2020 11:45	22-Oct-2020 09:10	☐
HS20101123-08	16RW04-201021-FD	Groundwater		21-Oct-2020 11:45	22-Oct-2020 09:10	☐
HS20101123-09	16EW02-201021	Groundwater		21-Oct-2020 12:35	22-Oct-2020 09:10	☐
HS20101123-10	16EW06-201021	Groundwater		21-Oct-2020 13:30	22-Oct-2020 09:10	☐
HS20101123-11	16EW06-201021-FD	Groundwater		21-Oct-2020 13:30	22-Oct-2020 09:10	☐
HS20101123-12	Trip Blank-201021	Water	CG-092320-76	21-Oct-2020 00:00	22-Oct-2020 09:10	☐

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101123

Work Order Comments

- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.
- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GC Semivolatiles by Method RSK-175

Batch ID: R371594

Sample ID: 16WW56-201021 (HS20101123-01MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: 16WW56-201021 (HS20101123-01MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

Sample ID: HS20101079-03MS

- MS and MSD are for an unrelated sample

GCMS Volatiles by Method SW8260

Batch ID: R371939

Sample ID: 16EW06-201021 (HS20101123-10)

- Lowest practical dilution for sample HS20101123-10 due to matrix.

Sample ID: 16EW06-201021-FD (HS20101123-11)

- Lowest practical dilution for sample HS20101123-11 due to matrix.

Batch ID: R371935

Sample ID: 16WW56-201021 (HS20101123-01MS)

- MS and/or MSD recovered outside control limits

WetChemistry by Method SW9056

Batch ID: R372041

Sample ID: 16WW12-201021 (HS20101123-06)

- Sample ran at 2X due to high concentration of Chloride and Sulfate

Sample ID: 16WW40-201021 (HS20101123-05)

- Sample ran at 2X due to high concentration of Chloride and Sulfate

Sample ID: HS20110128-11MSD

- MSD is for an unrelated sample

Batch ID: R371917

Sample ID: HS20101310-11MSD

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101123

WetChemistry by Method SW9056

Batch ID: R371917

- MSD is for an unrelated sample (Sulfate)

Batch ID: R371188

Sample ID: 16EW02-201021 (HS20101123-09)

- Sample ran at 5X due to high concentration of Sulfate

Sample ID: 16WW56-201021 (HS20101123-01MS)

- The recovery of the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) associated with this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS/MSD may be due to sample matrix interference. (Bromide,Nitrogen, Nitrate (As N))

WetChemistry by Method SM2320B

Batch ID: R371123

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW56-201021
Collection Date: 21-Oct-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	03-Nov-2020 19:42
1,1-Dichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
1,2-Dichloroethane	**0.66**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
cis-1,2-Dichloroethene	**20**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 19:42
Trichloroethene	**270**		**1.0**	**2.5**	**5.0**	**UG/L**	5	03-Nov-2020 20:46
Vinyl chloride	**2.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 19:42
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: 4-Bromofluorobenzene	*92.7*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: Dibromofluoromethane	*84.4*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*5*	*03-Nov-2020 20:46*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 19:42*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*5*	*03-Nov-2020 20:46*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 14:23
Ethene	**0.00201**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 14:23
Methane	**0.00126**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 14:23
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**233**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**3.95**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	22-Oct-2020 21:03
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	22-Oct-2020 21:03
Sulfate	**1,190**		**20.0**	**50.0**	**50.0**	**mg/L**	100	03-Nov-2020 02:01
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW11-201021
Collection Date: 21-Oct-2020 08:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 21:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:07
1,2-Dichloroethane	**0.73**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
cis-1,2-Dichloroethene	**3.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:07
Trichloroethene	**3.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:07
Surr: 1,2-Dichloroethane-d4	*85.8*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: Dibromofluoromethane	*84.3*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:07*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:07*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW11-201021-FD
Collection Date: 21-Oct-2020 08:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	03-Nov-2020 21:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:28
1,2-Dichloroethane	**0.91**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
cis-1,2-Dichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:28
Trichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:28
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:28*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:28*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16IW20-201021
Collection Date: 21-Oct-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 21:49
1,1-Dichloroethene	**1.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
1,2-Dichloroethane	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
cis-1,2-Dichloroethene	**170**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 21:49
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	03-Nov-2020 21:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 21:49
Surr: 1,2-Dichloroethane-d4	*88.4*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: 4-Bromofluorobenzene	*93.8*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: Dibromofluoromethane	*85.3*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 21:49*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 21:49*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	**0.00400**		**0.000144**	**0.000250**	**0.00100**	**mg/L**	1	26-Oct-2020 15:03
Ethene	**0.0309**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 15:03
Methane	**2.40**		**0.0107**	**0.0250**	**0.0500**	**mg/L**	100	26-Oct-2020 15:21
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**877**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:34
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**34.9**		**0.300**	**1.00**	**1.00**	**mg/L**	10	03-Nov-2020 02:19
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	22-Oct-2020 21:21
Sulfate	**165**		**2.00**	**5.00**	**5.00**	**mg/L**	10	03-Nov-2020 02:19
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW40-201021
Collection Date: 21-Oct-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	04-Nov-2020 02:22
1,1-Dichloroethene	**7.5**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
1,2-Dichloroethane	**6.0**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
cis-1,2-Dichloroethene	**230**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 02:22
Trichloroethene	**1,700**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 02:43
Vinyl chloride	**6.3**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 02:22
Surr: 1,2-Dichloroethane-d4	*86.3*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: 1,2-Dichloroethane-d4	*85.2*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: 4-Bromofluorobenzene	*92.8*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: 4-Bromofluorobenzene	*94.4*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: Dibromofluoromethane	*85.6*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 02:43*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 02:22*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 02:43*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**6.97**		**0.0600**	**0.200**	**0.200**	**mg/L**	2	04-Nov-2020 09:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP 16 October 2020 WorkOrder:HS20101123
Sample ID: 16WW12-201021 Lab ID:HS20101123-06
Collection Date: 21-Oct-2020 11:00 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	04-Nov-2020 06:14
1,1-Dichloroethene	**3.8**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
1,2-Dichloroethane	**5.5**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
cis-1,2-Dichloroethene	**67**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 06:14
Trichloroethene	**1,500**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 06:35
Vinyl chloride	**5.8**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:14
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: 1,2-Dichloroethane-d4	*89.0*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Dibromofluoromethane	*85.0*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 06:35*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 06:14*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 06:35*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**5.76**		**0.0600**	**0.200**	**0.200**	**mg/L**	2	04-Nov-2020 09:18
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW04-201021
Collection Date: 21-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	2.5	U	1.5	2.5	5.0	UG/L	5	04-Nov-2020 06:56
1,1-Dichloroethene	**4.1**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	04-Nov-2020 06:56
cis-1,2-Dichloroethene	**140**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 06:56
Trichloroethene	**3,400**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 07:17
Vinyl chloride	**5.3**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 06:56
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: 4-Bromofluorobenzene	*90.2*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: 4-Bromofluorobenzene	*91.1*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: Dibromofluoromethane	*83.5*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: Dibromofluoromethane	*86.6*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 07:17*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 06:56*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 07:17*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**1.21**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	04-Nov-2020 09:36
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW04-201021-FD
Collection Date: 21-Oct-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	04-Nov-2020 07:38
1,1-Dichloroethene	**3.2**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	04-Nov-2020 07:38
cis-1,2-Dichloroethene	**140**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	04-Nov-2020 07:38
Trichloroethene	**3,600**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 07:59
Vinyl chloride	**5.6**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 07:38
Surr: 1,2-Dichloroethane-d4	*85.9*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: 4-Bromofluorobenzene	*92.6*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: 4-Bromofluorobenzene	*89.5*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: Dibromofluoromethane	*82.5*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: Dibromofluoromethane	*83.3*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 07:59*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 07:38*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 07:59*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**1.19**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	04-Nov-2020 12:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW02-201021
Collection Date: 21-Oct-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	25	U	15	25	50	UG/L	50	04-Nov-2020 08:20
1,1-Dichloroethene	**110**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
1,2-Dichloroethane	**48**	J	**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
cis-1,2-Dichloroethene	**26,000**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 08:41
Methylene chloride	50	U	20	50	100	UG/L	50	04-Nov-2020 08:20
Trichloroethene	**26,000**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 08:41
Vinyl chloride	**51**		**10**	**25**	**50**	**UG/L**	50	04-Nov-2020 08:20
Surr: 1,2-Dichloroethane-d4	*89.2*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: 1,2-Dichloroethane-d4	*89.5*			**0**	*81-118*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: 4-Bromofluorobenzene	*89.5*			**0**	*85-114*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: Dibromofluoromethane	*86.2*			**0**	*80-119*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: Dibromofluoromethane	*86.2*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 08:41*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*50*	*04-Nov-2020 08:20*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 08:41*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: PVL
Ethane	0.000250	U	0.000144	0.000250	0.00100	mg/L	1	26-Oct-2020 15:12
Ethene	**0.00154**		**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	26-Oct-2020 15:12
Methane	**0.00939**		**0.000107**	**0.000250**	**0.000500**	**mg/L**	1	26-Oct-2020 15:12
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: TH
Alkalinity, Total (As CaCO3)	**328**	a	**5.00**	**5.00**	**5.00**	**mg/L**	1	23-Oct-2020 02:57
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**6.87**		**0.150**	**0.500**	**0.500**	**mg/L**	5	22-Oct-2020 21:39
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	22-Oct-2020 21:39
Sulfate	**1,380**		**10.0**	**25.0**	**25.0**	**mg/L**	50	03-Nov-2020 02:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW06-201021
Collection Date: 21-Oct-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	250	U	150	250	500	UG/L	500	04-Nov-2020 01:19
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
cis-1,2-Dichloroethene	**750**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:19
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 01:19
Trichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:19
Vinyl chloride	**510**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:19
Surr: 1,2-Dichloroethane-d4	*87.2*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: 4-Bromofluorobenzene	*89.8*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: Dibromofluoromethane	*85.6*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 01:19*
Surr: Toluene-d8	*98.9*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 01:19*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW06-201021-FD
Collection Date: 21-Oct-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	500	U	150	500	500	UG/L	500	04-Nov-2020 01:40
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
cis-1,2-Dichloroethene	**520**		**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 01:40
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 01:40
Trichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
Vinyl chloride	250	U	100	250	500	UG/L	500	04-Nov-2020 01:40
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: 4-Bromofluorobenzene	*92.9*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: Dibromofluoromethane	*86.4*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 01:40*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 01:40*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank-201021
Collection Date: 21-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101123
Lab ID:HS20101123-12
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	03-Nov-2020 19:21
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	03-Nov-2020 19:21
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	03-Nov-2020 19:21
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: Dibromofluoromethane	*85.2*			**0**	*80-119*	*%REC*	*1*	*03-Nov-2020 19:21*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*03-Nov-2020 19:21*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371123 (0)	**Test Name :** ALKALINITY BY SM2320B				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			23 Oct 2020 02:20	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			23 Oct 2020 02:34	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			23 Oct 2020 02:57	1
Batch ID: R371188 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			22 Oct 2020 21:03	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			22 Oct 2020 21:21	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			22 Oct 2020 21:39	5
Batch ID: R371594 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			26 Oct 2020 14:23	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			26 Oct 2020 15:21	100
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			26 Oct 2020 15:03	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			26 Oct 2020 15:12	1
Batch ID: R371600 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			29 Oct 2020 18:36	1
HS20101123-02	16RW11-201021	21 Oct 2020 08:45			29 Oct 2020 18:36	1
HS20101123-03	16RW11-201021-FD	21 Oct 2020 08:45			29 Oct 2020 18:36	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			29 Oct 2020 18:36	1
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			29 Oct 2020 18:36	1
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			29 Oct 2020 18:36	1
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			29 Oct 2020 18:36	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			29 Oct 2020 18:36	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			29 Oct 2020 18:36	1
HS20101123-10	16EW06-201021	21 Oct 2020 13:30			29 Oct 2020 18:36	1
HS20101123-11	16EW06-201021-FD	21 Oct 2020 13:30			29 Oct 2020 18:36	1
Batch ID: R371917 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 02:01	100
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			03 Nov 2020 02:19	10
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			03 Nov 2020 02:37	50
Batch ID: R371935 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101123-12	Trip Blank-201021	21 Oct 2020 00:00			03 Nov 2020 19:21	1
Batch ID: R371935 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 20:46	5
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			03 Nov 2020 19:42	1
HS20101123-02	16RW11-201021	21 Oct 2020 08:45			03 Nov 2020 21:07	1
HS20101123-03	16RW11-201021-FD	21 Oct 2020 08:45			03 Nov 2020 21:28	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			03 Nov 2020 21:49	1

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020 **DATES REPORT**
WorkOrder: HS20101123

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 02:43	25
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 02:22	5
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 06:35	25
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 06:14	5
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 07:17	50
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 06:56	5
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 07:59	50
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 07:38	5
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			04 Nov 2020 08:41	500
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			04 Nov 2020 08:20	50
HS20101123-10	16EW06-201021	21 Oct 2020 13:30			04 Nov 2020 01:19	500
HS20101123-11	16EW06-201021-FD	21 Oct 2020 13:30			04 Nov 2020 01:40	500
Batch ID: R372041 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			04 Nov 2020 09:00	2
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			04 Nov 2020 09:18	2
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			04 Nov 2020 09:36	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			04 Nov 2020 12:37	1
Batch ID: R372266 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101123-01	16WW56-201021	21 Oct 2020 07:50			09 Nov 2020 20:25	1
HS20101123-04	16IW20-201021	21 Oct 2020 09:30			09 Nov 2020 20:25	1
HS20101123-05	16WW40-201021	21 Oct 2020 10:15			09 Nov 2020 20:25	1
HS20101123-06	16WW12-201021	21 Oct 2020 11:00			09 Nov 2020 20:25	1
HS20101123-07	16RW04-201021	21 Oct 2020 11:45			09 Nov 2020 20:25	1
HS20101123-08	16RW04-201021-FD	21 Oct 2020 11:45			09 Nov 2020 20:25	1
HS20101123-09	16EW02-201021	21 Oct 2020 12:35			09 Nov 2020 20:25	1

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK Sample ID: **MBLK-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:00**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.000250	0.00100								U
Ethene	0.000500	0.00100								U
Methane	0.000250	0.000500								U

LCS Sample ID: **LCS-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:08**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0204	0.00100	0.01804	0	113	75 - 125				
Ethene	0.0186	0.00100	0.0168	0	111	75 - 125				
Methane	0.00935	0.000500	0.009647	0	96.9	75 - 125				

LCSD Sample ID: **LCSD-201026** Units: **mg/L** Analysis Date: **26-Oct-2020 10:19**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807447** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0200	0.00100	0.01804	0	111	75 - 125	0.02037	1.7	30	
Ethene	0.0179	0.00100	0.0168	0	107	75 - 125	0.01859	3.66	30	
Methane	0.0105	0.000500	0.009647	0	109	75 - 125	0.009349	11.8	30	

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **26-Oct-2020 14:31**
Client ID: **16WW56-201021** Run ID: **FID-4_371594** SeqNo: **5807468** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0245	0.00100	0.01804	0	136	75 - 125				S
Ethene	0.0261	0.00100	0.0168	0.002009	144	75 - 125				S
Methane	0.0131	0.000500	0.009647	0.001258	123	75 - 125				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371594 (0) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MS Sample ID: **HS20101079-03MS** Units: **mg/L** Analysis Date: **26-Oct-2020 13:16**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0111	0.00100	0.01804	0	61.4	75 - 125				S
Ethene	0.0124	0.00100	0.0168	0.001226	66.7	75 - 125				S
Methane	0.00691	0.000500	0.009647	0.003527	35.1	75 - 125				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 14:49**
Client ID: **16WW56-201021** Run ID: **FID-4_371594** SeqNo: **5807469** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0251	0.00100	0.01804	0	139	75 - 125	0.02450	2.53	30	S
Ethene	0.0267	0.00100	0.0168	0.002009	147	75 - 125	0.02614	2.06	30	S
Methane	0.0123	0.000500	0.009647	0.001258	114	75 - 125	0.01312	6.57	30	

MSD Sample ID: **HS20101079-03MSD** Units: **mg/L** Analysis Date: **26-Oct-2020 13:34**
Client ID: Run ID: **FID-4_371594** SeqNo: **5807464** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0261	0.00100	0.01804	0	144	75 - 125	0.01109	80.6	30	SR
Ethene	0.0261	0.00100	0.0168	0.001226	148	75 - 125	0.01244	71	30	SR
Methane	0.0133	0.000500	0.009647	0.003527	102	75 - 125	0.006909	63.5	30	R

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371935 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 18:18**
Client ID: Run ID: **VOA6_371935** SeqNo: **5815257** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.1*	*1.0*	*50*	*0*	*86.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.11*	*1.0*	*50*	*0*	*90.2*	*85 - 114*				
Surr: Dibromofluoromethane	*41.82*	*1.0*	*50*	*0*	*83.6*	*80 - 119*				
Surr: Toluene-d8	*50.18*	*1.0*	*50*	*0*	*100*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 17:15**
Client ID: Run ID: **VOA6_371935** SeqNo: **5815256** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.19	1.0	20	0	96.0	80 - 119				
1,1-Dichloroethene	19.03	1.0	20	0	95.2	71 - 131				
1,2-Dichloroethane	19.48	1.0	20	0	97.4	73 - 128				
cis-1,2-Dichloroethene	17.85	1.0	20	0	89.3	78 - 123				
Methylene chloride	17.33	2.0	20	0	86.6	74 - 124				
Trichloroethene	19.91	1.0	20	0	99.6	79 - 123				
Vinyl chloride	19.48	1.0	20	0	97.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.1*	*1.0*	*50*	*0*	*100*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.89*	*1.0*	*50*	*0*	*99.8*	*85 - 114*				
Surr: Dibromofluoromethane	*47.06*	*1.0*	*50*	*0*	*94.1*	*80 - 119*				
Surr: Toluene-d8	*47.74*	*1.0*	*50*	*0*	*95.5*	*89 - 112*				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371935 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101123-01MS** Units: **UG/L** Analysis Date: **03-Nov-2020 20:04**
Client ID: **16WW56-201021** Run ID: **VOA6_371935** SeqNo: **5815262** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	25.37	1.0	20	0	127	80 - 119				S
1,1-Dichloroethene	24.98	1.0	20	1.516	117	71 - 131				
1,2-Dichloroethane	24.02	1.0	20	0.663	117	73 - 128				
cis-1,2-Dichloroethene	71.36	1.0	20	19.57	259	78 - 123				S
Methylene chloride	20.14	2.0	20	0	101	74 - 124				
Trichloroethene	405	1.0	20	216.9	940	79 - 123				SEO
Vinyl chloride	29.58	1.0	20	2.82	134	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.67*	*1.0*	*50*	*0*	*91.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.28*	*1.0*	*50*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*44.14*	*1.0*	*50*	*0*	*88.3*	*80 - 119*				
Surr: Toluene-d8	*50.31*	*1.0*	*50*	*0*	*101*	*89 - 112*				

MSD Sample ID: **HS20101123-01MSD** Units: **UG/L** Analysis Date: **03-Nov-2020 20:25**
Client ID: **16WW56-201021** Run ID: **VOA6_371935** SeqNo: **5815263** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	23.7	1.0	20	0	118	80 - 119	25.37	6.84	20	
1,1-Dichloroethene	23.91	1.0	20	1.516	112	71 - 131	24.98	4.4	20	
1,2-Dichloroethane	24.09	1.0	20	0.663	117	73 - 128	24.02	0.278	20	
cis-1,2-Dichloroethene	72.84	1.0	20	19.57	266	78 - 123	71.36	2.06	20	S
Methylene chloride	20.25	2.0	20	0	101	74 - 124	20.14	0.534	20	
Trichloroethene	383.9	1.0	20	216.9	835	79 - 123	405	5.36	20	SEO
Vinyl chloride	29.23	1.0	20	2.82	132	58 - 137	29.58	1.19	20	
Surr: 1,2-Dichloroethane-d4	*45.21*	*1.0*	*50*	*0*	*90.4*	*81 - 118*	*45.67*	*1.01*	*20*	
Surr: 4-Bromofluorobenzene	*47.96*	*1.0*	*50*	*0*	*95.9*	*85 - 114*	*47.28*	*1.43*	*20*	
Surr: Dibromofluoromethane	*45.21*	*1.0*	*50*	*0*	*90.4*	*80 - 119*	*44.14*	*2.39*	*20*	
Surr: Toluene-d8	*49.84*	*1.0*	*50*	*0*	*99.7*	*89 - 112*	*50.31*	*0.939*	*20*	

The following samples were analyzed in this batch: HS20101123-01 HS20101123-02 HS20101123-03 HS20101123-04 HS20101123-12

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **04-Nov-2020 00:37**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.55*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.35*	*1.0*	*50*	*0*	*90.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.78*	*1.0*	*50*	*0*	*85.6*	*80 - 119*				
Surr: Toluene-d8	*50.97*	*1.0*	*50*	*0*	*102*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 23:55**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.11	1.0	20	0	95.6	80 - 119				
1,1-Dichloroethene	19.02	1.0	20	0	95.1	71 - 131				
1,2-Dichloroethane	18.08	1.0	20	0	90.4	73 - 128				
cis-1,2-Dichloroethene	18.12	1.0	20	0	90.6	78 - 123				
Methylene chloride	17.62	2.0	20	0	88.1	74 - 124				
Trichloroethene	17.96	1.0	20	0	89.8	79 - 123				
Vinyl chloride	17.9	1.0	20	0	89.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.2*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.13*	*1.0*	*50*	*0*	*98.3*	*85 - 114*				
Surr: Dibromofluoromethane	*49.1*	*1.0*	*50*	*0*	*98.2*	*80 - 119*				
Surr: Toluene-d8	*48.72*	*1.0*	*50*	*0*	*97.4*	*89 - 112*				

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101123-05MS** Units: **UG/L** Analysis Date: **04-Nov-2020 03:04**
Client ID: **16WW40-201021** Run ID: **VOA6_371939** SeqNo: **5815470** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	553.9	25	500	0	111	80 - 119				
1,1-Dichloroethene	599.3	25	500	0	120	71 - 131				
1,2-Dichloroethane	508.3	25	500	0	102	73 - 128				
cis-1,2-Dichloroethene	765.8	25	500	239.8	105	78 - 123				
Methylene chloride	500.5	50	500	0	100	74 - 124				
Trichloroethene	2239	25	500	1724	103	79 - 123				
Vinyl chloride	650.7	25	500	0	130	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1104*	*25*	*1250*	*0*	*88.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1183*	*25*	*1250*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*1124*	*25*	*1250*	*0*	*89.9*	*80 - 119*				
Surr: Toluene-d8	*1251*	*25*	*1250*	*0*	*100*	*89 - 112*				

MSD Sample ID: **HS20101123-05MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 03:25**
Client ID: **16WW40-201021** Run ID: **VOA6_371939** SeqNo: **5815471** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	554.7	25	500	0	111	80 - 119	553.9	0.148	20	
1,1-Dichloroethene	551.9	25	500	0	110	71 - 131	599.3	8.24	20	
1,2-Dichloroethane	565.3	25	500	0	113	73 - 128	508.3	10.6	20	
cis-1,2-Dichloroethene	721.8	25	500	239.8	96.4	78 - 123	765.8	5.91	20	
Methylene chloride	470.7	50	500	0	94.1	74 - 124	500.5	6.15	20	
Trichloroethene	2193	25	500	1724	93.8	79 - 123	2239	2.1	20	
Vinyl chloride	578.2	25	500	0	116	58 - 137	650.7	11.8	20	
Surr: 1,2-Dichloroethane-d4	*1128*	*25*	*1250*	*0*	*90.3*	*81 - 118*	*1104*	*2.17*	*20*	
Surr: 4-Bromofluorobenzene	*1180*	*25*	*1250*	*0*	*94.4*	*85 - 114*	*1183*	*0.206*	*20*	
Surr: Dibromofluoromethane	*1079*	*25*	*1250*	*0*	*86.3*	*80 - 119*	*1124*	*4.11*	*20*	
Surr: Toluene-d8	*1231*	*25*	*1250*	*0*	*98.5*	*89 - 112*	*1251*	*1.65*	*20*	

The following samples were analyzed in this batch:

HS20101123-05	HS20101123-06	HS20101123-07	HS20101123-08
HS20101123-09	HS20101123-10	HS20101123-11	

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371123 (0) **Instrument: ManTech01** **Method: ALKALINITY BY SM2320B**

MBLK Sample ID: **WBLKW3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 01:56**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796162** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 02:04**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796163** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1019	5.00	1000	0	102	85 - 115				

LCSD Sample ID: **LCSD3-201022** Units: **mg/L** Analysis Date: **23-Oct-2020 02:14**
Client ID: Run ID: **ManTech01_371123** SeqNo: **5796164** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1010	5.00	1000	0	101	85 - 115	1019	0.838	20	

DUP Sample ID: **HS20101123-01DUP** Units: **mg/L** Analysis Date: **23-Oct-2020 02:26**
Client ID: **16WW56-201021** Run ID: **ManTech01_371123** SeqNo: **5796166** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	235.3	5.00					232.9	0.995	20	

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371188 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-102220** Units: **mg/L** Analysis Date: **22-Oct-2020 23:45**
Client ID: Run ID: **ICS-Integrion_371188** SeqNo: **5797283** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Nitrogen, Nitrate (As N)	0.100	0.100								U

LCS Sample ID: **LCS-102220** Units: **mg/L** Analysis Date: **23-Oct-2020 00:03**
Client ID: Run ID: **ICS-Integrion_371188** SeqNo: **5797284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.991	0.100	4	0	99.8	80 - 120				
Nitrogen, Nitrate (As N)	4.133	0.100	4	0	103	80 - 120				

MS Sample ID: **HS20101123-01MS** Units: **mg/L** Analysis Date: **22-Oct-2020 21:57**
Client ID: **16WW56-201021** Run ID: **ICS-Integrion_371188** SeqNo: **5797279** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	6.38	0.100	2	3.955	121	80 - 120				S
Nitrogen, Nitrate (As N)	3.169	0.100	2	0	158	80 - 120				S

MSD Sample ID: **HS20101123-01MSD** Units: **mg/L** Analysis Date: **22-Oct-2020 22:15**
Client ID: **16WW56-201021** Run ID: **ICS-Integrion_371188** SeqNo: **5797280** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	6.364	0.100	2	3.955	120	80 - 120	6.38	0.256	20	S
Nitrogen, Nitrate (As N)	2.904	0.100	2	0	145	80 - 120	3.169	8.7	20	S

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R371917 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:19**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814879** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS-110220** Units: **mg/L** Analysis Date: **02-Nov-2020 11:37**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814880** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.828	0.100	4	0	95.7	80 - 120				
Sulfate	18.37	0.500	20	0	91.8	80 - 120				

MS Sample ID: **HS20101310-11MS** Units: **mg/L** Analysis Date: **03-Nov-2020 06:49**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814901** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.111	0.100	2	1.274	91.9	80 - 120				
Sulfate	137.5	0.500	10	128.6	89.3	80 - 120				EO

MSD Sample ID: **HS20101310-11MSD** Units: **mg/L** Analysis Date: **03-Nov-2020 07:07**
Client ID: Run ID: **ICS-Integrion_371917** SeqNo: **5814902** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.191	0.100	2	1.274	95.9	80 - 120	3.111	2.53	20	
Sulfate	135.3	0.500	10	128.6	66.7	80 - 120	137.5	1.66	20	SEO

The following samples were analyzed in this batch: HS20101123-01 HS20101123-04 HS20101123-09

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101123

QC BATCH REPORT

Batch ID: R372041 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110320** Units: **mg/L** Analysis Date: **03-Nov-2020 13:46**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817805** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-110320** Units: **mg/L** Analysis Date: **03-Nov-2020 14:04**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817806** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.905	0.100	4	0	97.6	80 - 120				

MS Sample ID: **HS20110128-11MS** Units: **mg/L** Analysis Date: **04-Nov-2020 19:14**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817837** PrepDate: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	9.856	0.200	4	6.126	93.2	80 - 120				

MSD Sample ID: **HS20110128-11MSD** Units: **mg/L** Analysis Date: **04-Nov-2020 19:32**
Client ID: Run ID: **ICS-Integrion_372041** SeqNo: **5817838** PrepDate: DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	11.23	0.200	4	6.126	127	80 - 120	9.856	13	20	S

The following samples were analyzed in this batch: HS20101123-05 HS20101123-06 HS20101123-07 HS20101123-08

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101123**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 10-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101123

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	Sub
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	WET209
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	VOA091
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	RSK008
HS20101123-01	16WW56-201021	Login	10/22/2020 12:31:24 PM	PMG	Sub

ALS Houston, US Date: 10-Nov-20

Sample Receipt Checklist

Work Order ID: HS20101123 **Date/Time Received:** 22-Oct-2020 09:10

Client Name: CBI-Houston **Received by:** Jared R. Makan

Completed By: /S/ Paresh M. Giga (eSignature) 22-Oct-2020 12:58 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 22-Oct-2020 19:41 (Date/Time)

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☐	No ☑	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	2.1C U/C	IR31
Cooler(s)/Kit(s):	44257	
Date/Time sample(s) sent to storage:	10/22/2020 13:20	

Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Head space
16RW11-201021 All vials
16RW11-201021-FD Vials 2 & 3

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Modashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. 501032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D. / Time	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW56-201021	W6	10/21/20/0750		10	X	X	X	X	X	X					
16WW56-201021-MS	W6	10/21/20/0750		10	X	X	X	X	X	X					
16WW56-201021-MSD	W6	10/21/20/0750		10	X	X	X	X	X	X					
16RW11-201021	W6	10/21/20/0845		4	X					X					
16RW11-201021-FD	W6	10/21/20/0845		4	X					X					
16IW20-201021	W6	10/21/20/0930		10	X	X	X	X	X	X					
16WW40-201021	W6	10/21/20/1015		7	X	X			X	X					
16WW12-201021	W6	10/21/20/1100		7	X	X			X	X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/21/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
J. Mussenn	10/22/20	09:10							

Remarks: Cooler 442571 1431
Temp 2.1°C CFU

HS20101123

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Hodashia

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.: 511032

Job: **LHAAP 16 October 2020**

Prepared By: Scott Beesinger

P.O. Number:

Field Sample I.D. / Time	Sample Matrix	Date /	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16RW04-201021	WG	10/21/20/1145		7	X	X			X	X					
16RW04-201021-FD	WG	10/21/20/1145		7	X	X			X	X					
16EW02-201021	WG	10/21/20/1235		10	X	X	X	X	X	X					
16EW06-201021	WG	10/21/20/1330		4	X					X					
16EW06-201021-FD	WG	10/21/20/1330		4	X					X					
TRIP BLANK-201021	W	10/21/20		2	X										

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/21/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
S. Mureen	10/22/20	09:10							

Remarks:

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101123

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

44257

CUSTODY SEAL

Date: 10/21/20 Time: 1430
Name: Scott Beesinger
Company: BHMTX

Seal Broken By:
Date: 10/22/2020

44257 OCT 21 20

Must Deliver Next Business Day
Time and Tempature Sensitive!

44257

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 29SEP20
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 26x14x14 IN

TO **CLIENT SERVICES**
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5858
REF: LHAAP 16 - BO 74064 - RJ

RMA:

FedEx Express

FedEx
TRK# 0221 1891 8880 8733

THU - 22 OCT 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

#475872 10/21 5681J2/A27E/8766

October 29, 2020 Service Request No:E2001035

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101123

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001035.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001035
Project:	HS20101123	**Date Received:**	10/22/20
Sample Matrix:	L		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eleven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Due to the sample matrix, samples E2001035-010/011 had to be prepped as solids (samples viscous).

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000537: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS, DLCS, MS, & DMS recoveries are within QC limits.

EQ2000548: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001035
Project: HS20101123

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001035-001	16WW56-201021	10/21/2020	0750
E2001035-002	16RW11-201021	10/21/2020	0845
E2001035-003	16RW11-201021-FD	10/21/2020	0845
E2001035-004	16IW20-201021	10/21/2020	0930
E2001035-005	16WW40-201021	10/21/2020	1015
E2001035-006	16WW12-201021	10/21/2020	1100
E2001035-007	16RW04-201021	10/21/2020	1145
E2001035-008	16RW04-201021-FD	10/21/2020	1145
E2001035-009	16EW02-201021	10/21/2020	1235
E2001035-010	16EW06-201021	10/21/2020	1330
E2001035-011	16EW06-201021-FD	10/21/2020	1330

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001035-001	16WW56-201021	Ground Water	10/21/20 0750	**IV**
E2001035-002	16RW11-201021	Ground Water	10/21/20 0845	**IV**
E2001035-003	16RW11-201021-FD	Ground Water	10/21/20 0845	**IV**
E2001035-004	16IW20-201021	Ground Water	10/21/20 0930	**IV**
E2001035-005	16WW40-201021	Ground Water	10/21/20 1015	**IV**
E2001035-006	16WW12-201021	Ground Water	10/21/20 1100	**IV**
E2001035-007	16RW04-201021	Ground Water	10/21/20 1145	**IV**
E2001035-008	16RW04-201021-FD	Ground Water	10/21/20 1145	**IV**
E2001035-009	16EW02-201021	Ground Water	10/21/20 1235	**IV**
E2001035-010	16EW06-201021	Misc. Solid	10/21/20 1330	**IV**
E2001035-011	16EW06-201021-FD	Misc. Solid	10/21/20 1330	**IV**

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14995**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS20101123
TSR: Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	SUB_Perch-6850			05 Nov 2020
2.	**HS20101123-02**	**16RW11-201021**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
3.	**HS20101123-03**	**16RW11-201021-FD**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
4.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	SUB_Perch-6850			05 Nov 2020
5.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	SUB_Perch-6850			05 Nov 2020
6.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	SUB_Perch-6850			05 Nov 2020
7.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
8.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
9.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14995**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		05 Nov 2020
10.	**HS20101123-10**	**16EW06-201021**	**Groundwater**	**21 Oct 2020 13:30**
		SUB_Perch-6850		05 Nov 2020
11.	**HS20101123-11**	**16EW06-201021-FD**	**Groundwater**	**21 Oct 2020 13:30**
		SUB_Perch-6850		05 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 10/22/20 1645

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1824

Date/Time Received: 10/22/20 Initials: CH

Date/Time Logged in: 10/22/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No
   Were they intact? ○ Yes ○ No ✓ N/A
   Were they signed and dated? ○ Yes ○ No ✓ N/A
   If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		10/22/20	1645	CH	3.3	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001035-001	16WW56-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001035-002	16RW11-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001035-003	16RW11-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001035-004	16IW20-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001035-005	16WW40-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001035-006	16WW12-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001035-007	16RW04-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001035-008	16RW04-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001035-009	16EW02-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001036-001	16WW27-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001036-002	16WW27-201022-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001036-003	16WW43-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001036-004	16WW13-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001036-005	16WW42-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001036-006	16RW02-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001036-007	16RW05-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001036-008	16EW03-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2000537-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000537-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000537-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000537-04	16WW56-201021 MS	.01	6850/ClO4 DOD			Liquid	10mL	
22	EQ2000537-05	16WW56-201021 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000537-02	1.00µL	EQ2000537-03	1.00µL	EQ2000537-04	1.00µL	EQ2000537-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001035-001	100.00µL	E2001035-002	100.00µL	E2001035-003	100.00µL	E2001035-004	100.00µL	E2001035-005	100.00µL	E2001035-006	100.00µL
E2001035-007	100.00µL	E2001035-008	100.00µL	E2001035-009	100.00µL	E2001036-001	100.00µL	E2001036-002	100.00µL	E2001036-003	100.00µL
E2001036-004	100.00µL	E2001036-005	100.00µL	E2001036-006	100.00µL	E2001036-007	100.00µL	E2001036-008	100.00µL	EQ2000537-01	100.00µL
EQ2000537-02	100.00µL	EQ2000537-03	100.00µL	EQ2000537-04	100.00µL	EQ2000537-05	100.00µL				

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

Preparation Steps

Step: Preparation
Started: 10/26/20 14:30
Finished: 10/26/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/27/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

Prep Run#: 368660 **Prep WorkFlow:** Gen CLO4 **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/28/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001025-001	2020-BH-1-1	.01	6850/ClO4			Soil	1.006g	
2	E2001025-002	2020-BH-1-7	.01	6850/ClO4			Soil	1.040g	
3	E2001035-010	16EW06-201021	.02	6850/ClO4 DOD			Misc. Solid	1.003g	
4	E2001035-011	16EW06-201021-FD	.02	6850/ClO4 DOD			Misc. Solid	1.066g	
5	E2001036-009	16EW07-201022	.02	6850/ClO4 DOD			Misc. Solid	1.070g	
6	EQ2000548-01	MB		6850/ClO4 DOD			Solid	1.047g	
7	EQ2000548-02	LCS		6850/ClO4 DOD			Solid	0.980g	
8	EQ2000548-03	DLCS		6850/ClO4 DOD			Solid	0.977g	
9	EQ2000548-04	2020-BH-1-1 MS	.01	6850/ClO4			Solid	0.994g	
10	EQ2000548-05	2020-BH-1-1 DMS	.01	6850/ClO4			Solid	0.985g	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL EQ2000548-05 100.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001025-001 100.00µL E2001025-002 100.00µL E2001035-010 100.00µL E2001035-011 100.00µL E2001036-009 100.00µL EQ2000548-01 100.00µL
EQ2000548-01 100.00µL EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL
EQ2000548-05 100.00µL

Preparation Steps

Step: Extraction
Started: 10/28/20 14:30
Finished: 10/28/20 15:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/29/2020

Preparation Information Benchsheet

Prep Run#: 368660
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: Gen CLO4
Prep Method: Method

Status: Prepped
Prep Date/Time: 10/28/20 14:30

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.309**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:43	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021	**Units:**	µg/L
Lab Code:	E2001035-002	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:51	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-003	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:59	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0930
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16IW20-201021	**Units:**	µg/L
Lab Code:	E2001035-004	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/28/20 13:29	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1015
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW40-201021	**Units:**	µg/L
Lab Code:	E2001035-005	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.240**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:23	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1100
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW12-201021	**Units:**	µg/L
Lab Code:	E2001035-006	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**18.5**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:31	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021	**Units:**	µg/L
Lab Code:	E2001035-007	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:38	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-008	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:46	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1235
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW02-201021	**Units:**	µg/L
Lab Code:	E2001035-009	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:54	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021	**Units:**	µg/Kg
Lab Code:	E2001035-010	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.997	0.750	0.300	1	10/28/20	10/28/20 18:09	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021-FD	**Units:**	µg/Kg
Lab Code:	E2001035-011	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.938	0.750	0.300	1	10/28/20	10/28/20 18:17	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000537-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:04	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/Kg
Lab Code:	EQ2000548-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.955	0.750	0.300	1	10/28/20	10/28/20 17:14	368660	701275	

Accuracy & Precision

ALS Environmental - Houston HRMS
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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123
Sample Matrix: Ground Water

Service Request: E2001035
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: As Received

Extraction Lot: 368462

	Lab Control Sample EQ2000537-02			Duplicate Lab Control Sample EQ2000537-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.101	0.100	101	0.104	0.100	104	84 - 119	3	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:12	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:20	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20
Sample Matrix:	Misc. Solid		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/Kg
Prep Method:	Method	**Basis:**	As Received
		Extraction Lot:	368660

	Lab Control Sample EQ2000548-02			Duplicate Lab Control Sample EQ2000548-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	103	102	101	109	102	106	84 - 121	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**103**		1.02	0.765	0.307	1	10/28/20	10/28/20 17:22	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**109**		1.02	0.768	0.308	1	10/28/20	10/28/20 17:30	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Analytical Method: 6850

		16WW56-201021MS				16WW56-201021DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000537-04				EQ2000537-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.309	0.407	0.100	98		0.407	0.100	98	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-04	**Basis:**	As Received
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:28	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-05	**Basis:**	As Received
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:35	368462	701198	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte	Curve Fit	Weighting		
Perchlorate	**Linear**	**Equal**	**R2 = 0.9997655579102110**	**Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

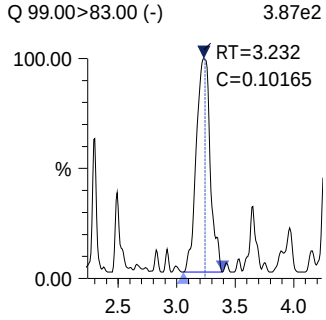
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

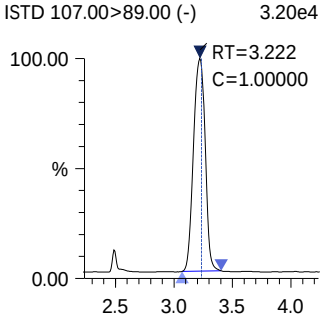
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

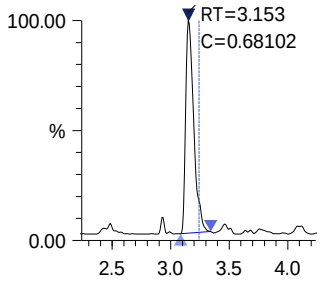
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

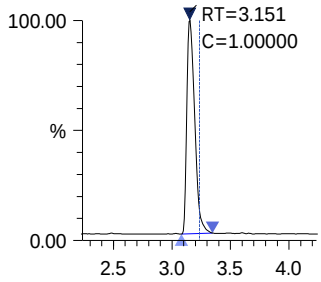
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

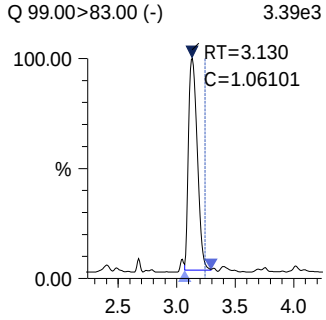
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

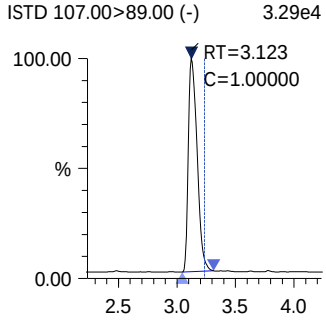
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

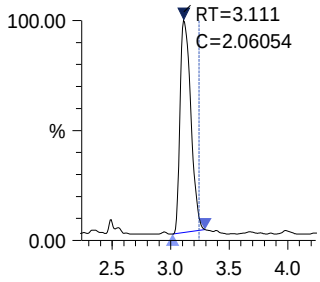
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

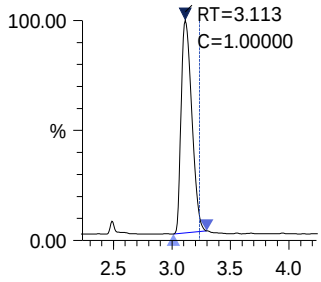
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

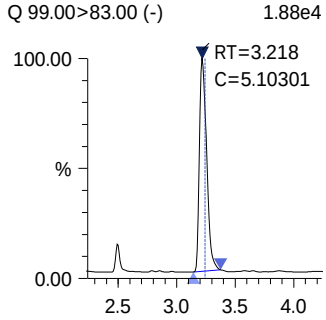
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

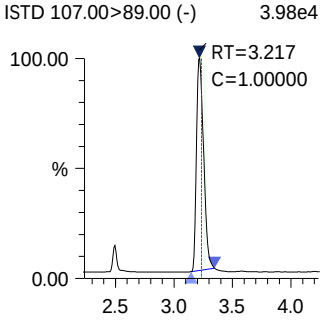
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

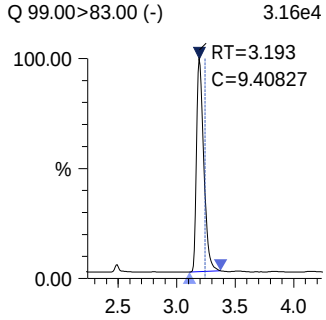
PERCHLORATE6

Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

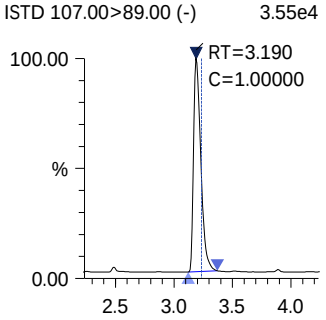
Perchlorate

Conc 9.40827
Area 136097



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693



ALS Group Houston

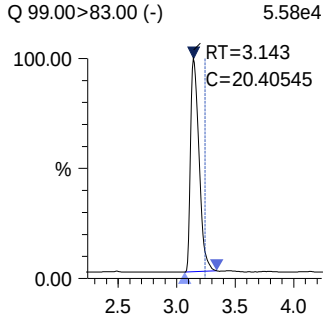
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

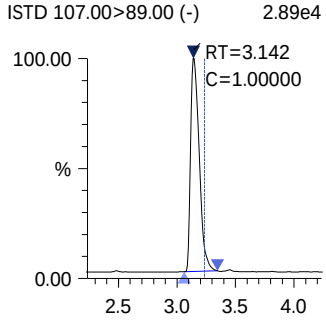
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

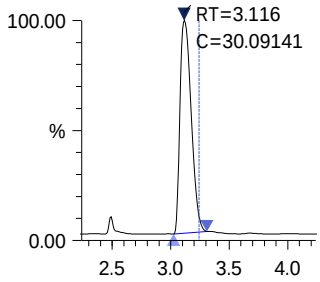
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

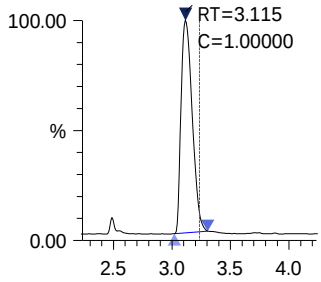
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

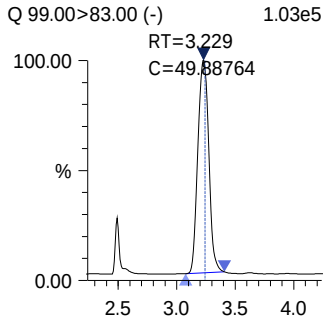
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

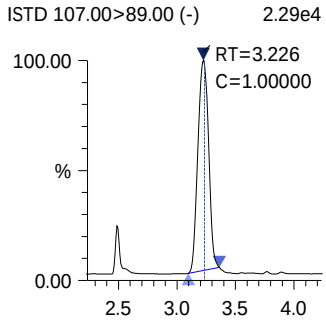
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

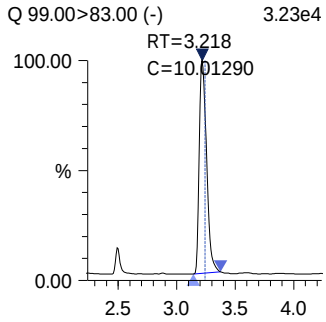
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

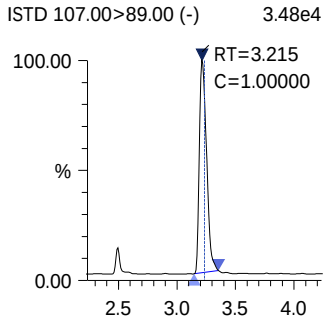
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: EC2000045

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒		10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 13:07
26	E2000949-001		20201026_027	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:48
27	E2000949-002		20201026_028	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:56
28	EQ2000537-01		20201026_029	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:04
29	EQ2000537-02		20201026_030	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:12
30	EQ2000537-03		20201026_031	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:20
31	EQ2000537-04		20201026_032	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:28
32	EQ2000537-05		20201026_033	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:35
33	E2001035-001		20201026_034	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:43
34	E2001035-002		20201026_035	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:51
35	E2001035-003		20201026_036	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:59
36	PERCHLORATE7		20201026_037	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 15:07
37	E2001035-004		20201026_038	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:15
38	E2001035-005		20201026_039	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:23
39	E2001035-006		20201026_040	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:31
40	E2001035-007		20201026_041	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:38
41	E2001035-008		20201026_042	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:46
42	E2001035-009		20201026_043	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:54
43	E2001036-001		20201026_044	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:02
44	E2001036-002		20201026_045	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:10
45	E2001036-003		20201026_046	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:18
46	E2001036-004		20201026_047	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:26
47	PERCHLORATE7		20201026_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 16:34
48	E2001036-005		20201026_049	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:42
49	E2001036-006		20201026_050	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:49
50	E2001036-007		20201026_051	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:57
51	E2001036-008		20201026_052	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:05
52	PERCHLORATE7		20201026_053	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 17:13
53	EQ2000538-01		20201026_054	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:21
54	EQ2000538-02		20201026_055	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:29
55	EQ2000538-03		20201026_056	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:37
56	E2001028-001		20201026_057	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:45
57	E2001028-002		20201026_058	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:52
58	E2001028-003		20201026_059	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:00
59	E2001028-004		20201026_060	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:08
60	E2001028-005		20201026_061	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:16
61	E2001028-006		20201026_062	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:24

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
62	E2001028-007		20201026_063	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:32
63	PERCHLORATE7		20201026_064	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 18:40
64	E2001028-008		20201026_065	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:48
65	E2001028-009		20201026_066	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:55
66	E2001028-010		20201026_067	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:03
67	E2001028-011		20201026_068	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:11
68	E2001028-012		20201026_069	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:19
69	E2001028-013		20201026_070	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:27
70	E2001028-014		20201026_071	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:35
71	E2001028-015		20201026_072	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:43
72	E2001034-014		20201026_073	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:51
73	PERCHLORATE7		20201026_074	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 19:59
74								
75								
76								

20201028

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201028_001	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:12
2	null		20201028_002	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:17
3	IB		20201028_003	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:23
4	IB		20201028_004	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:31
5	LODV		20201028_005	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:38
6	ICS		20201028_006	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:46
7	PERCHLORATE7		20201028_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 9:54
8	E2001035-004X2		20201028_008	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:19
9	E2001036-008X2		20201028_009	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:27
10	E2001028-009X100		20201028_010	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:35
11	E2001028-010X50		20201028_011	Perchlorate6850b.lcm	x50	☒		10/28/2020 11:43
12	E2001028-011X100		20201028_012	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:51
13	E2001028-013X100		20201028_014	Perchlorate6850b.lcm	x100	☒		10/28/2020 12:06
14	PERCHLORATE7		20201028_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 12:14
15	E2000949-002X2		20201028_017	Perchlorate6850b.lcm	x2	☒		10/28/2020 12:57
16	E2001028-011X200		20201028_018	Perchlorate6850b.lcm	x200	☒		10/28/2020 13:05
17	E2001028-012X100		20201028_019	Perchlorate6850b.lcm	x100	☒		10/28/2020 13:13
18	PERCHLORATE7		20201028_020	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:21
19	E2001035-004		20201028_021	Perchlorate6850b.lcm	1x	☒		10/28/2020 13:29
20	PERCHLORATE7		20201028_022	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:37
21	PERCHLORATE7		20201028_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 17:06
22	EQ2000548-01		20201028_024	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:14
23	EQ2000548-02		20201028_025	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:22
24	EQ2000548-03		20201028_026	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:30
25	EQ2000548-04		20201028_027	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:38
26	EQ2000548-05		20201028_028	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:46
27	E2001025-001		20201028_029	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:53
28	E2001025-002		20201028_030	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:01
29	E2001035-010		20201028_031	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:09
30	E2001035-011		20201028_032	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:17
31	E2001036-009		20201028_033	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:25
32	PERCHLORATE7		20201028_034	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 18:33
33								
34								
35								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_037

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	NA	NA	NA	4.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_048

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_053

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.52	NA	NA	NA	-4.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	NA	NA	NA	-2.0	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_020

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_022

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_023

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701275
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.93	NA	NA	NA	-0.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_034

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701275
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20 13:07

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_026
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000550-01
Analysis Lot: 701198
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-01	230,699	3.07
Method Blank	EQ2000537-01	251,836	3.06
Lab Control Sample	EQ2000537-02	252,875	3.06
Duplicate Lab Control Sample	EQ2000537-03	250,027	3.06
16WW56-201021MS	EQ2000537-04	114,572	3.04
16WW56-201021DMS	EQ2000537-05	116,922	3.04
16WW56-201021	E2001035-001	119,976	3.03
16RW11-201021	E2001035-002	85,003	3.05
16RW11-201021-FD	E2001035-003	85,286	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20 15:07

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_037
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000550-02
Analysis Lot: 701198
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-02	253,082	3.06
16WW40-201021	E2001035-005	107,556	3.04
16WW12-201021	E2001035-006	113,227	3.04
16RW04-201021	E2001035-007	204,476	3.04
16RW04-201021-FD	E2001035-008	222,558	3.04
16EW02-201021	E2001035-009	142,354	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 16:34

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_048	**Lab Code:**	EQ2000550-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-03	240,567	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 17:13

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_053	**Lab Code:**	EQ2000550-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-04	244,513	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 09:54

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_007	**Lab Code:**	EQ2000550-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-05	188,253	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 12:14

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_015	**Lab Code:**	EQ2000550-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-06	198,091	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 13:21

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_020	**Lab Code:**	EQ2000550-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-07	206,211	3.05
16IW20-201021	E2001035-004	142,110	2.97

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20 13:37

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201028\20201028_022
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000550-08
Analysis Lot: 701198
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-08	217,130	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20 17:06

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201028\20201028_023
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000551-01
Analysis Lot: 701275
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-01	228,962	2.99
Method Blank	EQ2000548-01	237,056	3.05
Lab Control Sample	EQ2000548-02	212,794	3.05
Duplicate Lab Control Sample	EQ2000548-03	206,721	3.05
16EW06-201021	E2001035-010	161,544	3.05
16EW06-201021-FD	E2001035-011	150,930	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 18:33

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_034	**Lab Code:**	EQ2000551-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701275
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-02	225,202	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

PERCHLORATE7

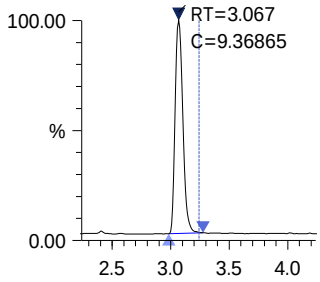
Date acquired: 10/26/2020 1:07:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_026.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 1:07:32 PM	202116	9.36865	20201026_026	3.067	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 1:07:32 PM	230699	1.00000	20201026_026	3.065	25.0000	1.0000	4

Perchlorate

Conc 9.36865
Area 202116

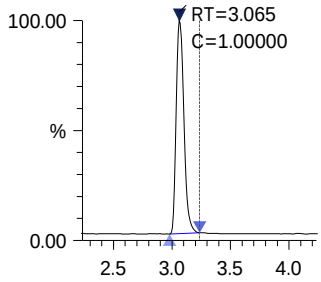
Q 99.00>83.00 (-) 4.48e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 230699

ISTD 107.00>89.00 (-) 5.11e4



ALS Group Houston

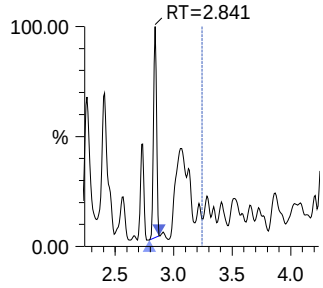
EQ2000537-01

Date acquired: 10/26/2020 2:04:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_029.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-01	10/26/2020 2:04:29 PM	----	----	20201026_029	----	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	EQ2000537-01	10/26/2020 2:04:29 PM	251836	1.00000	20201026_029	3.057	25.0000	1.0000	3

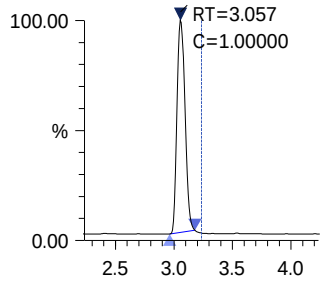
Perchlorate

Conc ----
Area ----
Q 99.00>83.00 (-) 4.04e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 251836
ISTD 107.00>89.00 (-) 5.34e4



ALS Group Houston

EQ2000537-02

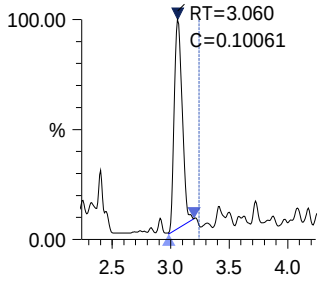
Date acquired: 10/26/2020 2:12:23 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_030.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-02	10/26/2020 2:12:23 PM	3636	0.10061	20201026_030	3.060	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	EQ2000537-02	10/26/2020 2:12:23 PM	252875	1.00000	20201026_030	3.056	25.0000	1.0000	4

Perchlorate

Conc 0.10061
Area 3636

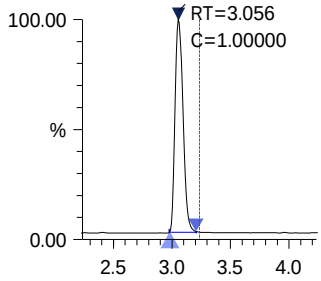
Q 99.00>83.00 (-) 7.92e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 252875

ISTD 107.00>89.00 (-) 5.81e4



ALS Group Houston

EQ2000537-03

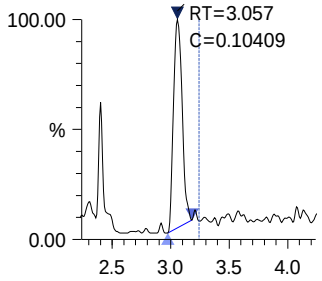
Date acquired: 10/26/2020 2:20:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_031.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-03	10/26/2020 2:20:15 PM	3676	0.10409	20201026_031	3.057	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000537-03	10/26/2020 2:20:15 PM	250027	1.00000	20201026_031	3.057	25.0000	1.0000	5

Perchlorate

Conc 0.10409
Area 3676

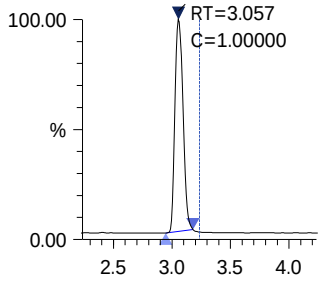
Q 99.00>83.00 (-) 7.41e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 250027

ISTD 107.00>89.00 (-) 5.29e4



ALS Group Houston

EQ2000537-04

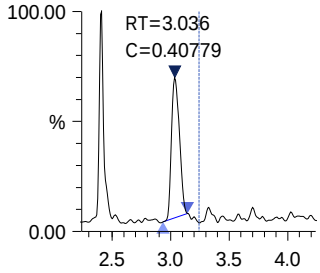
Date acquired: 10/26/2020 2:28:05 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_032.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-04	10/26/2020 2:28:05 PM	4964	0.40779	20201026_032	3.036	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000537-04	10/26/2020 2:28:05 PM	115604	1.00000	20201026_032	3.037	25.0000	1.0000	6

Perchlorate

Conc 0.40779
Area 4964

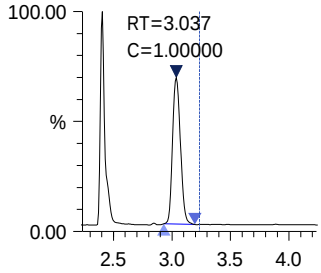
Q 99.00>83.00 (-) 1.61e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 115604

ISTD 107.00>89.00 (-) 3.60e4



ALS Group Houston

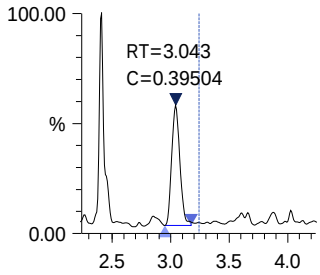
EQ2000537-05

Date acquired: 10/26/2020 2:35:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_033.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-05	10/26/2020 2:35:56 PM	4922	0.39504	20201026_033	3.043	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000537-05	10/26/2020 2:35:56 PM	117876	1.00000	20201026_033	3.038	25.0000	1.0000	7

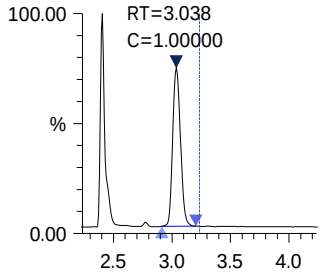
Perchlorate

Conc 0.39504
Area 4922
Q 99.00>83.00 (-) 1.82e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 117876
ISTD 107.00>89.00 (-) 3.44e4



ALS Group Houston

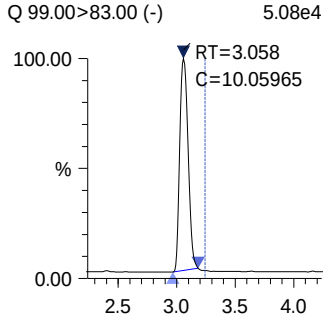
PERCHLORATE7

Date acquired: 10/26/2020 3:07:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_037.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 3:07:28 PM	246952	10.05965	20201026_037	3.058	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 3:07:28 PM	262617	1.00000	20201026_037	3.057	25.0000	1.0000	4

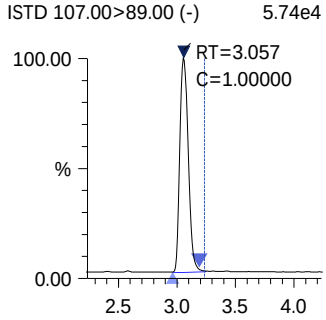
Perchlorate

Conc 10.05965
Area 246952



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 262617



ALS Group Houston

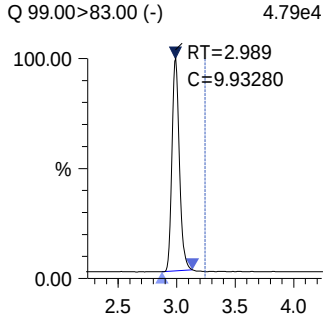
PERCHLORATE7

Date acquired: 10/28/2020 5:06:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_023.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 5:06:37 PM	212604	9.93280	20201028_023	2.989	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 5:06:37 PM	228962	1.00000	20201028_023	2.986	25.0000	1.0000	4

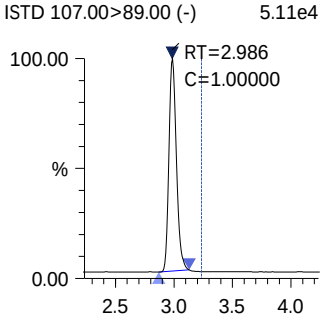
Perchlorate

Conc 9.93280
Area 212604



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 228962



ALS Group Houston

EQ2000548-01

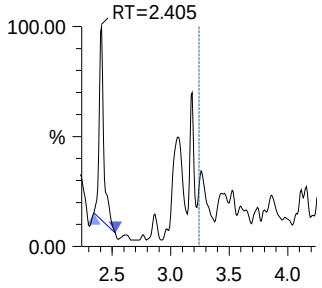
Date acquired: 10/28/2020 5:14:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_024.lcd
Vial: 45 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-01	10/28/2020 5:14:30 PM	----	----	20201028_024	----	25.0000	1.0000	45
Sodium Perchlorate-18O4_IS	EQ2000548-01	10/28/2020 5:14:30 PM	237056	1.00000	20201028_024	3.052	25.0000	1.0000	45

Perchlorate

Conc ----
Area ----

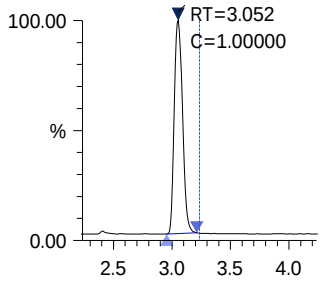
Q 99.00>83.00 (-) 3.39e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 237056

ISTD 107.00>89.00 (-) 4.88e4



ALS Group Houston

EQ2000548-02

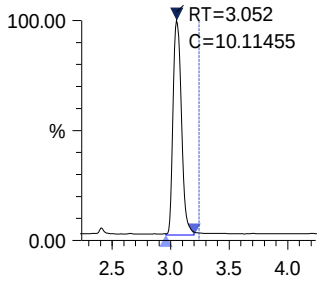
Date acquired: 10/28/2020 5:22:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_025.lcd
Vial: 46 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-02	10/28/2020 5:22:24 PM	201186	10.11455	20201028_025	3.052	25.0000	1.0000	46
Sodium Perchlorate-18O4_IS	EQ2000548-02	10/28/2020 5:22:24 PM	212794	1.00000	20201028_025	3.049	25.0000	1.0000	46

Perchlorate

Conc 10.11455
Area 201186

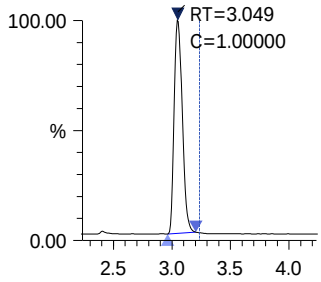
Q 99.00>83.00 (-) 4.04e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 212794

ISTD 107.00>89.00 (-) 4.43e4



ALS Group Houston

EQ2000548-03

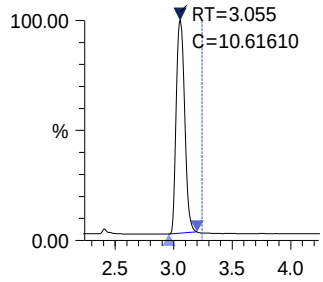
Date acquired: 10/28/2020 5:30:17 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_026.lcd
Vial: 47 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-03	10/28/2020 5:30:17 PM	205086	10.61610	20201028_026	3.055	25.0000	1.0000	47
Sodium Perchlorate-18O4_IS	EQ2000548-03	10/28/2020 5:30:17 PM	206721	1.00000	20201028_026	3.052	25.0000	1.0000	47

Perchlorate

Conc 10.61610
Area 205086

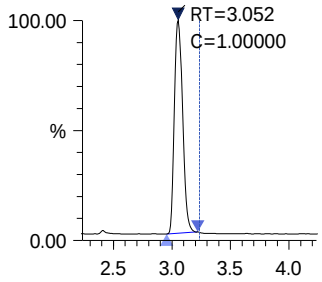
Q 99.00>83.00 (-) 4.15e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 206721

ISTD 107.00>89.00 (-) 4.26e4



ALS Group Houston

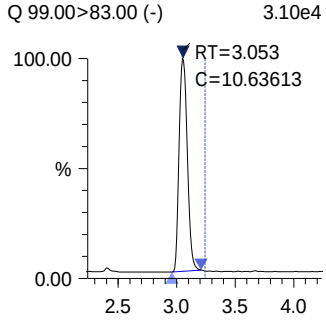
EQ2000548-04

Date acquired: 10/28/2020 5:38:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_027.lcd
Vial: 48 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-04	10/28/2020 5:38:09 PM	148600	10.63613	20201028_027	3.053	25.0000	1.0000	48
Sodium Perchlorate-18O4_IS	EQ2000548-04	10/28/2020 5:38:09 PM	149504	1.00000	20201028_027	3.050	25.0000	1.0000	48

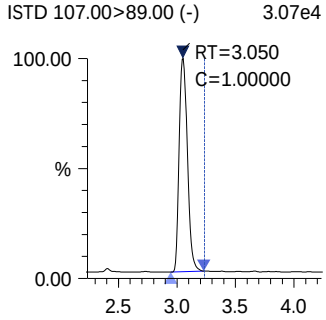
Perchlorate

Conc 10.63613
Area 148600



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 149504



ALS Group Houston

EQ2000548-05

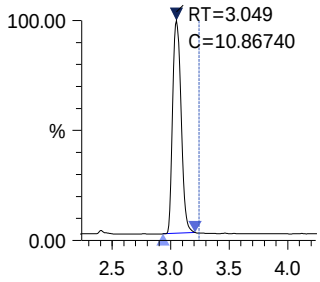
Date acquired: 10/28/2020 5:46:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_028.lcd
Vial: 49 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-05	10/28/2020 5:46:02 PM	188229	10.86740	20201028_028	3.049	25.0000	1.0000	49
Sodium Perchlorate-18O4_IS	EQ2000548-05	10/28/2020 5:46:02 PM	185364	1.00000	20201028_028	3.046	25.0000	1.0000	49

Perchlorate

Conc 10.86740
Area 188229

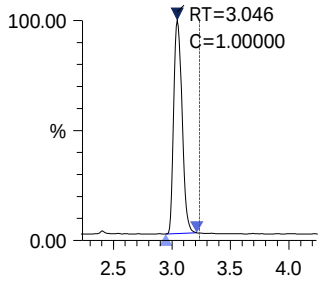
Q 99.00>83.00 (-) 3.78e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 185364

ISTD 107.00>89.00 (-) 3.75e4



ALS Group Houston

PERCHLORATE7

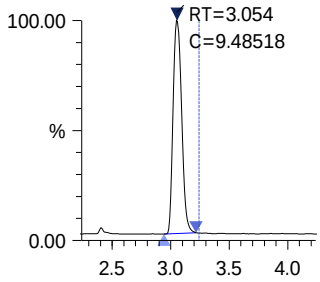
Date acquired: 10/28/2020 6:33:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_034.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 6:33:19 PM	199740	9.48518	20201028_034	3.054	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 6:33:19 PM	225202	1.00000	20201028_034	3.051	25.0000	1.0000	4

Perchlorate

Conc 9.48518
Area 199740

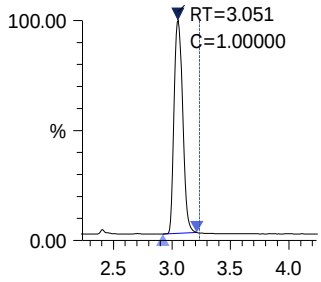
Q 99.00>83.00 (-) 3.98e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 225202

ISTD 107.00>89.00 (-) 4.43e4



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November 06, 2020

Analytical Report for Service Request No: K2009641

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 23, 2020
For your reference, these analyses have been assigned our service request number **K2009641.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009641
Date Received: 10/23/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Seven ground water samples were received for analysis at ALS Environmental on 10/23/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

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K20096041

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Houston, TX 77099
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F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101123
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
2.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
3.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
4.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
5.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
6.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
7.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020

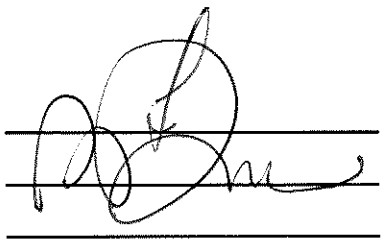
Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

K2009641

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

QC Level: DOD IV (DoD Data Package)

Relinquished By:		Date/Time:	10/22/2020 1800.
Received By:		Date/Time:	10/23/20 0945
Cooler ID(s):		Temperature(s):	

PM KL

Cooler Receipt and Preservation Form

Client ALS - Houston Service Request K20 091641

Received: 10/23/20 Opened: 10/23/20 By: BR Unloaded: 10/23/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 2 front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
MH	3.4	1002				189188818907	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW56-201021	K2009641-001	**0.72**	0.50	0.20	0.07	1	11/03/20 11:36	
16IW20-201021	K2009641-002	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW40-201021	K2009641-003	**7.35**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW12-201021	K2009641-004	**3.98**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021	K2009641-005	**2.70**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021-FD	K2009641-006	**2.67**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW02-201021	K2009641-007	**7.36**	0.50	0.20	0.07	1	11/03/20 11:36	
Method Blank	K2009641-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009641-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	0.72	1.99	1.35	94 #	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009641-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	0.72	26.3	25.0	102	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009641-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2009134, 9255, 9599, 9641, 9670

Tier: II II IV IV II

Date Analyzed: 11.3.20

Analyst: MAS Run # 701641

Analysis: SM 5310C/TOCT

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS:

-Rpd between source & dup sample is high but both results are below 5x the MRL

Final Approved by: _____ Date: 11/5/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2009134-002	Carbon, Total Organic	N/A		Water	0.64 mg/L	10 mL	64 mg/L	100	7	50			11/3/20 11:36:00	N	II
K2009134-003	Carbon, Total Organic	N/A		Water	0.36 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009134-004	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009255-001	Carbon, Total Organic	N/A		Ground Water	31.28 mg/L	10 mL	31.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-002	Carbon, Total Organic	N/A		Ground Water	14.47 mg/L	10 mL	14.5 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-003	Carbon, Total Organic	N/A		Ground Water	14.31 mg/L	10 mL	14.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009599-001	Carbon, Total Organic	N/A		Ground Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-002	Carbon, Total Organic	N/A		Ground Water	3.74 mg/L	10 mL	3.74 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-003	Carbon, Total Organic	N/A		Ground Water	8.44 mg/L	10 mL	8.44 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009599-004	Carbon, Total Organic	N/A		Ground Water	4.52 mg/L	10 mL	4.52 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-005	Carbon, Total Organic	N/A		Ground Water	33.24 mg/L	10 mL	332 mg/L	10	0.7	5.0			11/3/20 11:36:00	N	IV
K2009641-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009641-002	Carbon, Total Organic	N/A		Ground Water	14.39 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-003	Carbon, Total Organic	N/A		Ground Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-004	Carbon, Total Organic	N/A		Ground Water	3.98 mg/L	10 mL	3.98 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-005	Carbon, Total Organic	N/A		Ground Water	2.70 mg/L	10 mL	2.70 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-006	Carbon, Total Organic	N/A		Ground Water	2.67 mg/L	10 mL	2.67 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-007	Carbon, Total Organic	N/A		Ground Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009670-001	Carbon, Total Organic	N/A		Water	12.78 mg/L	10 mL	12.8 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-01	Carbon, Total Organic	CCV		Water	25.74 mg/L	10 mL	25.7 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-02	Carbon, Total Organic	CCV		Water	26.06 mg/L	10 mL	26.1 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-03	Carbon, Total Organic	CCV		Water	25.82 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-04	Carbon, Total Organic	CCV		Water	25.86 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2017240-10	Carbon, Total Organic	LCS		Water	24.00 mg/L	10 mL	24.0 mg/L	1	0.07	0.50	96		11/3/20 11:36:00	N	II
KQ2017240-11	Carbon, Total Organic	MS	K2009641-001	Ground Water	26.31 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	102		11/3/20 11:36:00	N	IV
KQ2017240-12	Carbon, Total Organic	DUP	K2009641-001	Ground Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50		94*	11/3/20 11:36:00	N	IV
KQ2017240-13	Carbon, Total Organic	MS	K2009599-003	Ground Water	30.52 mg/L	10 mL	30.5 mg/L	1	0.07	0.50	88		11/3/20 11:36:00	N	IV
KQ2017240-14	Carbon, Total Organic	DUP	K2009599-003	Ground Water	8.47 mg/L	10 mL	8.47 mg/L	1	0.07	0.50		<1	11/3/20 11:36:00	N	IV
KQ2017240-15	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-16	Carbon, Total Organic	CCV		Ground Water	25.81 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-17	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-18	Carbon, Total Organic	CCV		Ground Water	25.87 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Fusion Report - 11032020
Tuesday, November 03, 2020 11:36 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 11:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.77	29.98	16.21	49.60	05:24
2	TC Clean	39.08	52.21	13.13	50.34	04:05
3	TC Clean	8.61	21.95	13.34	50.36	03:51
4	TC Clean	10.08	23.09	13.01	50.34	03:51

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 11:58

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.19	13.34	13.15	49.82	05:24
2	TC Clean	12.57	25.54	12.97	50.09	04:01
3	TC Clean	5.95	18.94	12.99	50.33	03:49
4	TC Clean	8.24	21.10	12.85	50.24	03:47

Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 12:20

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.36	13.22	12.86	49.50	05:11
2	TC Clean	11.19	24.11	12.92	50.30	04:04
3	TC Clean	5.27	18.13	12.86	50.08	03:46
4	TC Clean	8.34	21.24	12.90	50.07	03:45

Sample Type: Blank (Creating v1471) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/11/03 12:49

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.46	22.30	12.83	49.38	05:13
2	TC Clean	11.94	24.85	12.91	50.24	04:06
3	TC Clean	8.41	21.21	12.79	50.08	03:56
4	TC Clean	8.14	20.76	12.62	50.22	03:56
5	Reagent Blank	13.63	26.37	12.75	50.10	05:06
6	Acid Blank	0.79	13.42	12.63	49.86	05:30

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1929 ppm	0.0000 ppm	0.0000%	2020/11/03 13:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1929	1.9285	11.16	23.76	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0291 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0291	260.2915	192.48	205.17	12.69	50.55	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.44	21.27	12.82	50.57	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 14:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.45	21.04	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.3615 ppm (PASS)	0.0000 ppm	0%	2020/11/03 14:22

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

	Type									
C	TOC	25.0 ppm	1	24.3615	243.6154	180.78	193.55	12.77	50.51	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3202 ppm	0.0000 ppm	0.0000%	2020/11/03 14:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3202	3.2015	12.06	24.80	12.74	50.46	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2009468-008 DOC	0.7621 ppm	0.0319 ppm	4.1800%	2020/11/03 14:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7396	7.3955	15.00	27.80	12.80	50.44	10:26
2	TOC	0.7846	7.8460	15.32	27.92	12.60	50.56	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2009501-001 DOC	10.6458 ppm	0.0354 ppm	0.3300%	2020/11/03 15:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.6708	106.7080	84.66	97.52	12.85	50.50	10:26
2	TOC	10.6208	106.2076	84.31	97.01	12.69	50.48	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2009501-003 DOC 4x	17.4630 ppm	0.0816 ppm	0.4700%	2020/11/03 15:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.4053	174.0525	131.91	144.74	12.83	50.51	10:27
2	TOC	17.5207	175.2072	132.72	145.57	12.86	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC)	CAS_salt_010711	CAS_salt_010711

(v1471) (v4) (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2009501-003DUP DOC 4x	17.0412 ppm	0.0286 ppm	0.1700%	2020/11/03 16:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.0614	170.6141	129.49	141.95	12.45	50.38	10:29
2	TOC	17.0209	170.2092	129.21	141.96	12.75	50.51	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2009501-003MS DOC 5x	40.6505 ppm	0.1104 ppm	0.2700%	2020/11/03 16:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	40.5725	405.7247	294.42	307.16	12.74	50.46	10:25
2	TOC	40.7286	407.2857	295.52	308.25	12.74	50.41	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2009560-001 DOC	1.7795 ppm	0.0095 ppm	0.5300%	2020/11/03 17:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7862	17.8619	22.34	35.19	12.85	50.34	10:28
2	TOC	1.7728	17.7279	22.25	34.85	12.60	50.48	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2009560-002 DOC	0.4700 ppm	0.0203 ppm	4.3100%	2020/11/03 17:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4557	4.5572	13.01	25.84	12.83	50.43	10:28
2	TOC	0.4844	4.8438	13.21	26.02	12.81	50.39	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.7386 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7386	257.3862	190.44	203.18	12.73	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.77	20.63	12.85	50.36	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2009560-004 DOC	1.1781 ppm	0.0266 ppm	2.2600%	2020/11/03 18:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1592	11.5923	17.94	30.81	12.87	50.40	10:30
2	TOC	1.1969	11.9687	18.21	30.97	12.76	50.55	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2009560-005 DOC	0.9729 ppm	0.0276 ppm	2.8400%	2020/11/03 19:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9924	9.9244	16.77	29.26	12.49	50.48	10:28
2	TOC	0.9534	9.5338	16.50	29.20	12.71	50.43	10:26

Dilution	Blank Contribution	Method	Calibration

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	12	TOC	K2009560-006 DOC	0.7008 ppm	0.0281 ppm	4.0100%	2020/11/03 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6810	6.8096	14.59	27.49	12.90	50.41	10:27
2	TOC	0.7207	7.2073	14.87	27.57	12.70	50.40	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K2009560-007 DOC	0.8376 ppm	0.0023 ppm	0.2800%	2020/11/03 20:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8359	8.3592	15.68	28.40	12.73	50.37	10:26
2	TOC	0.8392	8.3920	15.70	28.31	12.61	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K2009560-008 DOC	0.5497 ppm	0.0073 ppm	1.3200%	2020/11/03 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5548	5.5480	13.70	26.46	12.75	50.39	10:25
2	TOC	0.5445	5.4453	13.63	26.56	12.93	50.36	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	K2009560-009 DOC	0.7137 ppm	0.0290 ppm	4.0700%	2020/11/03 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6932	6.9322	14.67	27.47	12.80	50.36	10:27
2	TOC	0.7343	7.3428	14.96	27.64	12.68	50.34	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K2009599-001	14.3778 ppm	0.1881 ppm	1.3100%	2020/11/03 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.5108	145.1081	111.60	124.25	12.65	50.36	10:30
2	TOC	14.2448	142.4480	109.74	122.50	12.76	50.38	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	17	TOC	K2009599-002	3.7353 ppm	0.0174 ppm	0.4700%	2020/11/03 21:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7476	37.4761	36.10	48.70	12.60	50.34	10:27
2	TOC	3.7229	37.2295	35.93	48.72	12.79	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	18	TOC	K2009599-003	8.4434 ppm	0.2066 ppm	2.4500%	2020/11/03 22:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5895	85.8950	70.06	82.63	12.56	50.38	10:27
2	TOC	8.2973	82.9726	68.02	80.93	12.91	50.37	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	19	TOC	K2009599-003DUP	8.4682 ppm	0.1266 ppm	1.5000%	2020/11/03 22:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5577	85.5771	69.84	82.73	12.89	50.38	10:28
2	TOC	8.3787	83.7866	68.59	81.35	12.77	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0569 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:18

Pos	Base Analysis	ID	Rep	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run

	Type		#							Time
B	TOC	25 ppm	1	26.0569	260.5694	192.68	205.51	12.83	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.73	12.69	50.35	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 23:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.49	20.24	12.75	50.34	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.0002 ppm (PASS)	0.0000 ppm	0%	2020/11/04 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.0002	240.0016	178.25	191.05	12.80	50.33	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	21	TOC	K2009599-003MS	30.5199 ppm	0.2792 ppm	0.9100%	2020/11/04 00:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.7173	307.1734	225.29	237.88	12.59	50.33	10:29
2	TOC	30.3225	303.2246	222.52	235.37	12.85	50.33	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K2009599-004	4.5248 ppm	0.1496 ppm	3.3100%	2020/11/04 00:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6306	46.3059	42.29	55.23	12.93	50.33	10:26
2	TOC	4.4190	44.1904	40.81	53.60	12.79	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	K2009599-005 10x	33.2444 ppm	0.4726 ppm	1.4200%	2020/11/04 01:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.9103	329.1027	240.67	253.38	12.71	50.32	10:27
2	TOC	33.5786	335.7857	245.36	258.09	12.73	50.29	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K2009641-001	5.3742 ppm	0.2819 ppm	5.2500%	2020/11/04 01:40

-NR carry over

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.5736	55.7360	48.91	61.56	12.66	50.29	10:31
2	TOC	5.1749	51.7487	46.11	59.07	12.95	50.30	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K2009641-001DUP	1.9856 ppm	0.0348 ppm	1.7500%	2020/11/04 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.0101	20.1014	23.91	36.68	12.77	50.31	10:28
2	TOC	1.9610	19.6096	23.57	36.34	12.78	50.31	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	26	TOC	K2009641-001MS	26.3108 ppm	0.0841 ppm	0.3200%	2020/11/04 02:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3703	263.7026	194.79	207.61	12.82	50.26	10:31
2	TOC	26.2514	262.5137	193.96	207.12	13.16	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	27	TOC	K2009641-002	14.3894 ppm	0.3804 ppm	2.6400%	2020/11/04 03:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6584	146.5836	112.64	125.62	12.99	50.28	10:27
2	TOC	14.1204	141.2035	108.86	121.75	12.89	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	28	TOC	K2009641-003	7.3487 ppm	0.0012 ppm	0.0200%	2020/11/04 03:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3496	73.4955	61.37	74.32	12.95	50.27	10:30
2	TOC	7.3478	73.4784	61.36	74.16	12.81	50.28	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	29	TOC	K2009641-004	3.9775 ppm	0.0623 ppm	1.5700%	2020/11/04 04:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0216	40.2160	38.02	50.81	12.78	50.28	10:30
2	TOC	3.9335	39.3350	37.40	50.11	12.71	50.27	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	30	TOC	K2009641-005	2.7030 ppm	0.0247 ppm	0.9100%	2020/11/04 04:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6856	26.8557	28.65	41.18	12.53	50.25	10:26
2	TOC	2.7205	27.2050	28.90	41.84	12.95	50.26	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	31	TOC	K2009641-006	2.6683 ppm	0.0241 ppm	0.9000%	2020/11/04 04:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6853	26.8529	28.65	41.25	12.61	50.25	10:25
2	TOC	2.6512	26.5122	28.41	41.25	12.84	50.27	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	32	TOC	K2009641-007	7.3631 ppm	0.0302 ppm	0.4100%	2020/11/04 05:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3417	73.4171	61.31	74.17	12.86	50.27	10:28
2	TOC	7.3845	73.8448	61.61	74.50	12.88	50.25	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8156 ppm (PASS)	0.0000 ppm	0%	2020/11/04 05:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8156	258.1560	190.98	203.77	12.79	50.25	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 06:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.53	20.42	12.89	50.24	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K2009670-001	12.7753 ppm	0.0369 ppm	0.2900%	2020/11/04 06:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.7493	127.4926	99.24	112.12	12.88	50.22	10:26
2	TOC	12.8014	128.0143	99.61	112.45	12.84	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K2009255-001	31.2797 ppm	0.5426 ppm	1.7300%	2020/11/04 06:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.8960	308.9596	226.54	239.32	12.78	50.19	10:27
2	TOC	31.6633	316.6334	231.92	244.59	12.66	50.28	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K2009255-002	14.4665 ppm	0.3169 ppm	2.1900%	2020/11/04 07:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6906	146.9057	112.86	125.76	12.90	50.28	10:27
2	TOC	14.2424	142.4238	109.72	122.66	12.95	50.32	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	36	TOC	K2009255-003	14.3057 ppm	0.2508 ppm	1.7500%	2020/11/04 07:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4830	144.8301	111.41	124.15	12.74	50.45	10:31
2	TOC	14.1283	141.2833	108.92	121.82	12.90	50.31	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2009134-002 100X	0.6368 ppm	0.0439 ppm	6.9000%	2020/11/04 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6678	6.6785	14.50	27.19	12.69	50.33	10:30
2	TOC	0.6057	6.0569	14.06	27.05	12.99	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2009134-003 100X	0.3611 ppm	0.0127 ppm	3.5200%	2020/11/04 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3521	3.5209	12.28	25.08	12.79	50.33	10:32
2	TOC	0.3700	3.7005	12.41	25.02	12.61	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	K2009134-004 100X	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.36	21.09	12.73	50.35	10:30
2	TOC	0.0000	0.0000	8.59	21.35	12.76	50.29	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	19.67	12.84	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.78	19.55	12.77	50.32	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1470	1.6077	0.0460	0.0000	0.0000	0.0000	2020/10/30 19:52	Fusion1 (Fusion1)
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v38	Calibration curve formula:	TOC: y = 7.015x + 9.892
Ver Creation:	2020/06/13 16:40	r^2 value:	TOC: r^2 = 0.99974
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 10:09

Fusion Report - 11032020
Wednesday, November 04, 2020 10:34 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v6)		
Comment:			

Report Results

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8577 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8577	258.5765	191.28	204.17	12.89	50.35	10:27

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.67	20.68	13.01	50.21	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met. (v4) (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml

UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 11:04

Fusion Report - 11042020A
Wednesday, November 04, 2020 12:16 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 14:04 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11042020A	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1)		
Comment:			

Report Results

Sample Type: Sample — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	D	TOC	RB	0.1022 ppm	0.0000 ppm	0.0000%	2020/11/04 12:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1022	1.0219	10.53	23.56	13.03	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8736 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8736	258.7362	191.39	204.35	12.96	50.46	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.94	12.89	50.39	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2009641-001	0.7150 ppm	0.0316 ppm	4.4100%	2020/11/04 13:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7373	7.3727	14.98	27.58	12.60	50.37	10:25
2	TOC	0.6926	6.9265	14.67	27.62	12.95	50.37	10:25

-Reported Value w/o carry over

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8075 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8075	258.0747	190.93	203.88	12.96	50.42	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.16	20.83	12.67	50.28	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 13:58

ALS Environmental

StarLIMS Run: 701641

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 19-GEN-8-55J 50 ppm LCS: 19-GEN-8-41K 25.0 ppm

ICAL Date: 6/16/2020

ICAL ID: 19-GEN-8-22-G

ICS ID: 19-GEN-8-35-K

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-55I 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-55K

21 % H3PO4: 19-GEN-08-55L

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: MAS	Date Analyzed: 11/3/2020
Reviewed By:	Date Reviewed: 11/5/20

HS20101123 8260_W_DOD Raw Data

ALS WO# HS20101123

MSVOA06 -Logbook

Batch: 42316 **Analyst:** Devak Giga

Date: 11-03-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	11-03-2020 11:40 am	1.00	0.00 mL	0.00 mL	X110301.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	11-03-2020 12:01 pm	1.00	5.00 mL	0.00 mL	X110302.D	Liquid	Y	NA
	010 uL cal std/100 mL DI									
3	VSTD000.5	ICAL2	11-03-2020 12:43 pm	1.00	5.00 mL	0.00 mL	X110303.D	Liquid	Y	NA
	0.10 uL cal std/50 mL DI									
4	VSTD001	ICAL3	11-03-2020 01:04 pm	1.00	5.00 mL	0.00 mL	X110304.D	Liquid	Y	NA
	0.20 uL cal std/50 mL DI									
5	VSTD002	ICAL4	11-03-2020 01:24 pm	1.00	5.00 mL	0.00 mL	X110305.D	Liquid	Y	NA
	0.4 uL cal std/50 mL DI									
6	VSTD005	ICAL5	11-03-2020 01:45 pm	1.00	5.00 mL	0.00 mL	X110306.D	Liquid	Y	NA
	1.0 uL cal std/50 mL DI									
7	VSTD020	ICAL6	11-03-2020 02:06 pm	1.00	5.00 mL	0.00 mL	X110307.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
8	VSTD050	ICAL7	11-03-2020 02:27 pm	1.00	5.00 mL	0.00 mL	X110308.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
9	VSTD100	ICAL8	11-03-2020 02:48 pm	1.00	5.00 mL	0.00 mL	X110309.D	Liquid	Y	NA
	20 uL cal std/50 mL DI									
10	VSTD150	ICAL9	11-03-2020 03:09 pm	1.00	5.00 mL	0.00 mL	X110310.D	Liquid	Y	NA
	30 uL cal std/50 mL DI									
11	VSTD200	ICAL	11-03-2020 03:30 pm	1.00	5.00 mL	0.00 mL	X110311.D	Liquid	Y	NA
	40 uL cal std/50 mL DI									
12	BLANK	SAMP	11-03-2020 03:51 pm	1.00	5.00 mL	0.00 mL	X110312.D	Liquid	Y	NA
13	BLANK	SAMP	11-03-2020 04:12 pm	1.00	5.00 mL	0.00 mL	X110313.D	Liquid	Y	NA
14	ICV	ICV	11-03-2020 04:33 pm	1.00	5.00 mL	0.00 mL	X110314.D	Liquid	Y	NA
	10 uL ical std/50 mL DI									
15	BLANK	SAMP	11-03-2020 04:54 pm	1.00	5.00 mL	0.00 mL	X110315.D	Liquid	Y	NA
16	VLCSW-201103	LCS	11-03-2020 05:15 pm	1.00	5.00 mL	0.00 mL	X110316.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
17	BLK	SAMP	11-03-2020 05:36 pm	1.00	5.00 mL	0.00 mL	X110317.D	Liquid	Y	NA
18	BLK	SAMP	11-03-2020 05:57 pm	1.00	5.00 mL	0.00 mL	X110318.D	Liquid	Y	NA
19	VBLKW-201103	MBLK	11-03-2020 06:18 pm	1.00	5.00 mL	0.00 mL	X110319.D	Liquid	Y	NA
20	HS20101149-02	SAMP	11-03-2020 06:39 pm	1.00	5.00 mL	0.00 mL	X110320.D	Liquid	Y	<2
21	HS20101149-01	SAMP	11-03-2020 07:00 pm	1.00	5.00 mL	0.00 mL	X110321.D	Liquid	Y	<2
22	HS20101123-12	SAMP	11-03-2020 07:21 pm	1.00	5.00 mL	0.00 mL	X110322.D	Liquid	Y	NA
23	HS20101123-01	SAMP	11-03-2020 07:42 pm	1.00	5.00 mL	0.00 mL	X110323.D	Liquid	Y	NA
24	HS20101123-01MS	MS	11-03-2020 08:04 pm	1.00	5.00 mL	0.00 mL	X110324.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
25	HS20101123-01MSD	MSD	11-03-2020 08:25 pm	1.00	5.00 mL	0.00 mL	X110325.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
26	HS20101123-01	SAMP	11-03-2020 08:46 pm	5.00	5.00 mL	0.00 mL	X110326.D	Liquid	Y	NA
27	HS20101123-02	SAMP	11-03-2020 09:07 pm	1.00	5.00 mL	0.00 mL	X110327.D	Liquid	Y	NA
28	HS20101123-03	SAMP	11-03-2020 09:28 pm	1.00	5.00 mL	0.00 mL	X110328.D	Liquid	Y	NA
29	HS20101123-04	SAMP	11-03-2020 09:49 pm	1.00	5.00 mL	0.00 mL	X110329.D	Liquid	Y	NA
30	CCV-END	CCV	11-03-2020 10:10 pm	1.00	5.00 mL	0.00 mL	X110330.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
31	BFB	TUNE	11-03-2020 10:31 pm	1.00	0.00 mL	0.00 mL	Y110301a.D	Liquid	Y	NA
32	BFB	TUNE	11-03-2020 10:52 pm	1.00	0.00 mL	0.00 mL	Y110302.D	Liquid	Y	NA
33	CCV	CCV	11-03-2020 11:13 pm	1.00	5.00 mL	0.00 mL	Y110303.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
34	BLANK	SAMP	11-03-2020 11:34 pm	1.00	5.00 mL	0.00 mL	Y110304.D	Liquid	Y	NA
35	VLCSW-201103	LCS	11-03-2020 11:55 pm	1.00	5.00 mL	0.00 mL	Y110305.D	Liquid	Y	NA
36	BLK	SAMP	11-04-2020 12:16 am	1.00	5.00 mL	0.00 mL	Y110306.D	Liquid	Y	NA
37	VBLKW-201103	MBLK	11-04-2020 12:37 am	1.00	5.00 mL	0.00 mL	Y110307.D	Liquid	Y	NA
38	HS20101240-10	SAMP	11-04-2020 12:58 am	1.00	5.00 mL	0.00 mL	Y110308.D	Liquid	Y	NA
39	HS20101123-10	SAMP	11-04-2020 01:19 am	500.0(	5.00 mL	0.00 mL	Y110309.D	Liquid	Y	NA
40	HS20101123-11	SAMP	11-04-2020 01:40 am	500.0(	5.00 mL	0.00 mL	Y110310.D	Liquid	Y	NA
41	HS20101240-09	SAMP	11-04-2020 02:01 am	500.0(	5.00 mL	0.00 mL	Y110311.D	Liquid	Y	NA
42	HS20101123-05	SAMP	11-04-2020 02:22 am	5.00	5.00 mL	0.00 mL	Y110312.D	Liquid	Y	NA
43	HS20101123-05	SAMP	11-04-2020 02:43 am	25.00	5.00 mL	0.00 mL	Y110313.D	Liquid	Y	NA
44	HS20101123-05MS	MS	11-04-2020 03:04 am	25.00	5.00 mL	0.00 mL	Y110314.D	Liquid	Y	NA
45	HS20101123-05MSD	MSD	11-04-2020 03:25 am	25.00	5.00 mL	0.00 mL	Y110315.D	Liquid	Y	NA
46	BLK	SAMP	11-04-2020 03:46 am	1.00	5.00 mL	0.00 mL	Y110316.D	Liquid	Y	NA
47	HS20101240-01	SAMP	11-04-2020 04:07 am	1.00	5.00 mL	0.00 mL	Y110317.D	Liquid	Y	NA
48	HS20101240-02	SAMP	11-04-2020 04:29 am	1.00	5.00 mL	0.00 mL	Y110318.D	Liquid	Y	NA
49	HS20101240-03	SAMP	11-04-2020 04:50 am	1.00	5.00 mL	0.00 mL	Y110319.D	Liquid	Y	NA
50	HS20101240-06	SAMP	11-04-2020 05:11 am	1.00	5.00 mL	0.00 mL	Y110320.D	Liquid	Y	NA
51	HS20101240-04	SAMP	11-04-2020 05:32 am	1.00	5.00 mL	0.00 mL	Y110321.D	Liquid	Y	NA
52	HS20101240-04	SAMP	11-04-2020 05:53 am	10.00	5.00 mL	0.00 mL	Y110322.D	Liquid	Y	NA
53	HS20101123-06	SAMP	11-04-2020 06:14 am	5.00	5.00 mL	0.00 mL	Y110323.D	Liquid	Y	NA
54	HS20101123-06	SAMP	11-04-2020 06:35 am	25.00	5.00 mL	0.00 mL	Y110324.D	Liquid	Y	NA
55	HS20101123-07	SAMP	11-04-2020 06:56 am	5.00	5.00 mL	0.00 mL	Y110325.D	Liquid	Y	NA
56	HS20101123-07	SAMP	11-04-2020 07:17 am	50.00	5.00 mL	0.00 mL	Y110326.D	Liquid	Y	NA
57	HS20101123-08	SAMP	11-04-2020 07:38 am	5.00	5.00 mL	0.00 mL	Y110327.D	Liquid	Y	NA
58	HS20101123-08	SAMP	11-04-2020 07:59 am	50.00	5.00 mL	0.00 mL	Y110328.D	Liquid	Y	NA
59	HS20101123-09	SAMP	11-04-2020 08:20 am	50.00	5.00 mL	0.00 mL	Y110329.D	Liquid	Y	NA
60	HS20101123-09	SAMP	11-04-2020 08:41 am	500.0(	5.00 mL	0.00 mL	Y110330.D	Liquid	Y	NA
61	CCV-END	CCV	11-04-2020 09:02 am	1.00	5.00 mL	0.00 mL	Y110331.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-03
CAL STD ID	31106-54-01/02
BFB ID	31106-51-06
pH Paper	634-64-*10

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 (TOL) #	OTHER (DCE) #	TOT OUT
01	VLCSW-201103	100	94	95	100	0
02	VBLKW-201103	90	84	100	86	0
03	HS20101123-12	95	85	101	87	0
04	HS20101123-01	93	84	102	83	0
05	HS20101123-01	94	88	101	91	0
06	HS20101123-01	96	90	100	90	0
07	HS20101123-01	92	84	101	86	0
08	HS20101123-02	95	84	101	86	0
09	HS20101123-03	95	88	98	88	0
10	HS20101123-04	94	85	103	88	0
11						
12						
13						
14						
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16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= 4-Bromofluorobenzene	(70-130)
SMC2	= Dibromofluoromethane	(70-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER(DCE)	= 1,2-Dichloroethane-d4	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
1,2-Dichloroethane	50.00	48.80	98	80-120
Trichloroethene	50.00	49.82	100	80-120
Methylene Chloride	50.00	45.39	91	80-120
cis-1,2-Dichloroethene	50.00	47.87	96	80-120
Vinyl Chloride	50.00	49.52	99	80-120
1,1,2-Trichloroethane	50.00	47.47	95	80-120
1,1-Dichloroethene	50.00	47.17	94	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-201103

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID: X110319 Lab Sample ID: VBLKW-201103

Date Analyzed: 11/03/20 Time Analyzed: 1818

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-201103	VLCSW-201103	X110316	1715
02	HS20101123-1	HS20101123-12	X110322	1921
03	HS20101123-0	HS20101123-01	X110323	1942
04	HS20101123-0	HS20101123-01M	X110324	2004
05	HS20101123-0	HS20101123-01M	X110325	2025
06	HS20101123-0	HS20101123-01	X110326	2046
07	HS20101123-0	HS20101123-02	X110327	2107
08	HS20101123-0	HS20101123-03	X110328	2128
09	HS20101123-0	HS20101123-04	X110329	2149
10				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID: X110301 BFB Injection Date: 11/03/20

Instrument ID: VOA6 BFB Injection Time: 1140

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.5
75	30.0 - 60.0% of mass 95	57.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	1.3 (1.6)1
174	Greater than 50.0% of mass 95	82.0
175	5.0 - 9.0% of mass 174	6.5 (7.9)1
176	95.0 - 101.0% of mass 174	78.9 (96.3)1
177	5.0 - 9.0% of mass 176	4.5 (5.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X110302	11/03/20	1201
02	VSTD000.5	VSTD000.5	X110303	11/03/20	1243
03	VSTD001	VSTD001	X110304	11/03/20	1304
04	VSTD002	VSTD002	X110305	11/03/20	1324
05	VSTD005	VSTD005	X110306	11/03/20	1345
06	VSTD020	VSTD020	X110307	11/03/20	1406
07	VSTD050	VSTD050	X110308	11/03/20	1427
08	VSTD100	VSTD100	X110309	11/03/20	1448
09	VSTD150	VSTD150	X110310	11/03/20	1509
10	VSTD200	VSTD200	X110311	11/03/20	1530
11	ICV	ICV	X110314	11/03/20	1633
12	VLCSW-201103	VLCSW-201103	X110316	11/03/20	1715
13	VBLKW-201103	VBLKW-201103	X110319	11/03/20	1818
14	HS20101123-1	HS20101123-12	X110322	11/03/20	1921
15	HS20101123-0	HS20101123-01	X110323	11/03/20	1942
16	HS20101123-0	HS20101123-01M	X110324	11/03/20	2004
17	HS20101123-0	HS20101123-01M	X110325	11/03/20	2025
18	HS20101123-0	HS20101123-01	X110326	11/03/20	2046
19	HS20101123-0	HS20101123-02	X110327	11/03/20	2107
20	HS20101123-0	HS20101123-03	X110328	11/03/20	2128
21	HS20101123-0	HS20101123-04	X110329	11/03/20	2149
22	CCV-END	CCV-END	X110330	11/03/20	2210

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: VOA6 Calibration Date(s): 11/03/20 11/03/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1201 1530

LAB FILE ID: RF0.25: X110302 RF0.5: X110303 RF1: X110304
RF2: X110305 RF5: X110306 RF20: X110307

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
1,2-Dichloroethane		0.666	0.598	0.531	0.549	0.490
Trichloroethene		0.415	0.317	0.377	0.319	0.290
Methylene Chloride		0.727	0.763	0.707	0.716	0.592
cis-1,2-Dichloroethene		0.899	0.654	0.758	0.744	0.638
Vinyl Chloride		1.215	1.206	1.116	1.106	0.992
1,1,2-Trichloroethane		0.396	0.324	0.281	0.290	0.275
1,1-Dichloroethene		1.141	1.038	0.937	0.959	0.839
4-Bromofluorobenzene		1396	2114	4690	11013	41523
Dibromofluoromethane		0.661	0.697	0.668	0.638	0.615
Toluene-d8		1.597	1.287	1.252	1.177	1.190
1,2-Dichloroethane-d4		1490	2593	5018	11874	44472

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010112

Instrument ID: VOA6 Calibration Date(s): 11/03/20 11/03/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1201 1530

LAB FILE ID: RF50: X110308 RF100: X110309 RF150: X110310
RF200: X110311

COMPOUND	RF50	RF100	RF150	RF200
1,2-Dichloroethane	0.532	0.495	0.501	0.490
Trichloroethene	0.323	0.318	0.319	0.320
Methylene Chloride	0.616	0.656	0.697	0.705
cis-1,2-Dichloroethene	0.689	0.703	0.758	0.755
Vinyl Chloride	1.014	1.087	1.098	1.108
1,1,2-Trichloroethane	0.299	0.302	0.295	0.314
1,1-Dichloroethene	0.852	0.872	0.924	0.927
4-Bromofluorobenzene	114211	252308	414999	565367
Dibromofluoromethane	0.667	0.679	0.735	0.700
Toluene-d8	1.283	1.388	1.411	1.435
1,2-Dichloroethane-d4	128500	253050	404360	

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010112

Instrument ID: VOA6 Calibration Date(s): 11/03/20 11/03/20

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1201 1530

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
1,2-Dichloroethane	AVRG		0.53912868		10.962	15.000
Trichloroethene	AVRG		0.33320083		11.461	15.000
Methylene Chloride	AVRG		0.68649235		8.025	15.000
cis-1,2-Dichloroethene	AVRG		0.73325309		10.535	15.000
Vinyl Chloride	AVRG		1.10477653		6.709	15.000
1,1,2-Trichloroethane	AVRG		0.30839143		11.677	15.000
1,1-Dichloroethene	AVRG		0.94335689		10.151	15.000
4-Bromofluorobenzene	2ORDR	6.046e-003	2.31167671	-0.1639271	0.9997602	0.9900000
Dibromofluoromethane	AVRG		0.67335658		5.250	15.000
Toluene-d8	AVRG		1.33549893		10.085	15.000
1,2-Dichloroethane-d4	2ORDR	-9.78e-003	1.33740959	-8.05e-002	0.9996886	0.9900000

FORM VI VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: VOA6 Calibration Date: 11/03/20 Time: 2210

Lab File ID: X110330 Init. Calib. Date(s): 11/03/20 11/03/20

Init. Calib. Times: 1201 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5390000	0.5086120	0.5086120	0.1	5.64	50.00	AVRG
Trichloroethene	0.3330000	0.3076790	0.3076790	0.2	7.60	50.00	AVRG
Methylene Chloride	0.6860000	0.5913849	0.5913849	0.1	13.79	50.00	AVRG
cis-1,2-Dichloroethene	0.7330000	0.6653996	0.6653996	0.1	9.22	50.00	AVRG
Vinyl Chloride	1.1050000	0.9760285	0.9760285	0.1	11.67	50.00	AVRG
1,1,2-Trichloroethane	0.3080000	0.2915996	0.2915996	0.1	5.32	50.00	AVRG
1,1-Dichloroethene	0.9430000	0.8305441	0.8305441	0.1	11.92	50.00	AVRG
4-Bromofluorobenzene	48.886845	50.000000	0.4336774	0.1	2.23	50.00	2RDR
Dibromofluoromethane	0.6730000	0.6564234	0.6564234	0.1	2.46	50.00	AVRG
Toluene-d8	1.3360000	1.2961457	1.2961457	0.1	2.98	50.00	AVRG
1,2-Dichloroethane-d4	53.192414	50.000000	0.8458272	0.1	-6.38	50.00	2RDR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID (Standard): X110308 Date Analyzed: 11/03/20

Instrument ID: VOA6 Time Analyzed: 1427

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(DFB) AREA #	IS1(DFB) RT #	IS2(CBZ) AREA #	IS2(CBZ) RT #	IS3(DCB) AREA #	IS3(DCB) RT #
	12 HOUR STD	292364	4.97	263420	7.67	124995	9.66
	UPPER LIMIT	584728	5.47	526840	8.17	249990	10.16
	LOWER LIMIT	146182	4.47	131710	7.17	62498	9.16
	CLIENT SAMPLE NO.						
01	VLCSW-201103	286594	4.97	260133	7.67	116761	9.66
02	VBLKW-201103	242423	4.97	217885	7.67	86038	9.67
03	HS20101123-12	236362	4.97	217352	7.67	88198	9.66
04	HS20101123-01	242556	4.97	213743	7.67	91094	9.66
05	HS20101123-01	246577	4.97	223589	7.67	94097	9.66
06	HS20101123-01	245407	4.97	217279	7.67	90157	9.67
07	HS20101123-01	239065	4.97	212462	7.67	83438	9.67
08	HS20101123-02	239579	4.97	213732	7.67	88333	9.66
09	HS20101123-03	238650	4.97	220868	7.67	92323	9.66
10	HS20101123-04	237263	4.97	209766	7.67	88729	9.66
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID (Standard): X110308 Date Analyzed: 11/03/20

Instrument ID: VOA6 Time Analyzed: 1427

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	155760	4.18				
	UPPER LIMIT	311520	4.68				
	LOWER LIMIT	77880	3.68				
	CLIENT SAMPLE NO.						
01	VLCSW-201103	157990	4.18				
02	VBLKW-201103	141172	4.19				
03	HS20101123-12	135160	4.19				
04	HS20101123-01	137228	4.18				
05	HS20101123-01	142531	4.19				
06	HS20101123-01	136956	4.19				
07	HS20101123-01	137278	4.18				
08	HS20101123-02	136905	4.19				
09	HS20101123-03	136678	4.19				
10	HS20101123-04	138403	4.19				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 = Pentafluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110301.D

Date : 03-NOV-2020 11:40

Client ID: BFB

Instrument: voa6.i

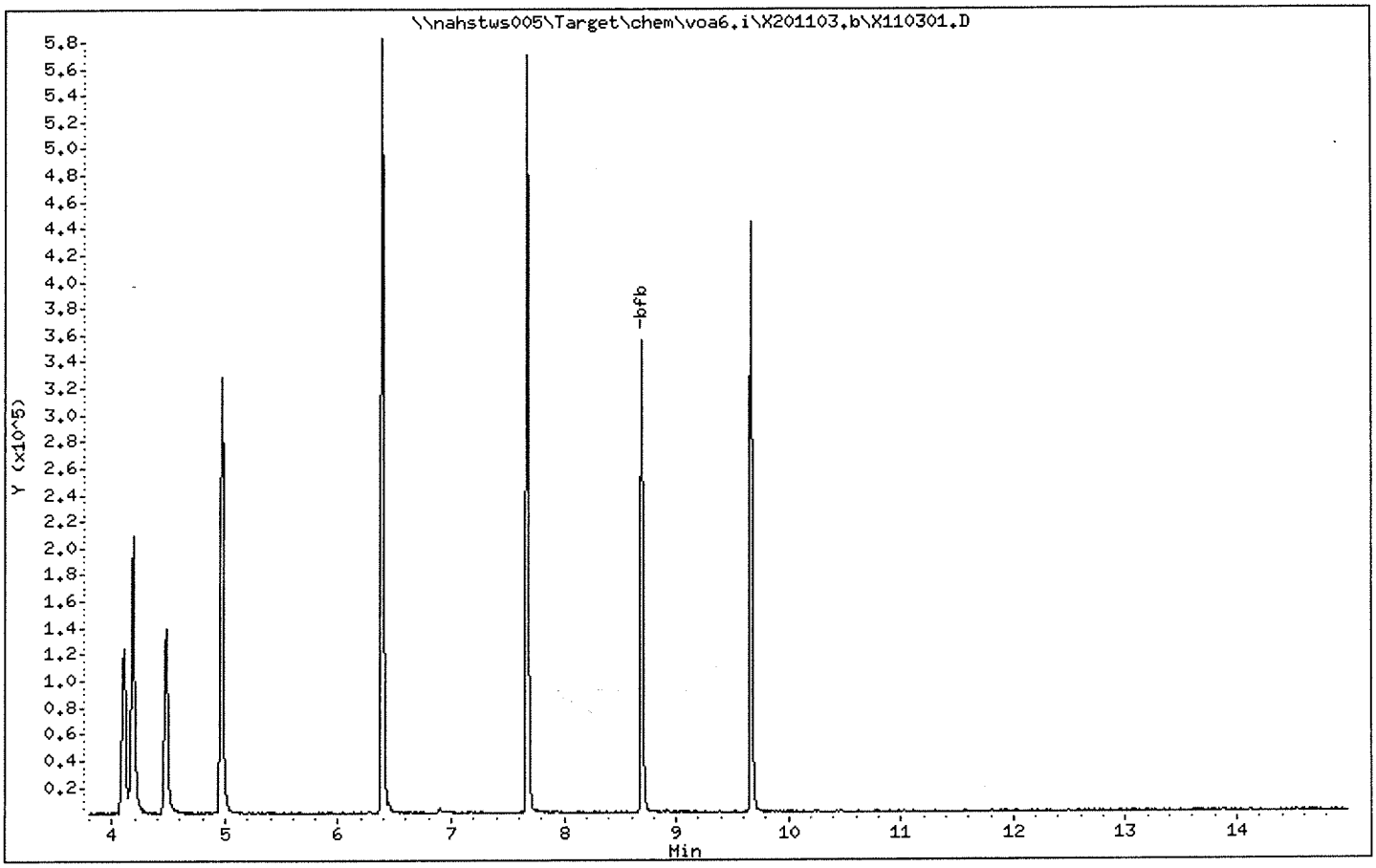
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110301.D

Date : 03-NOV-2020 11:40

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

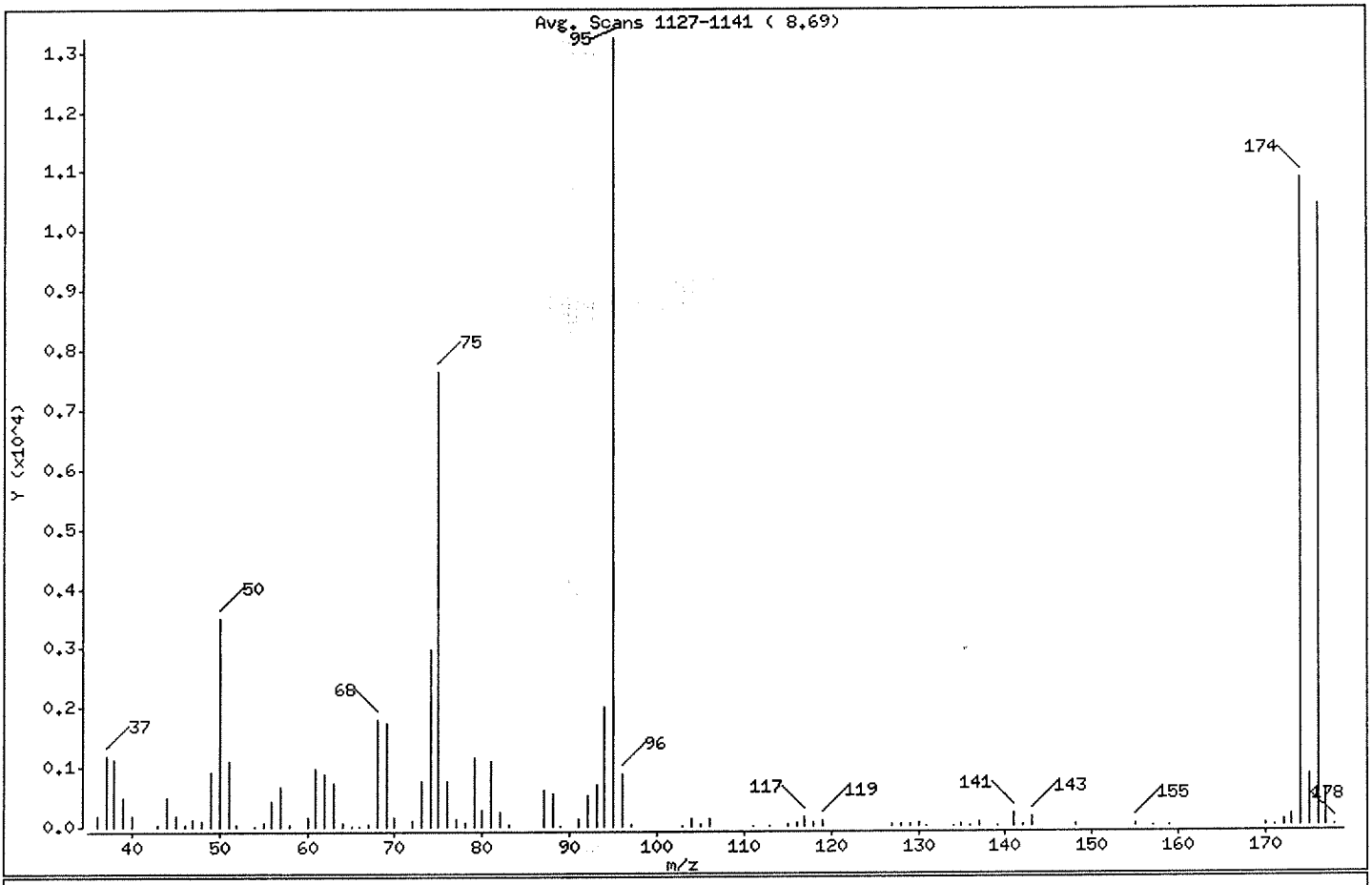
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	26.52
75	30.00 - 60.00% of mass 95	57.75
96	5.00 - 9.00% of mass 95	6.71
173	Less than 2.00% of mass 174	1.32 (1.61)
174	Greater than 50.00% of mass 95	81.97
175	5.00 - 9.00% of mass 174	6.45 (7.87)
176	95.00 - 101.00% of mass 174	78.92 (96.28)
177	5.00 - 9.00% of mass 176	4.53 (5.75)

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110301.D

Date : 03-NOV-2020 11:40

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X110301.D
Spectrum: Avg. Scans 1127-1141 (8.69)
Location of Maximum: 95.00
Number of points: 90

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	185	63.00	745	91.00	120	134.00	4
37.00	1197	64.00	71	92.00	528	135.00	31
38.00	1127	65.00	14	93.00	713	136.00	5
39.00	487	66.00	6	94.00	2013	137.00	53
40.00	173	67.00	42	95.00	13233	139.00	4
43.00	32	68.00	1785	96.00	888	141.00	210
44.00	480	69.00	1734	97.00	28	142.00	28
45.00	181	70.00	151	103.00	9	143.00	160
46.00	40	72.00	93	104.00	117	148.00	27
47.00	125	73.00	763	105.00	30	155.00	41
48.00	105	74.00	2992	106.00	114	157.00	15
49.00	906	75.00	7642	111.00	4	159.00	6
50.00	3510	76.00	747	113.00	10	170.00	36
51.00	1099	77.00	116	115.00	20	171.00	15
52.00	44	78.00	67	116.00	55	172.00	79
54.00	8	79.00	1145	117.00	138	173.00	175
55.00	76	80.00	279	118.00	52	174.00	10847
56.00	436	81.00	1110	119.00	100	175.00	854
57.00	659	82.00	238	127.00	17	176.00	10443
58.00	31	83.00	26	128.00	37	177.00	600
60.00	166	87.00	603	129.00	38	178.00	14
61.00	965	88.00	560	130.00	60		
62.00	880	89.00	6	131.00	3		

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110302.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 03-NOV-2020 12:01
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

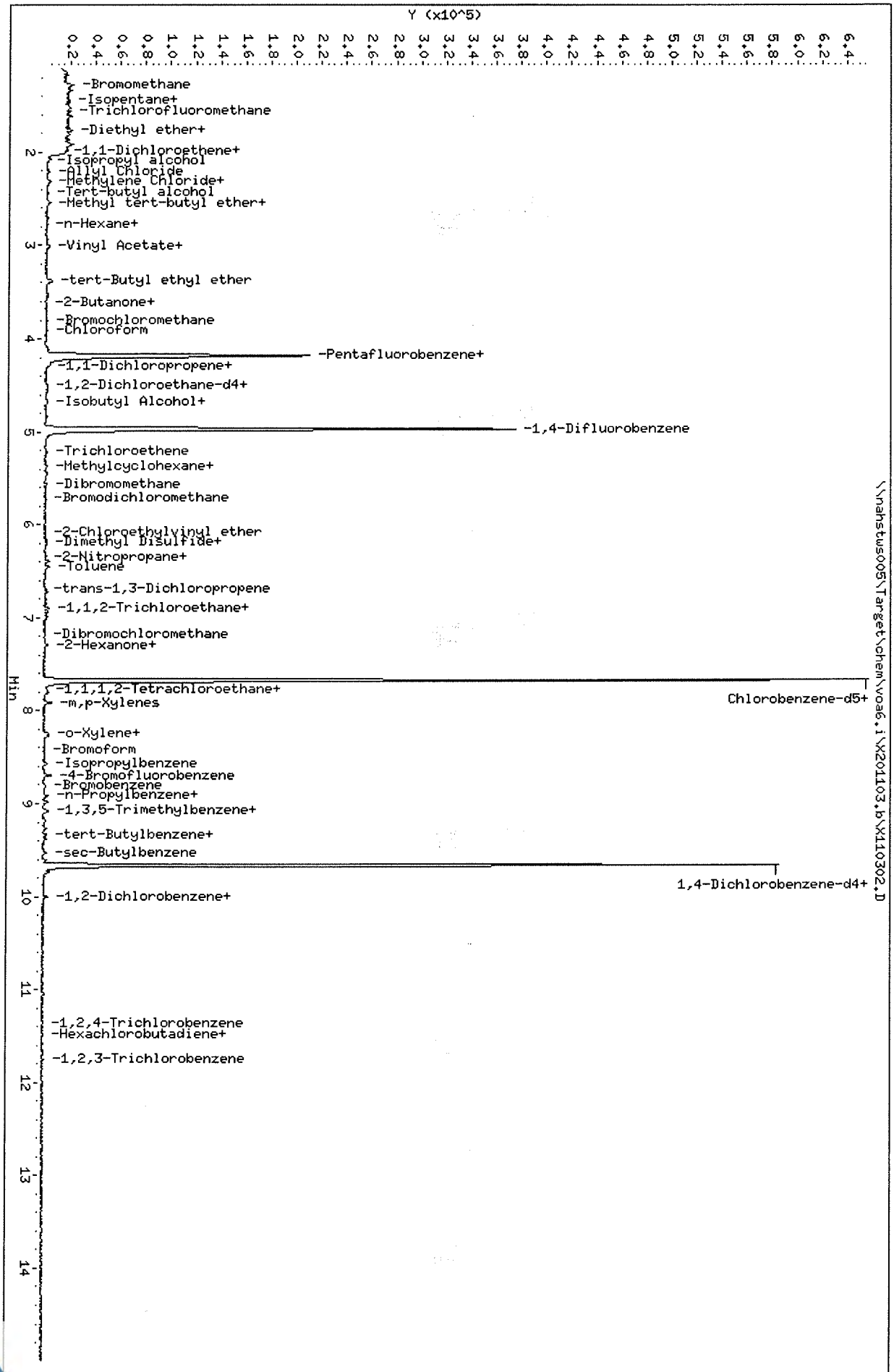
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	149848	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	278125	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	261293	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	109498	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.497	4.497	(1.074)	928	0.25000	(Ta)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	1826	0.25000	1.10(a)
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.981)	841	0.25000	0.41(aM)
$ 48 Toluene-d8	98	6.403	6.403	(0.835)	2652	0.25000	0.37(Ta)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	405	0.25000	0.25(aM)
11 1,1-Dichloroethene	96	1.911	1.911	(0.456)	1028	0.25000	0.36(a)
33 1,2-Dichloroethane	62	4.576	4.576	(0.921)	567	0.25000	0.18(aM)
27 cis-1,2-Dichloroethene	96	3.523	3.523	(0.841)	519	0.25000	0.23(aM)
17 Methylene Chloride	84	2.313	2.313	(0.552)	711	0.25000	0.34(aM)
38 Trichloroethene	130	5.214	5.214	(1.049)	548	0.25000	0.29(aM)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	1079	0.25000	0.32(aMH)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

QC Flag Legend

H - Operator selected an alternate compound hit.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110302.D
Date : 03-NOV-2020 12:01
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 03-NOV-2020 12:43
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 12:01 Cal File: X110302.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

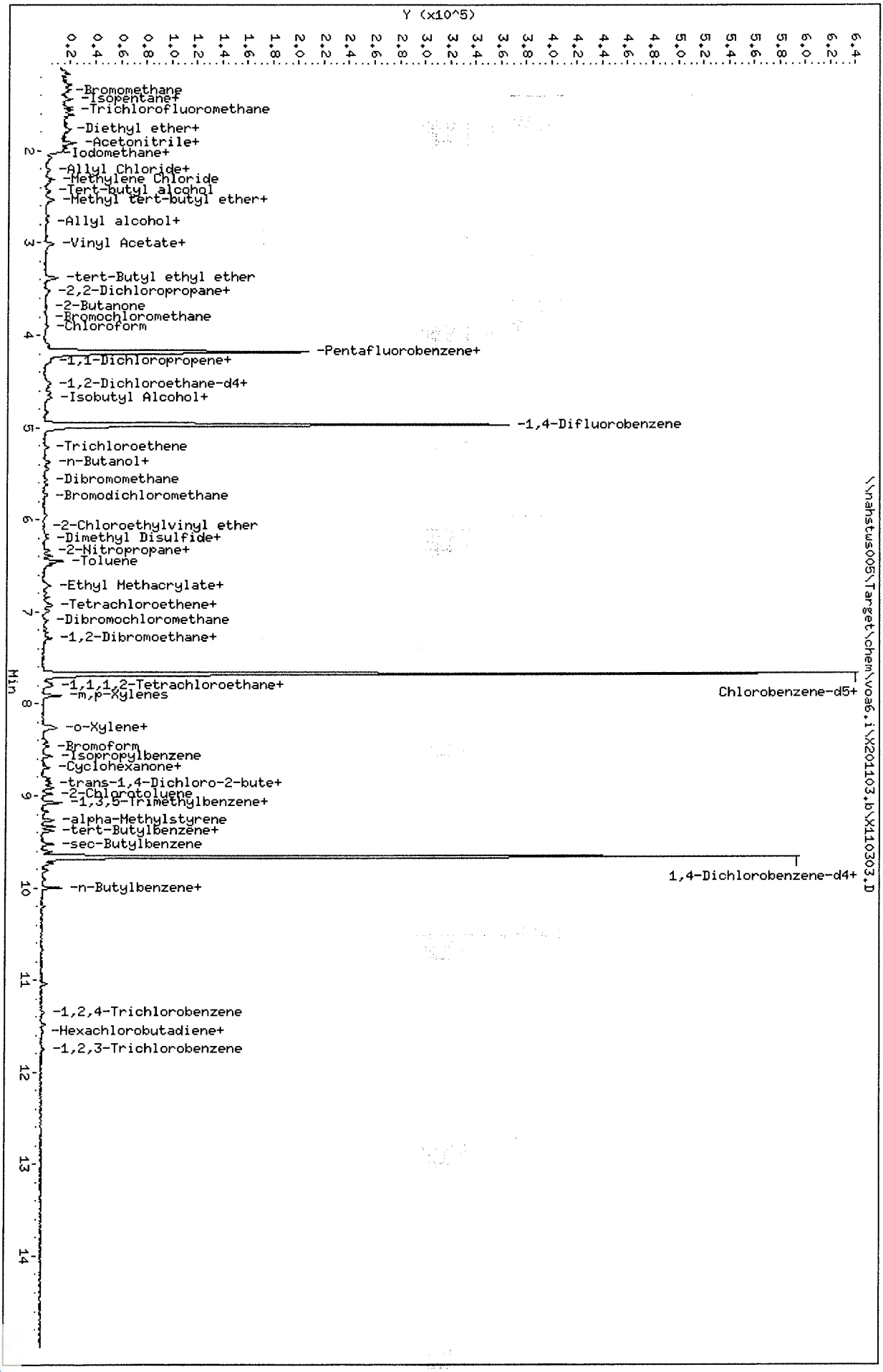
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	148094	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	267010	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	253498	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	108599	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.490	4.490	(1.072)	1490	0.50000	0.18(Ta)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	1396	0.50000	0.93(aM)
$ 30 Dibromofluoromethane	113	4.111	4.111	(0.981)	979	0.50000	0.49(a)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	4048	0.50000	0.59(Ta)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1003	0.50000	0.64(aM)
11 1,1-Dichloroethene	96	1.912	1.912	(0.456)	1690	0.50000	0.60(aM)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	1777	0.50000	0.61(aM)
27 cis-1,2-Dichloroethene	96	3.523	3.523	(0.841)	1332	0.50000	0.61(aM)
17 Methylene Chloride	84	2.306	2.306	(0.550)	1077	0.50000	0.52(aM)
38 Trichloroethene	130	5.207	5.207	(1.048)	1109	0.50000	0.62(aM)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	1800	0.50000	0.55(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

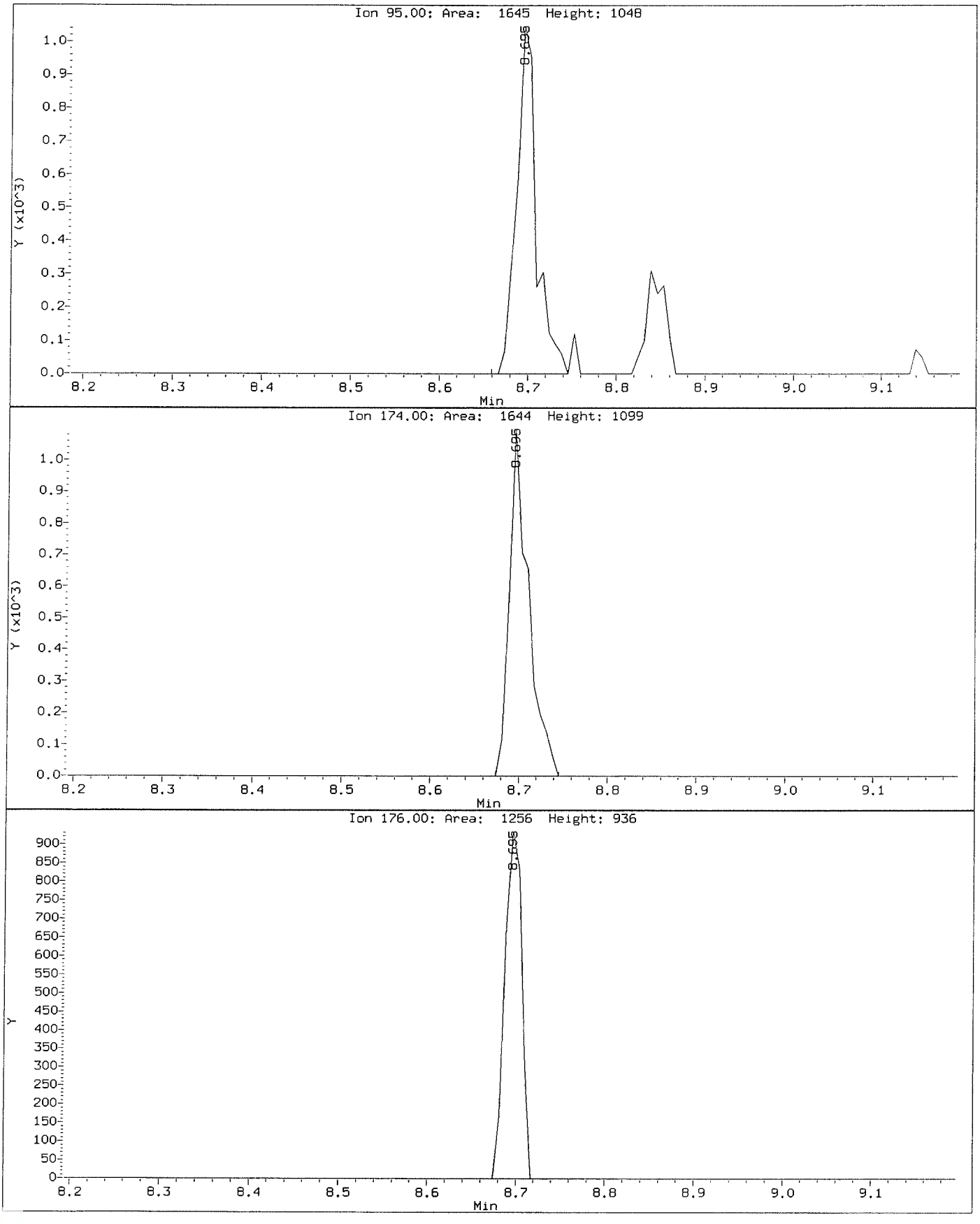


Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\X110303.D
Date : 03-NOV-2020 12:43
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

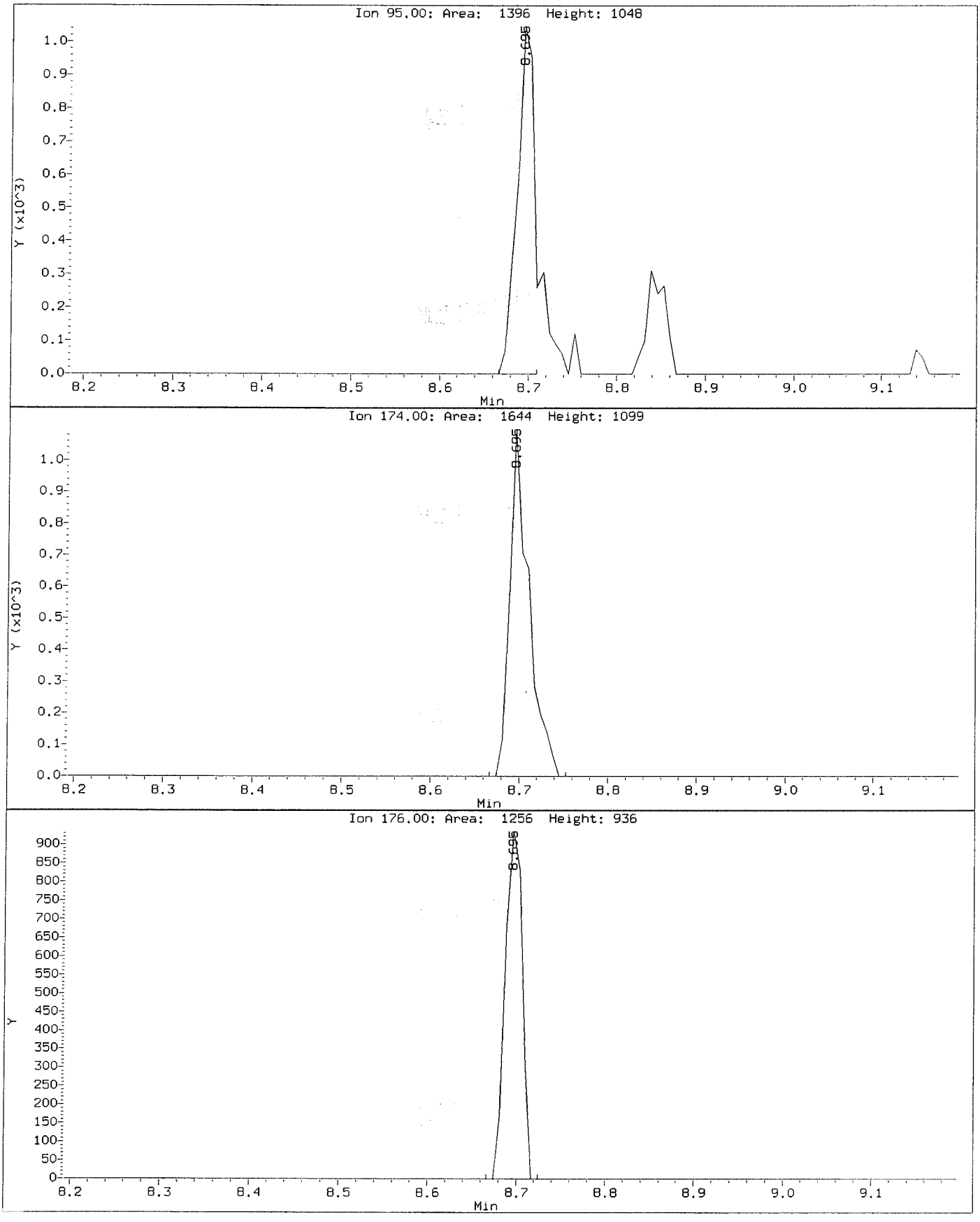
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 4-Bromofluorobenzene
CAS Number: 460-00-4



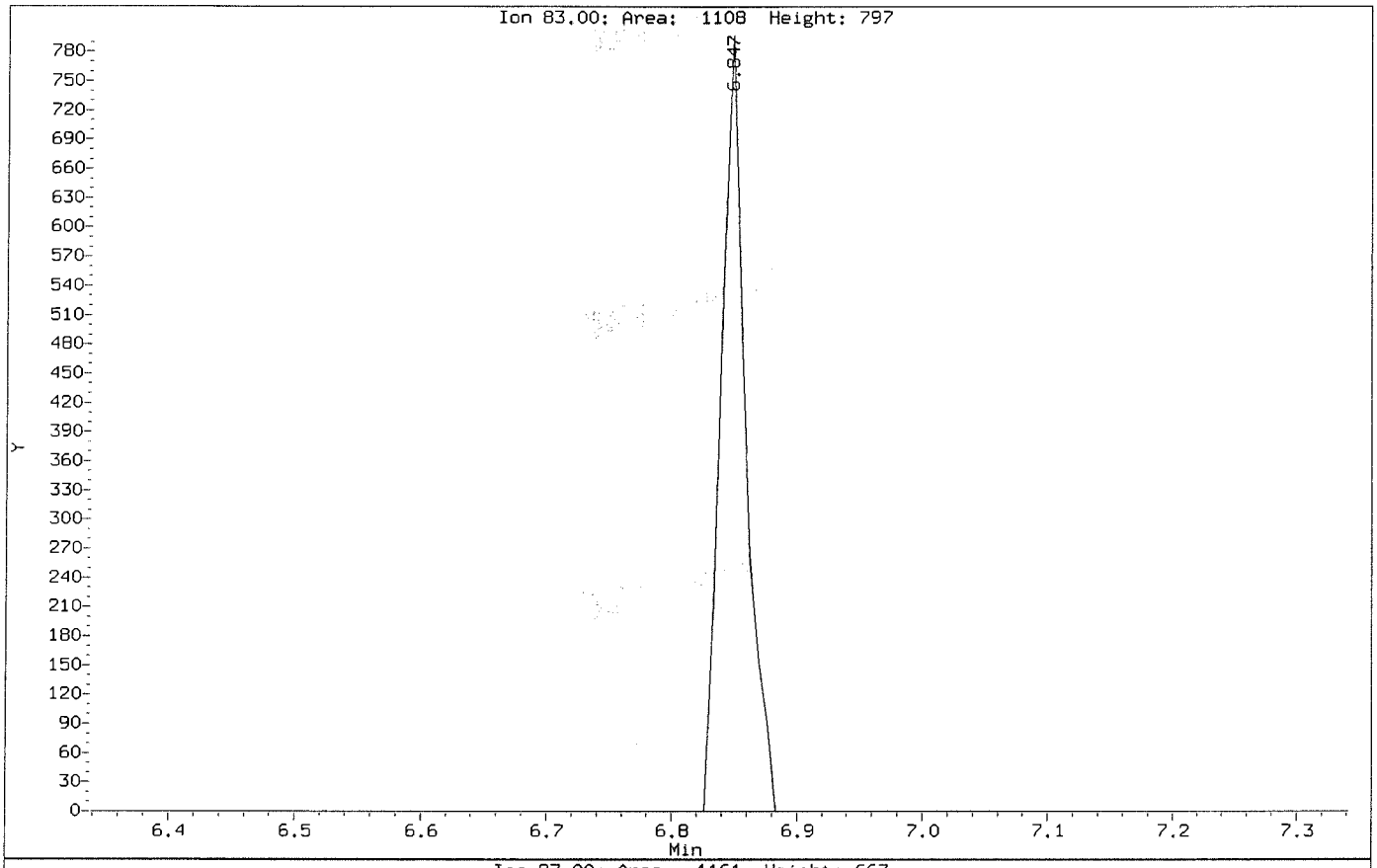
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

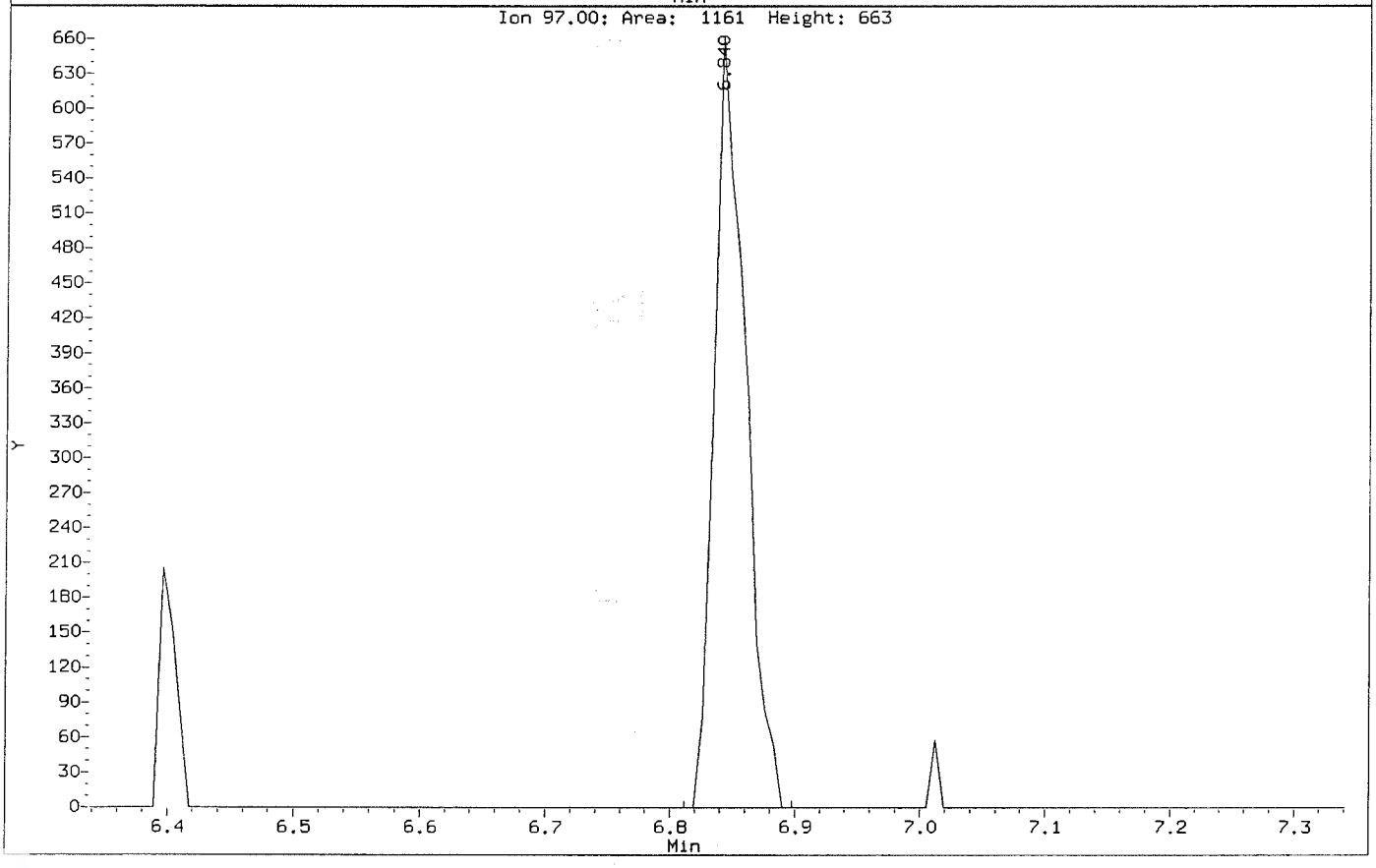
Compound: 4-Bromofluorobenzene
CAS Number: 460-00-4



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

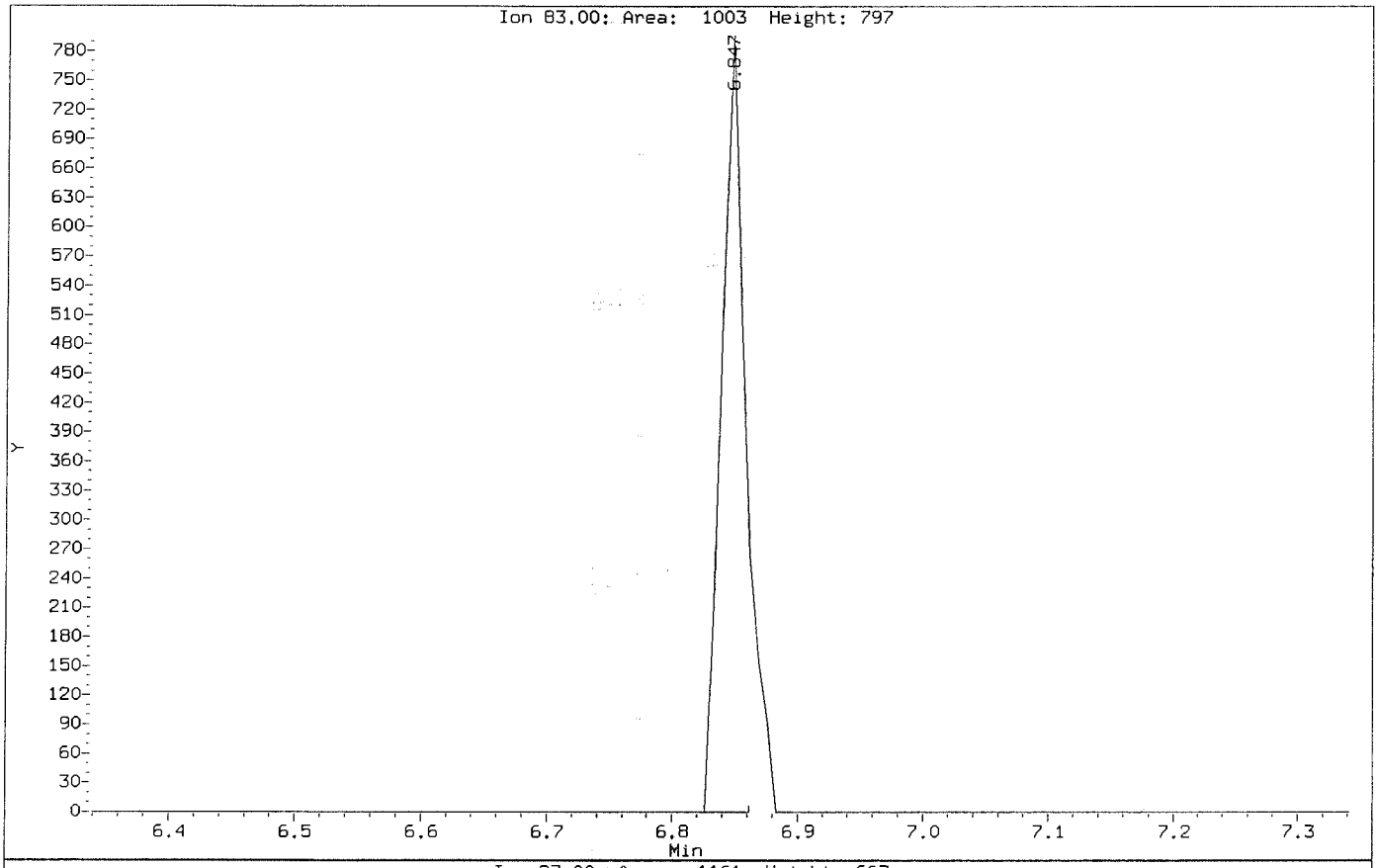
Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5

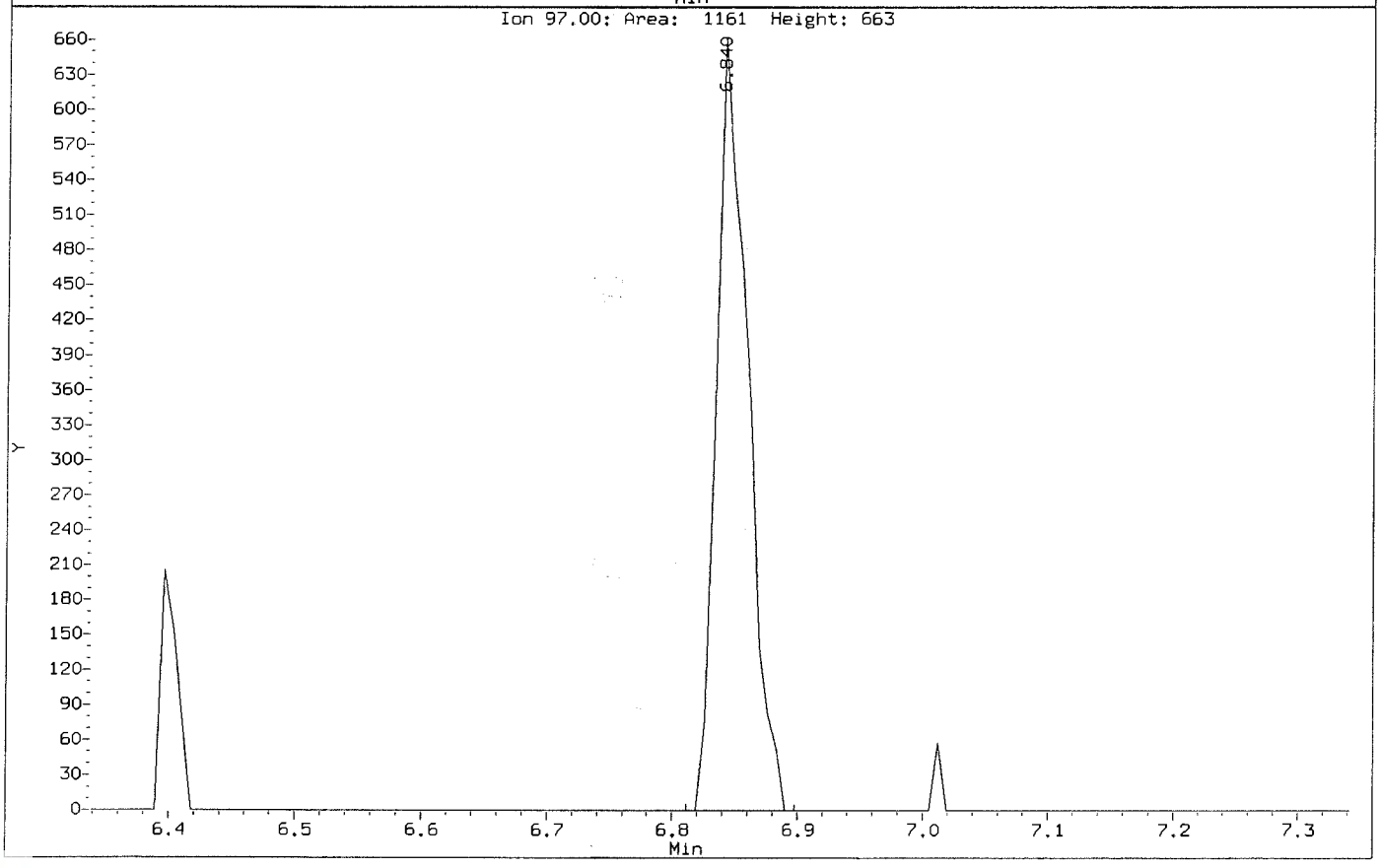




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

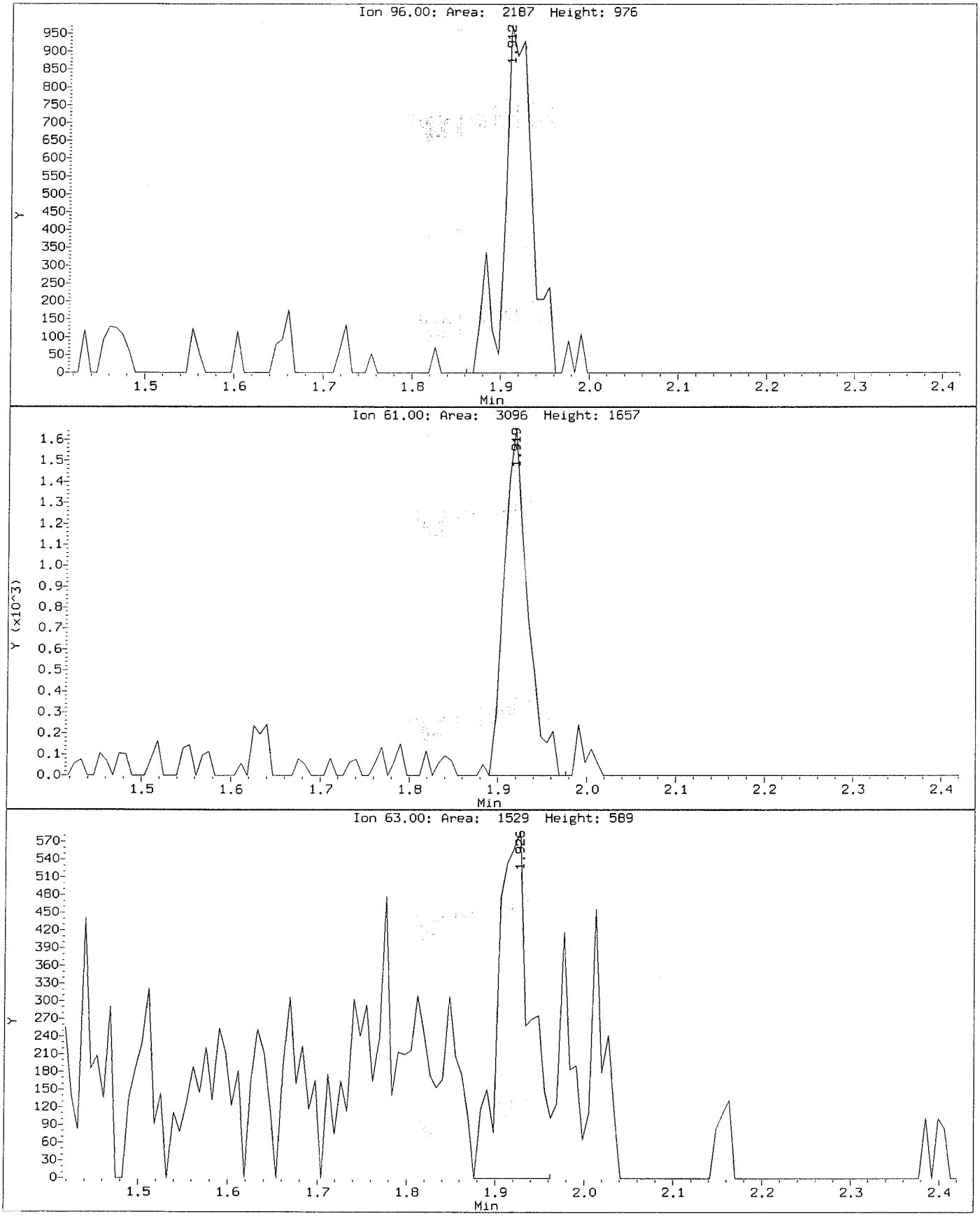
Compound: 1,1,2-Trichloroethane
CAS Number: 79-00-5





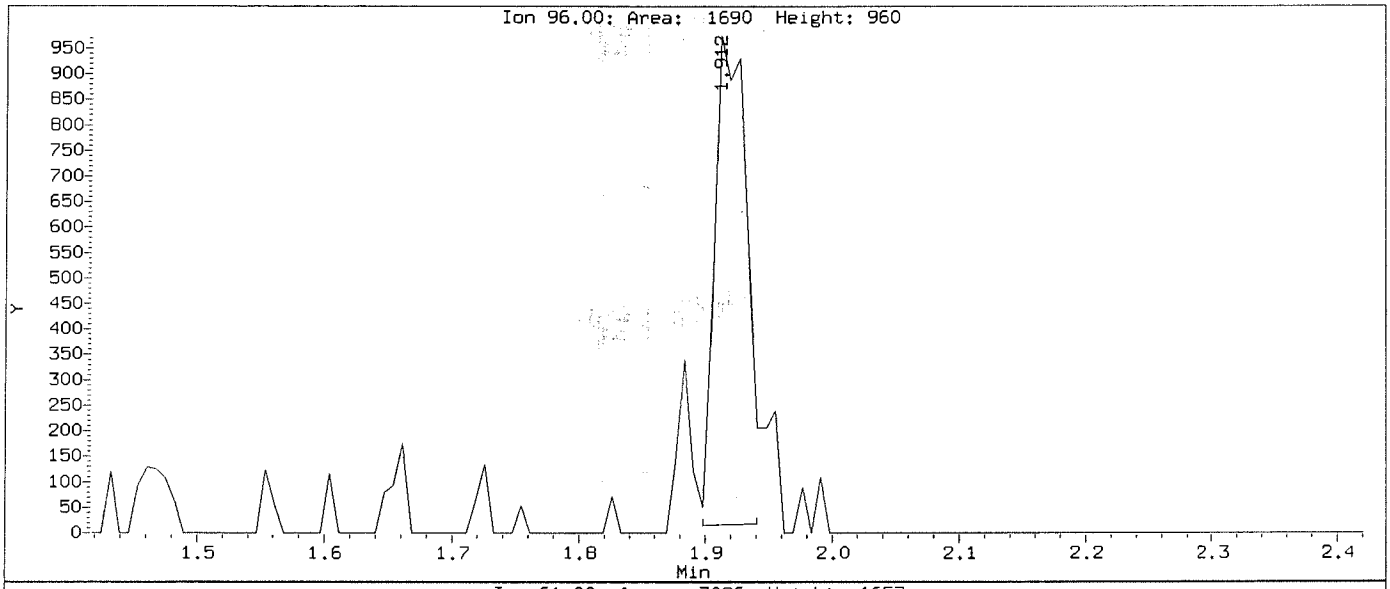
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

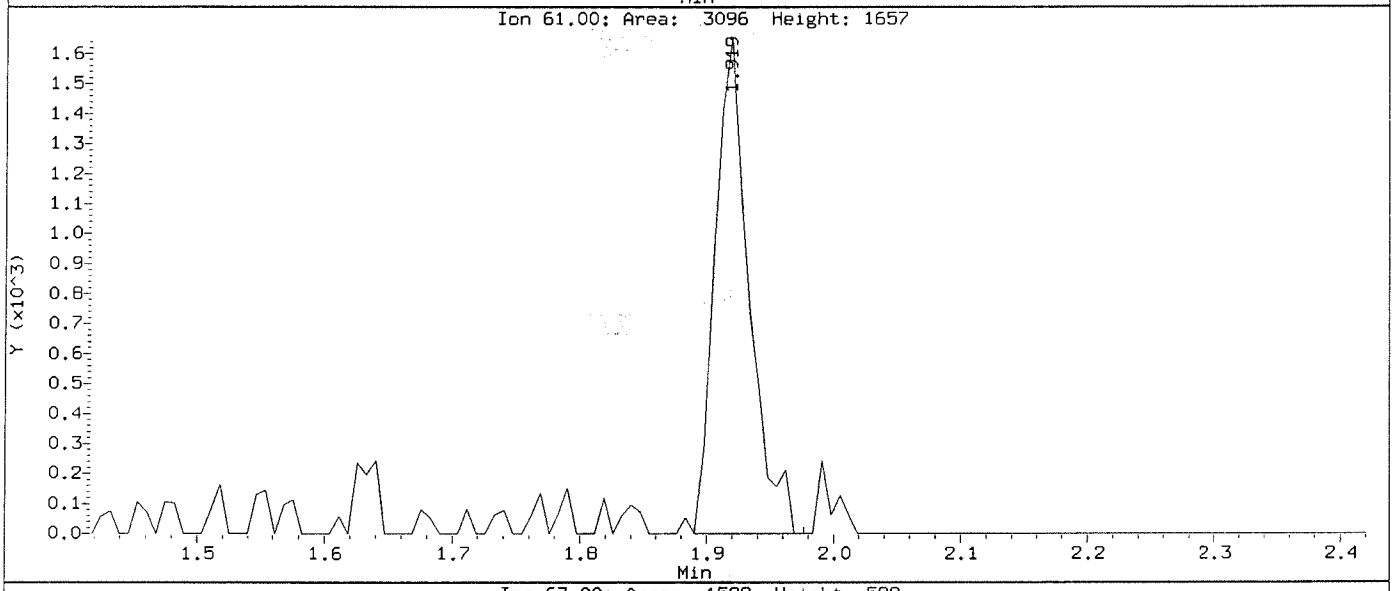
Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

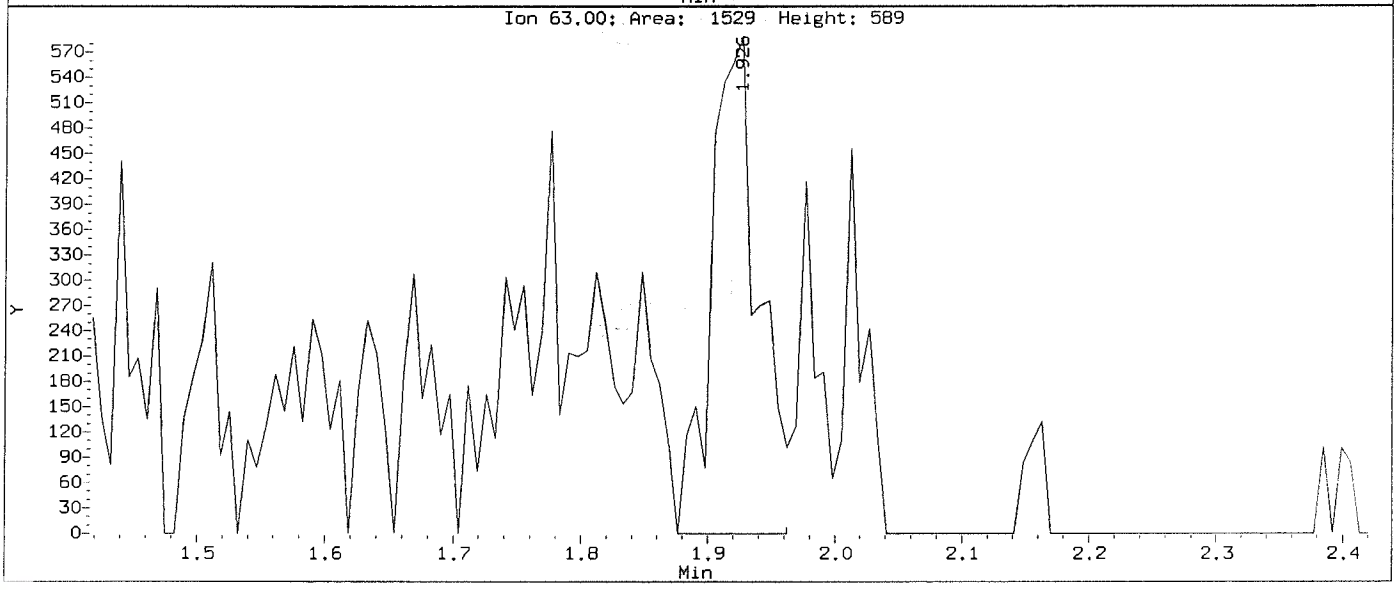


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

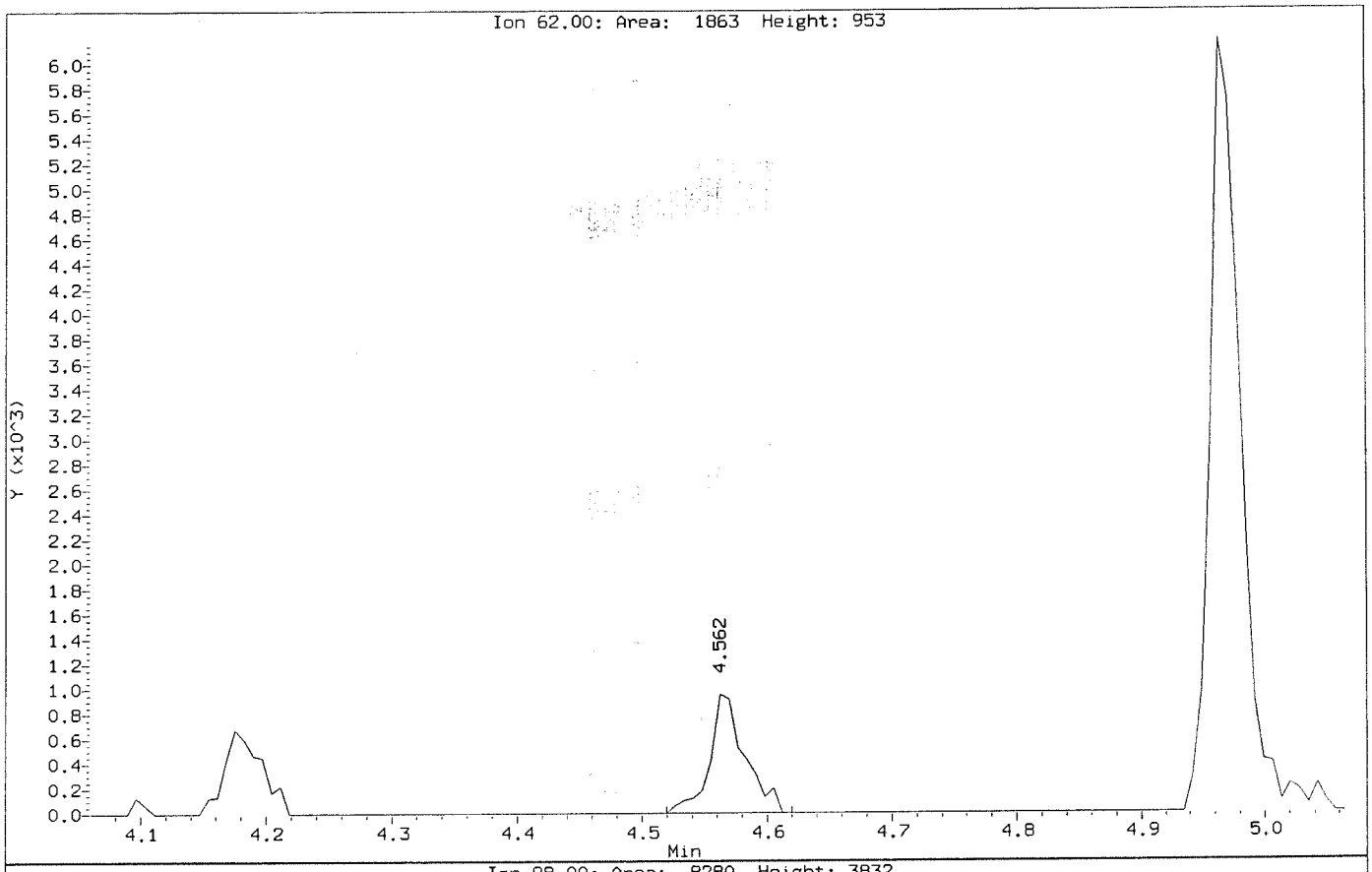


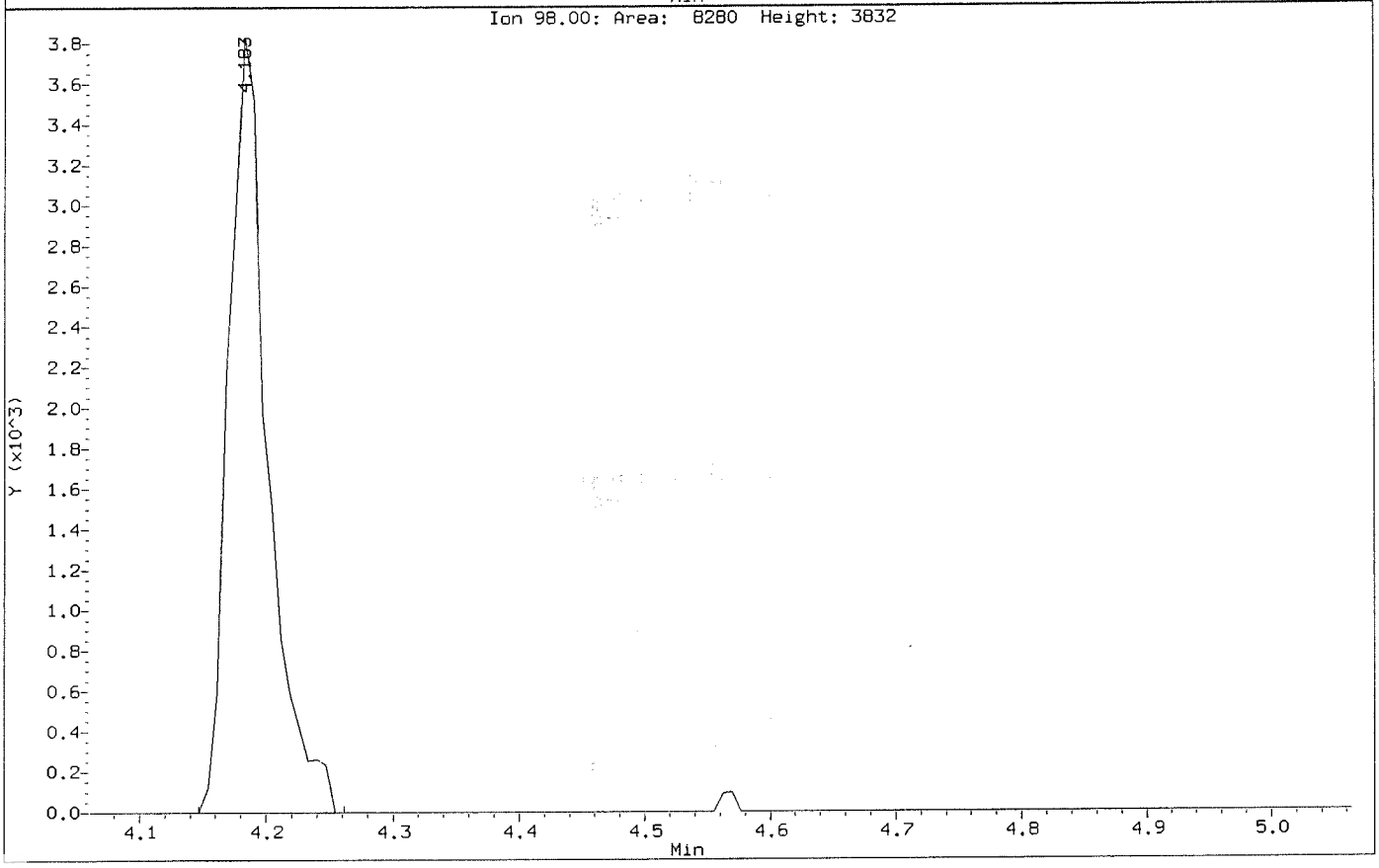




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

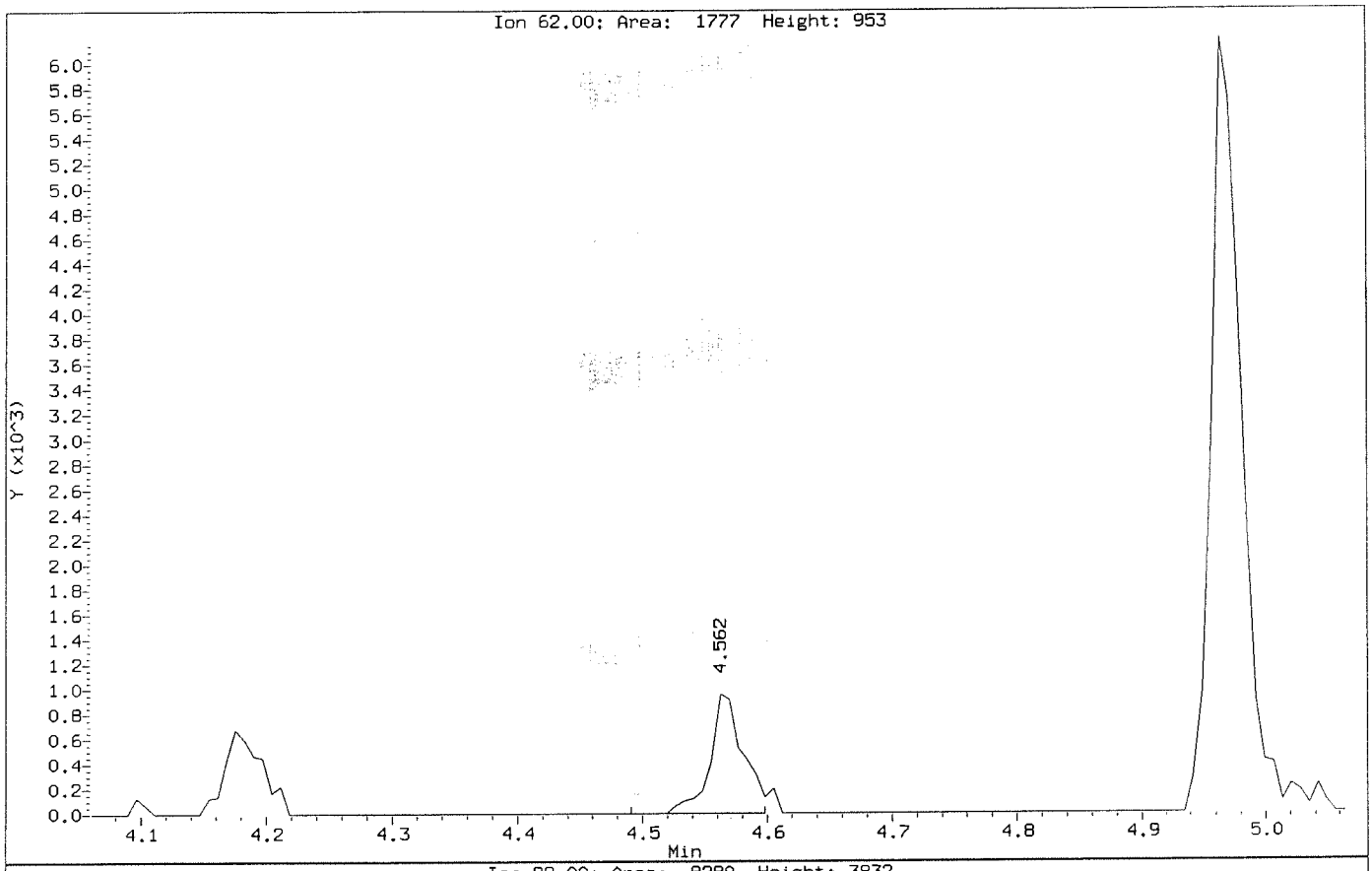
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

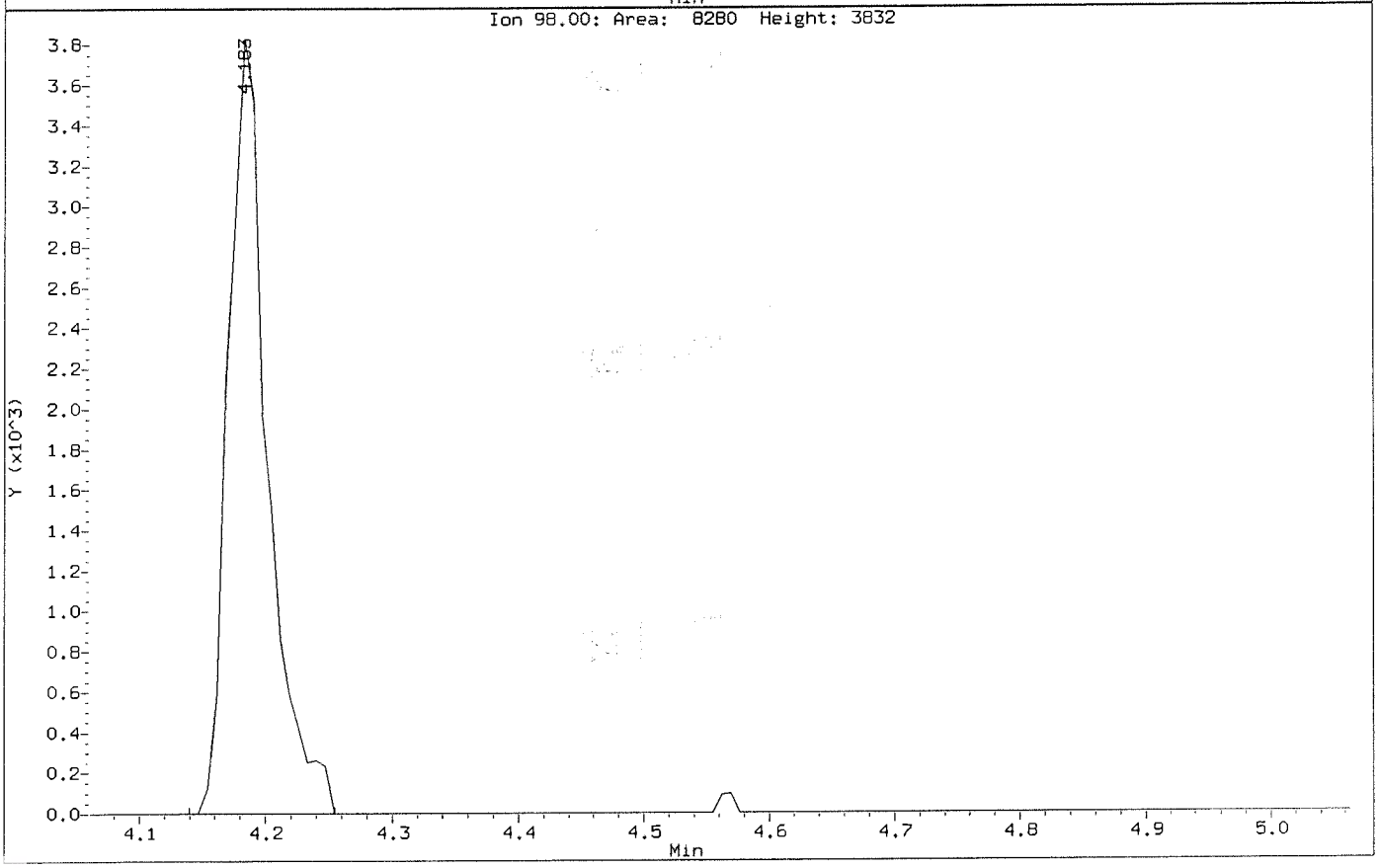




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dichloroethane
CAS Number: 107-06-2





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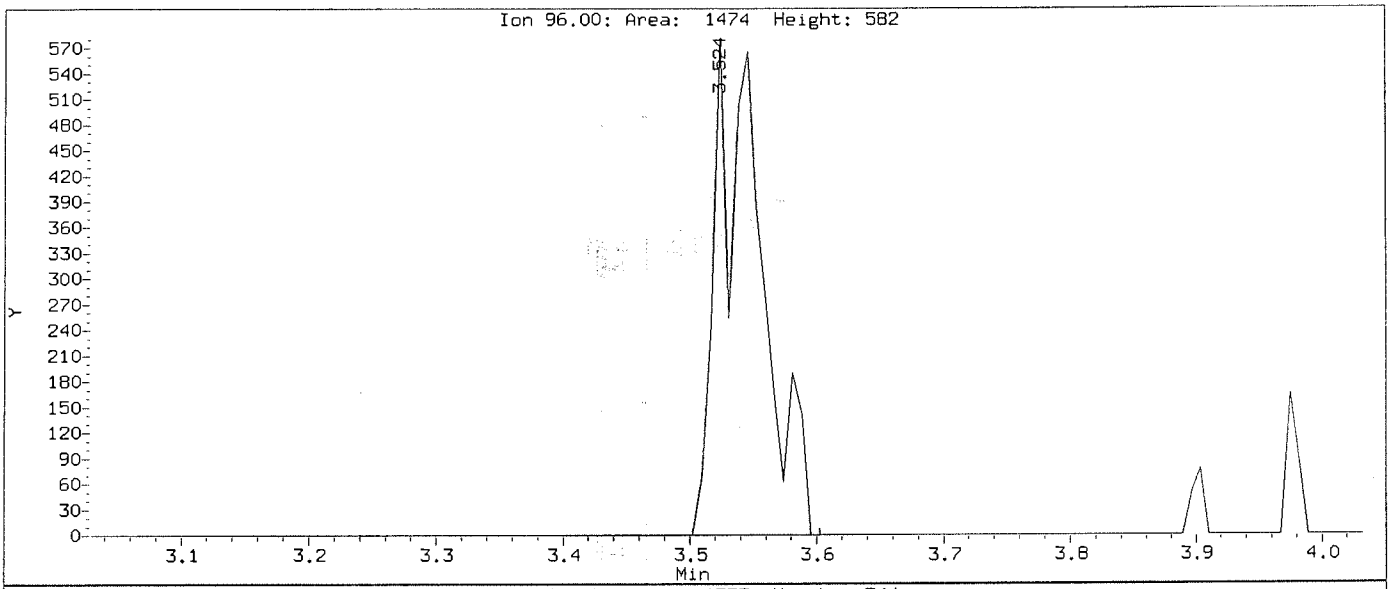
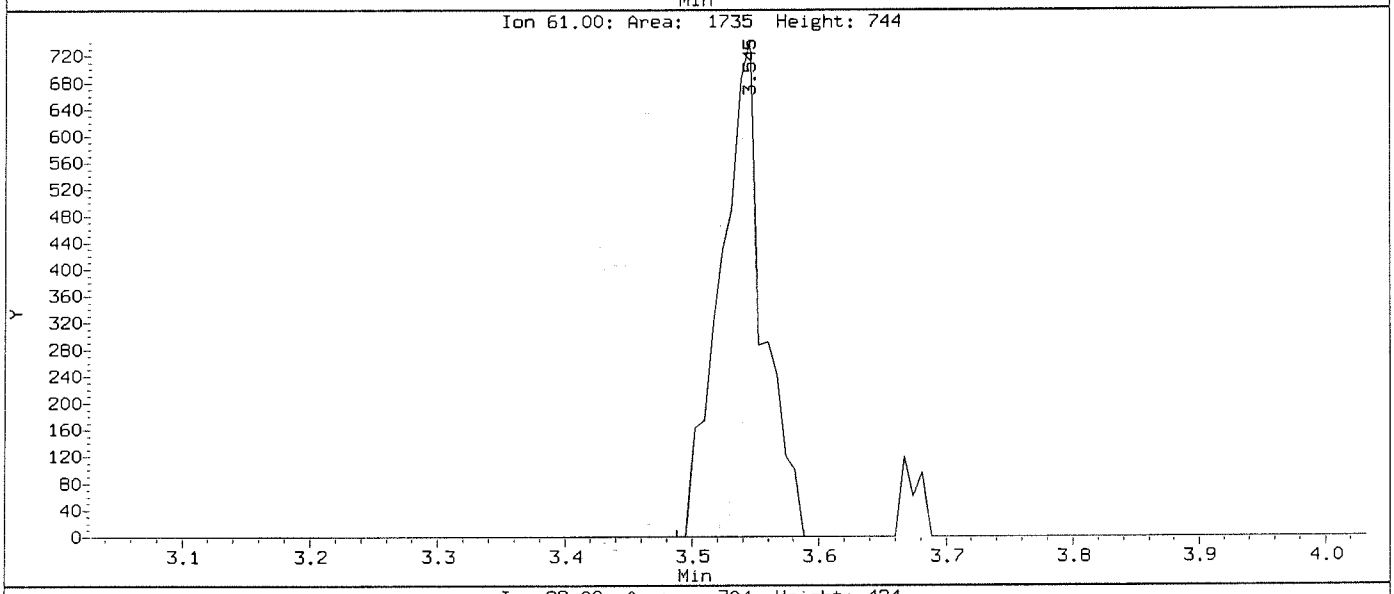
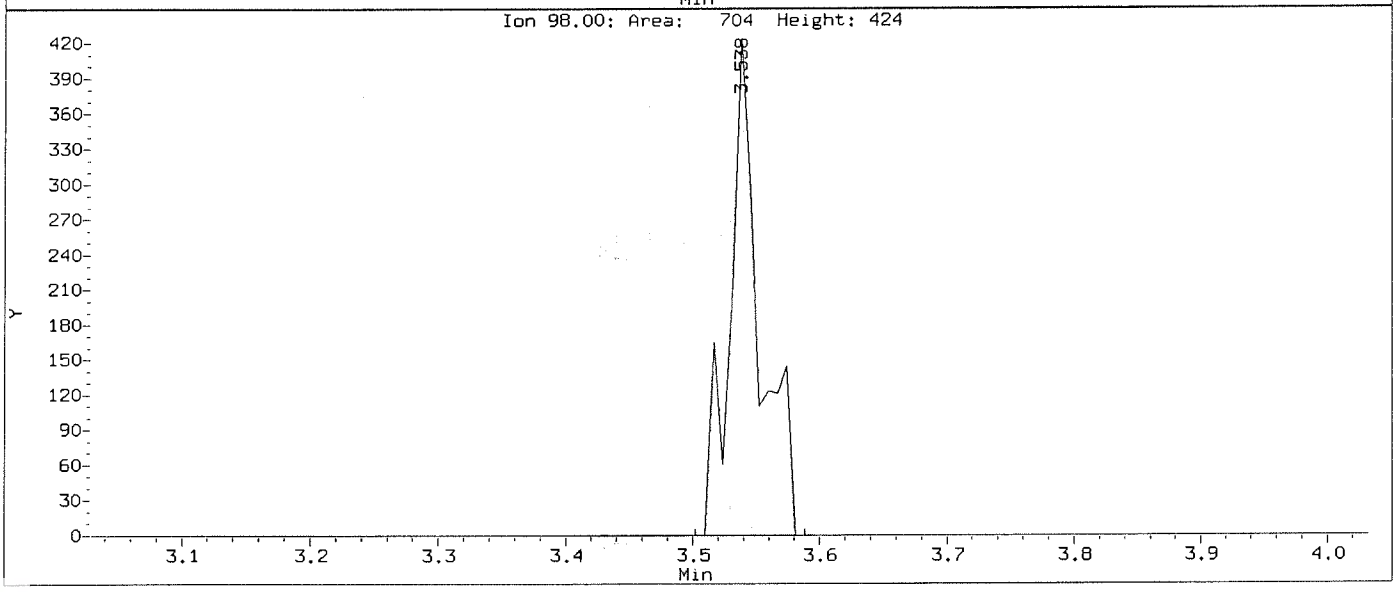
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2







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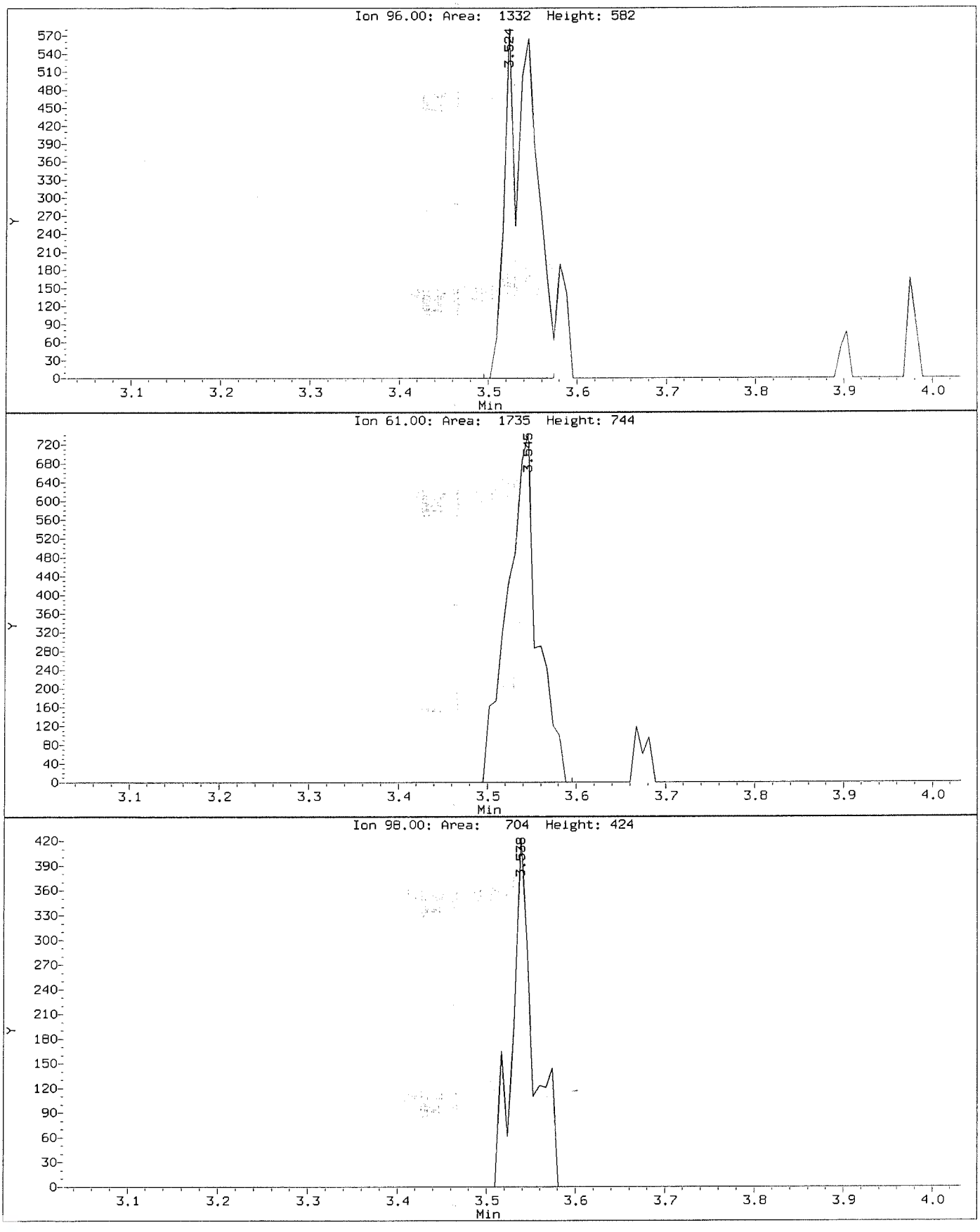
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2



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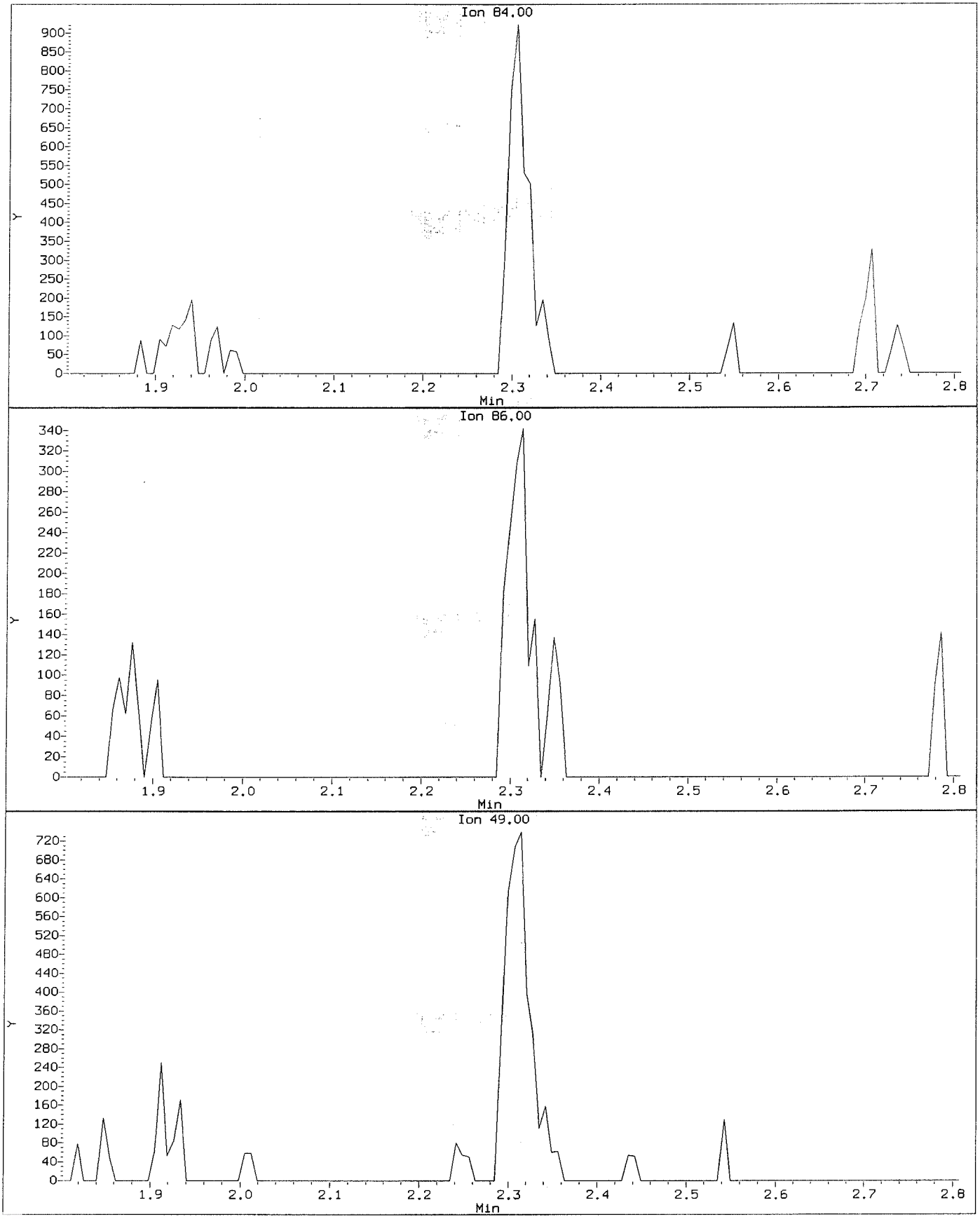
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Methylene Chloride
CAS Number: 75-09-2



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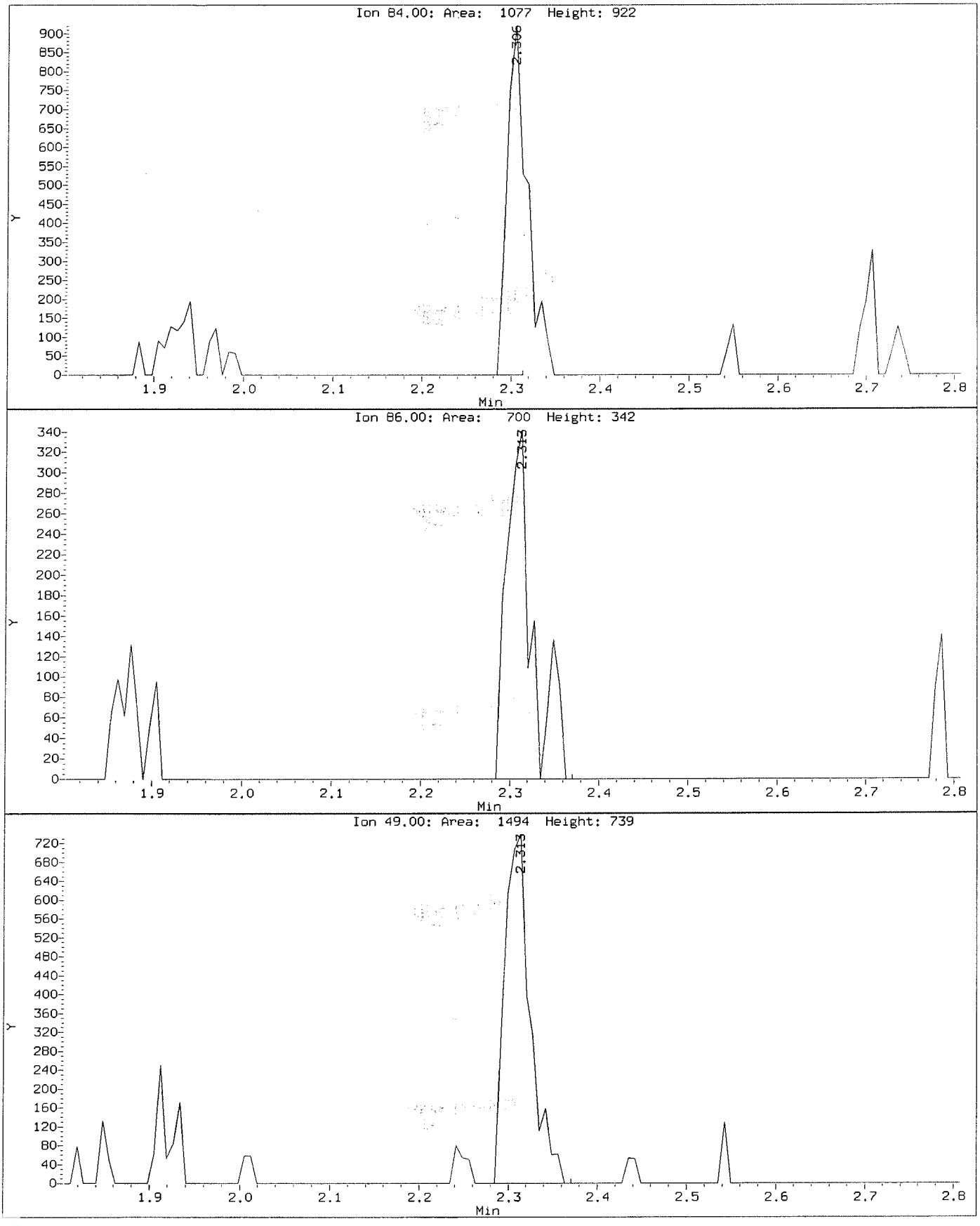
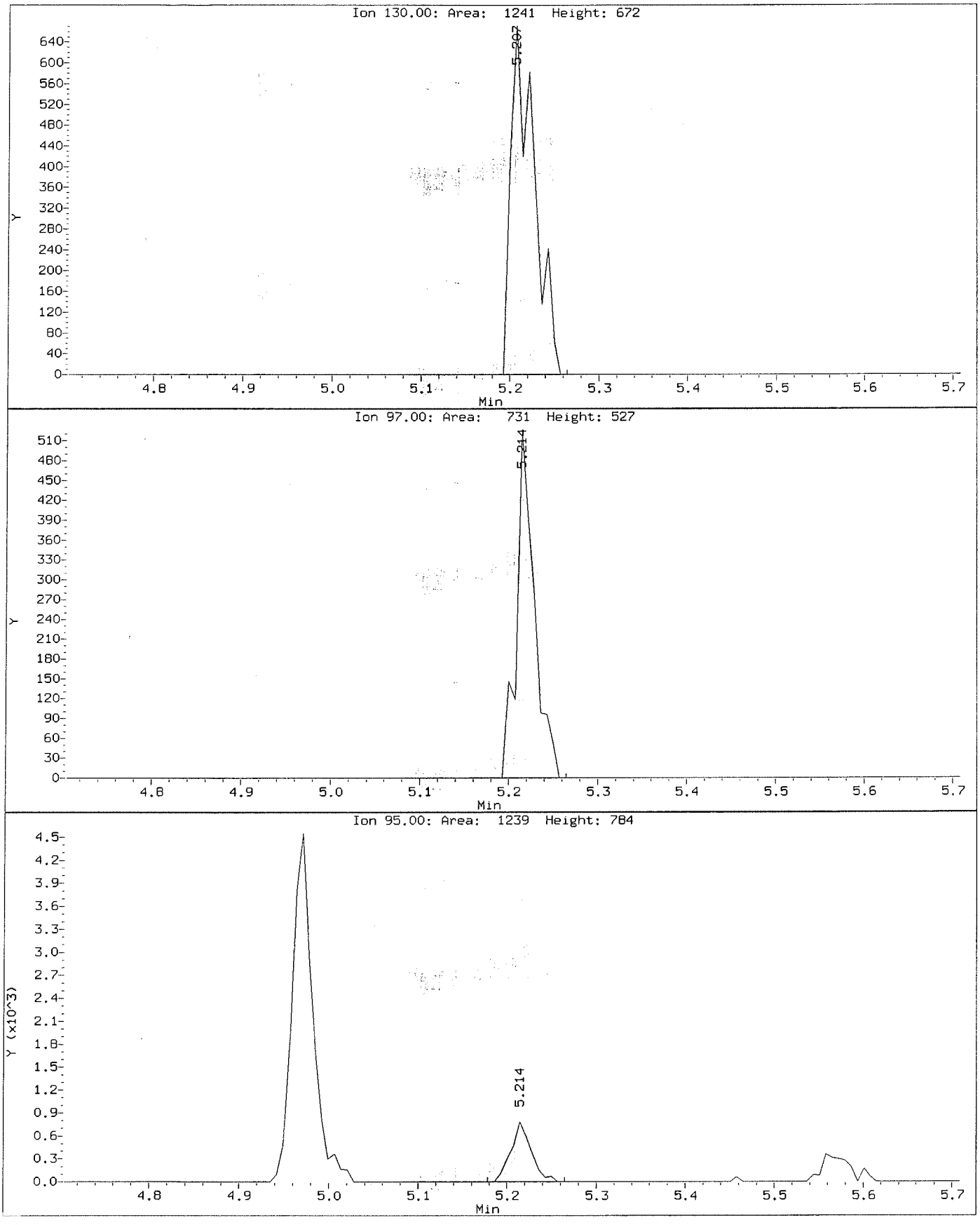
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Methylene Chloride
CAS Number: 75-09-2



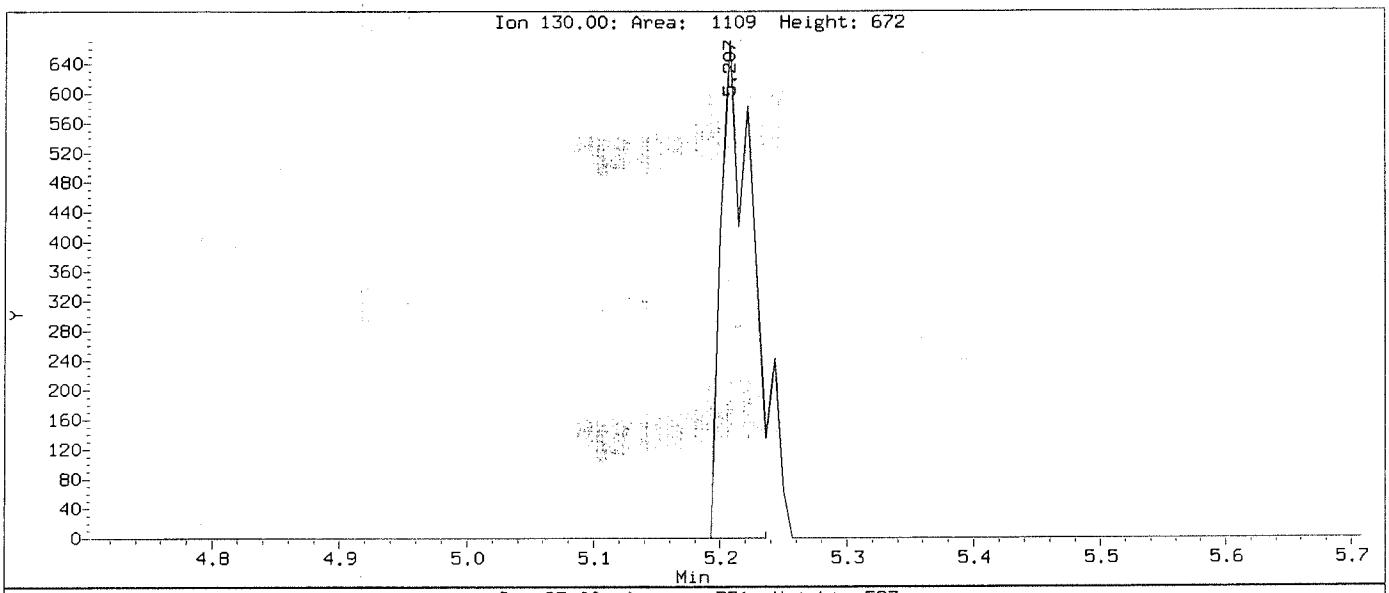
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

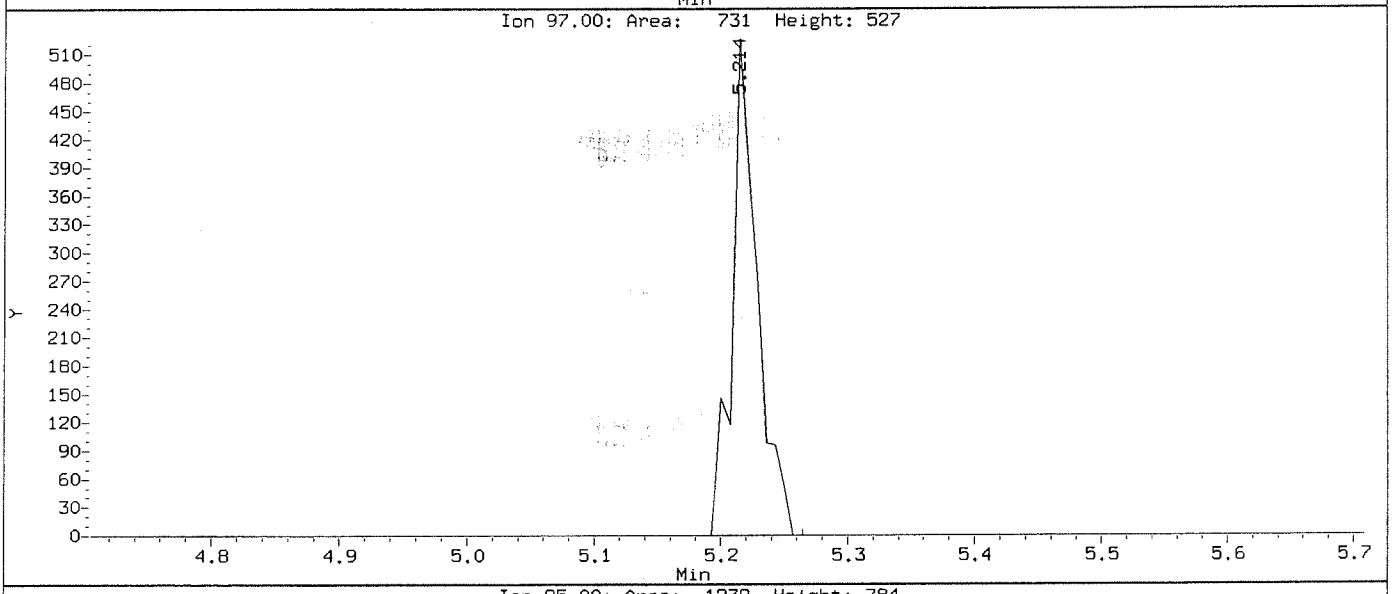
Compound: Trichloroethene
CAS Number: 79-01-6

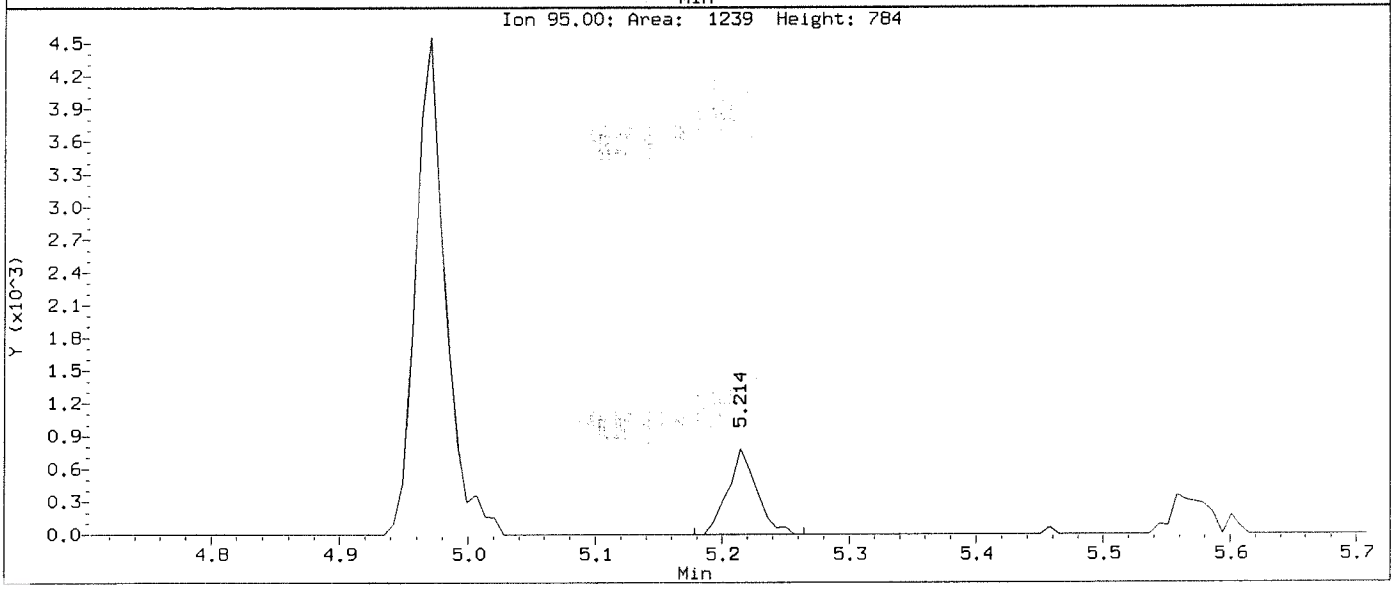


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Trichloroethene
CAS Number: 79-01-6

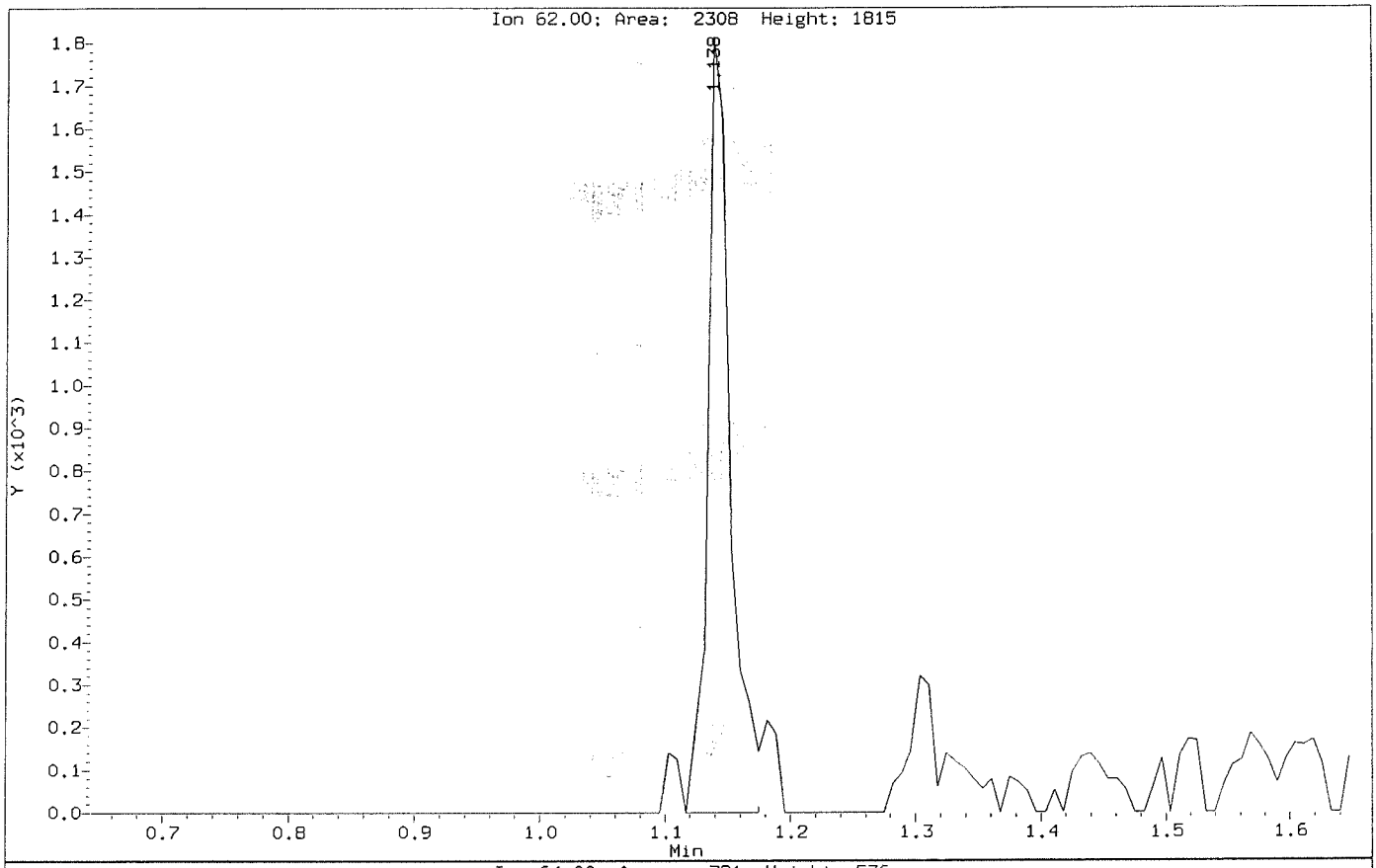


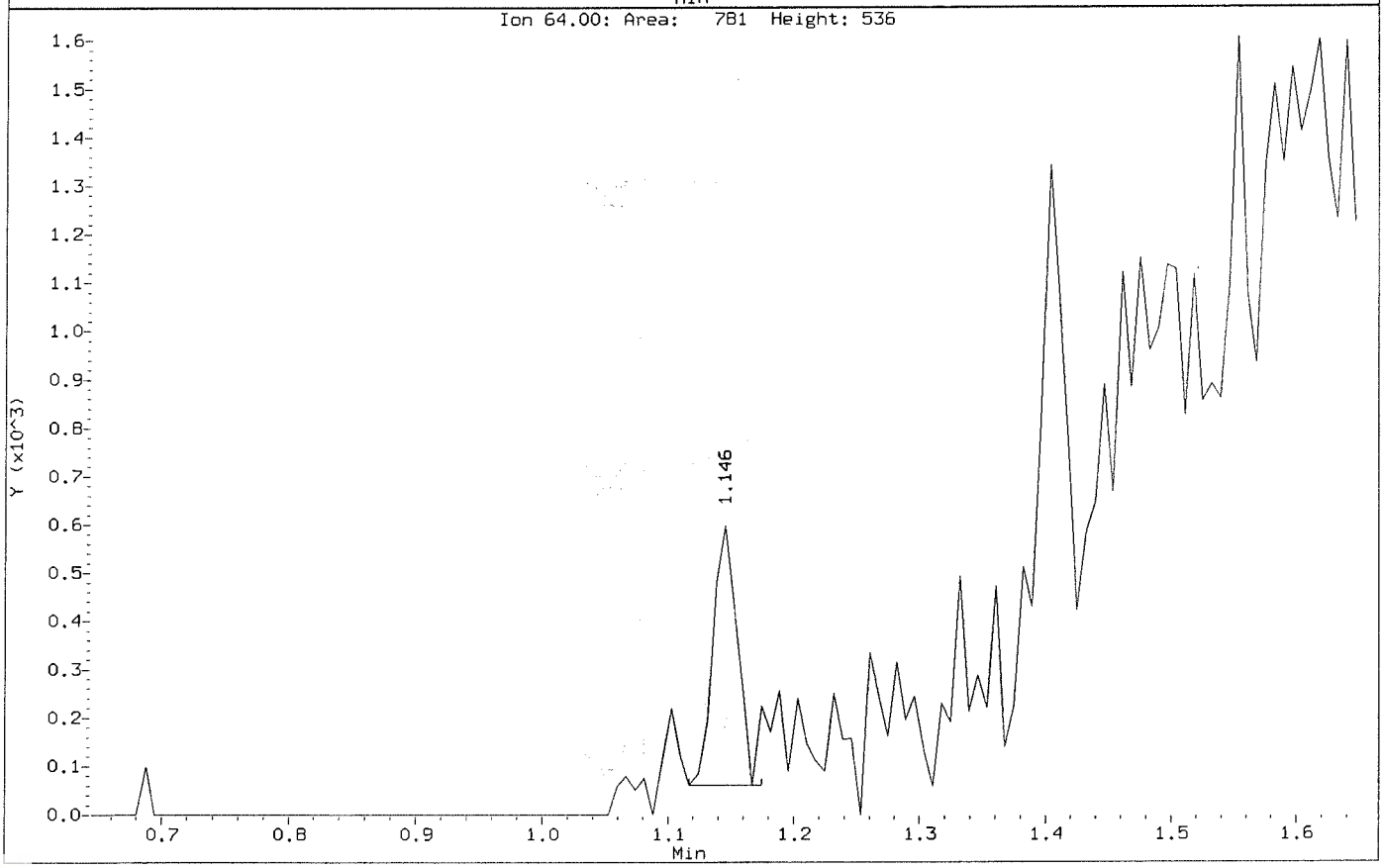




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

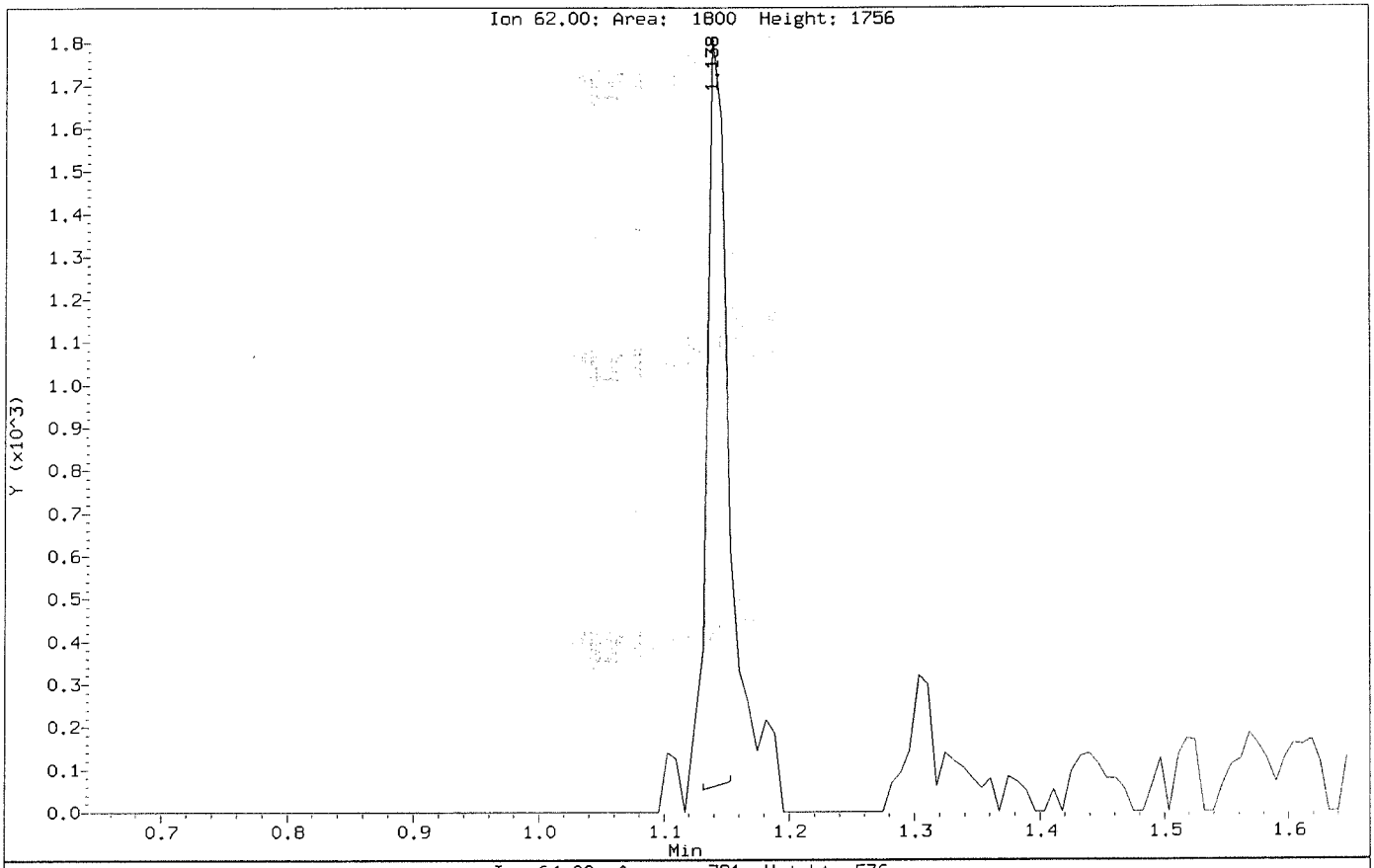
Compound: Vinyl Chloride
CAS Number: 75-01-4

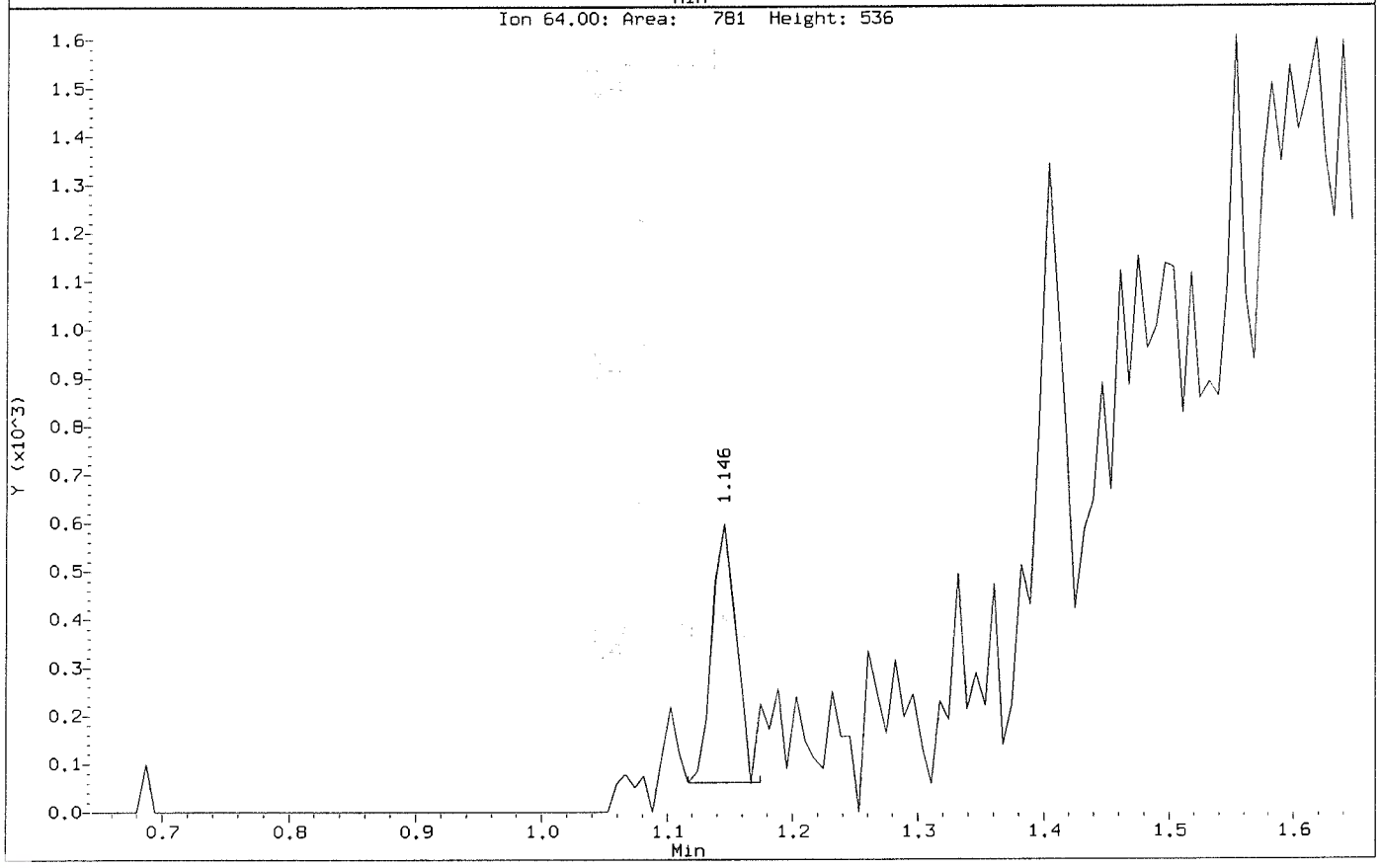




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110303.D
Injection Date: 03-NOV-2020 12:43
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D Page 1
Report Date: 30-Nov-2020 15:10

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 03-NOV-2020 13:04
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 12:43 Cal File: X110303.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

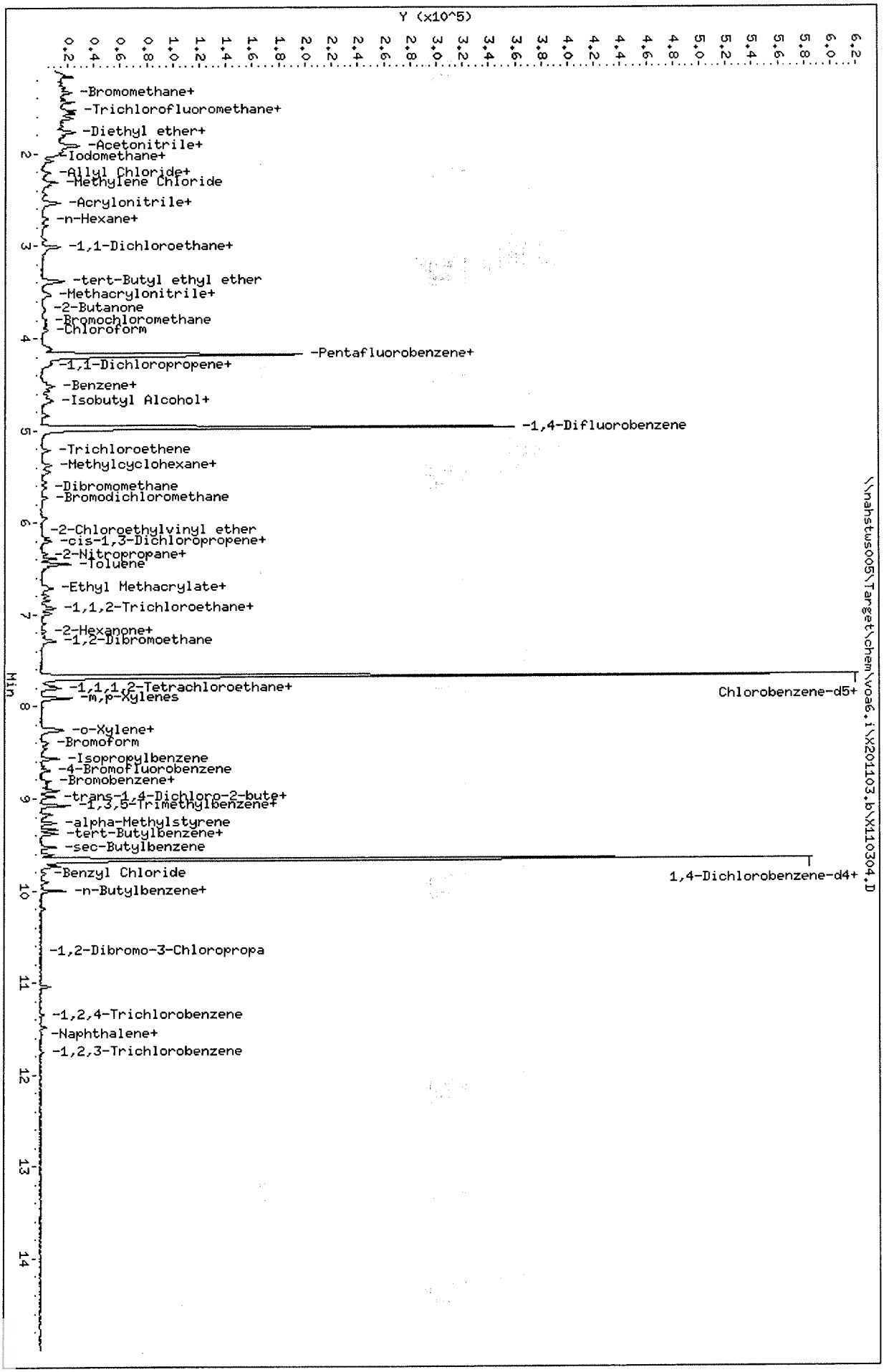
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	140540	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	259506	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	246266	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	105397	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.072)	2593	1.00000	0.74(TaM)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	2114	1.00000	1.29(a)
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	1960	1.00000	1.03(a)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	6340	1.00000	0.96(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1596	1.00000	1.05(a)
11 1,1-Dichloroethene	96	1.926	1.926	(0.461)	2918	1.00000	1.10(aM)
33 1,2-Dichloroethane	62	4.569	4.569	(0.919)	3106	1.00000	1.11(aM)
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.846)	1838	1.00000	0.89(a)
17 Methylene Chloride	84	2.305	2.305	(0.551)	2145	1.00000	1.11(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	1646	1.00000	0.95(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	3389	1.00000	1.09(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

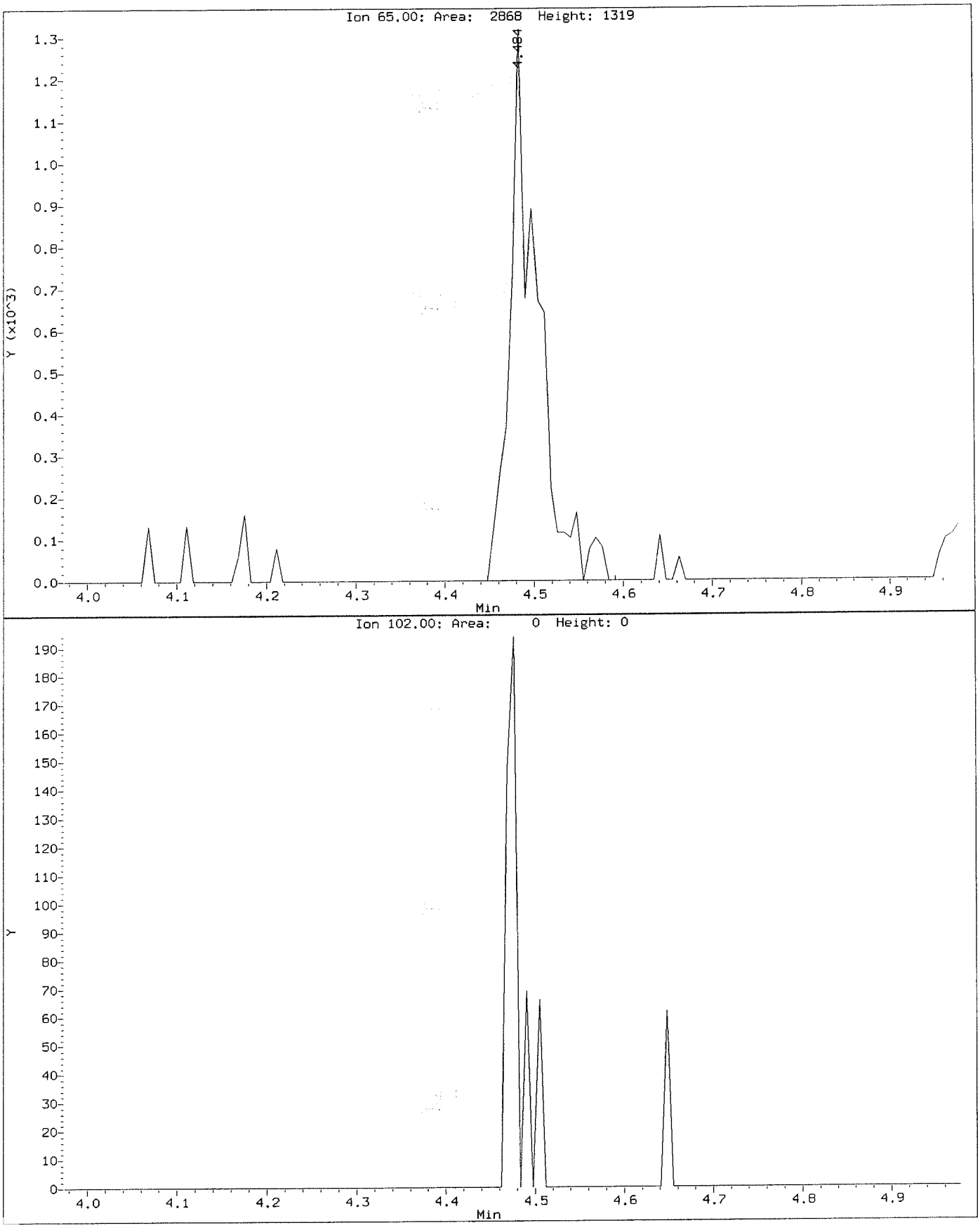


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Date : 03-NOV-2020 13:04
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

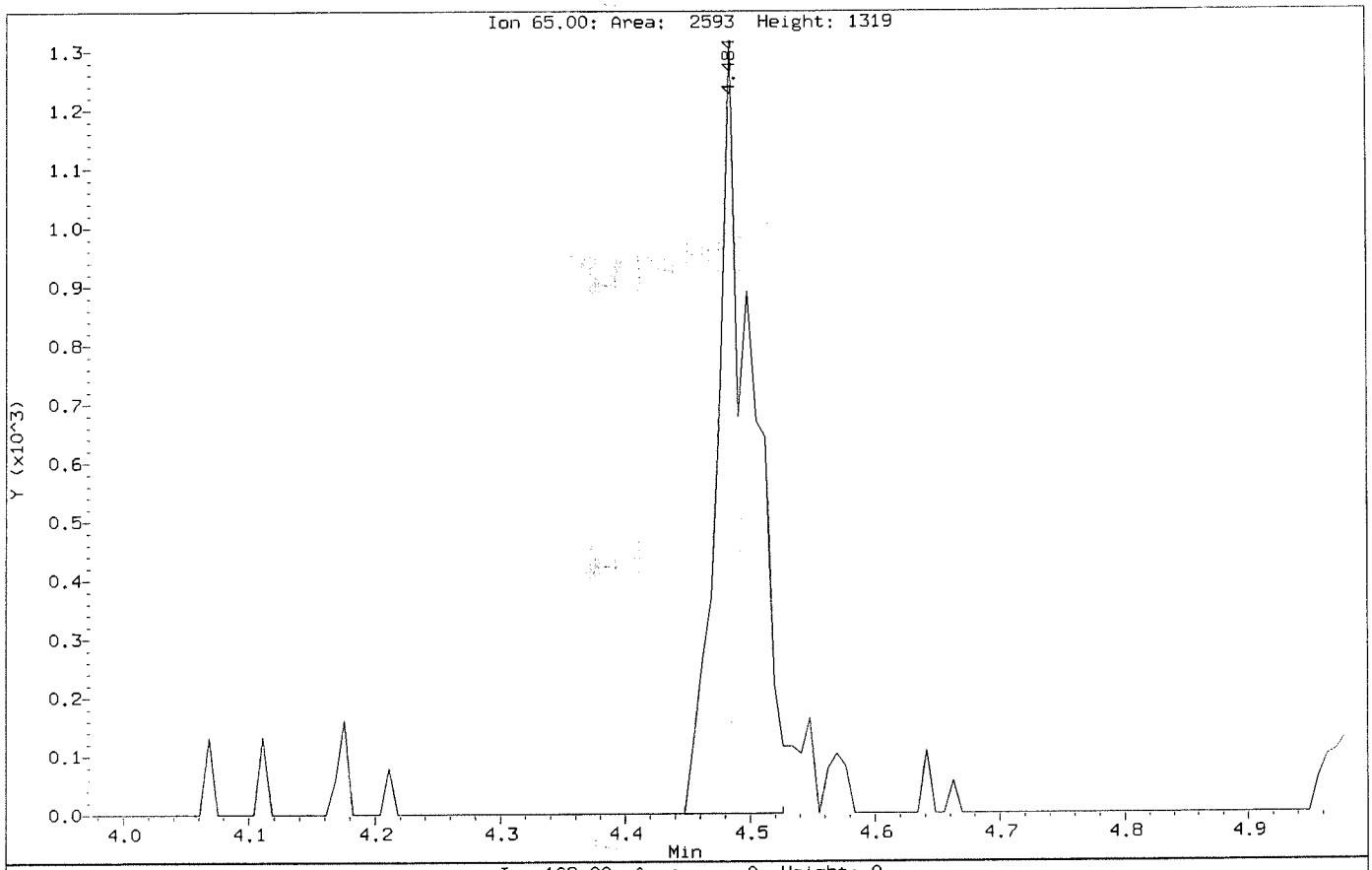
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

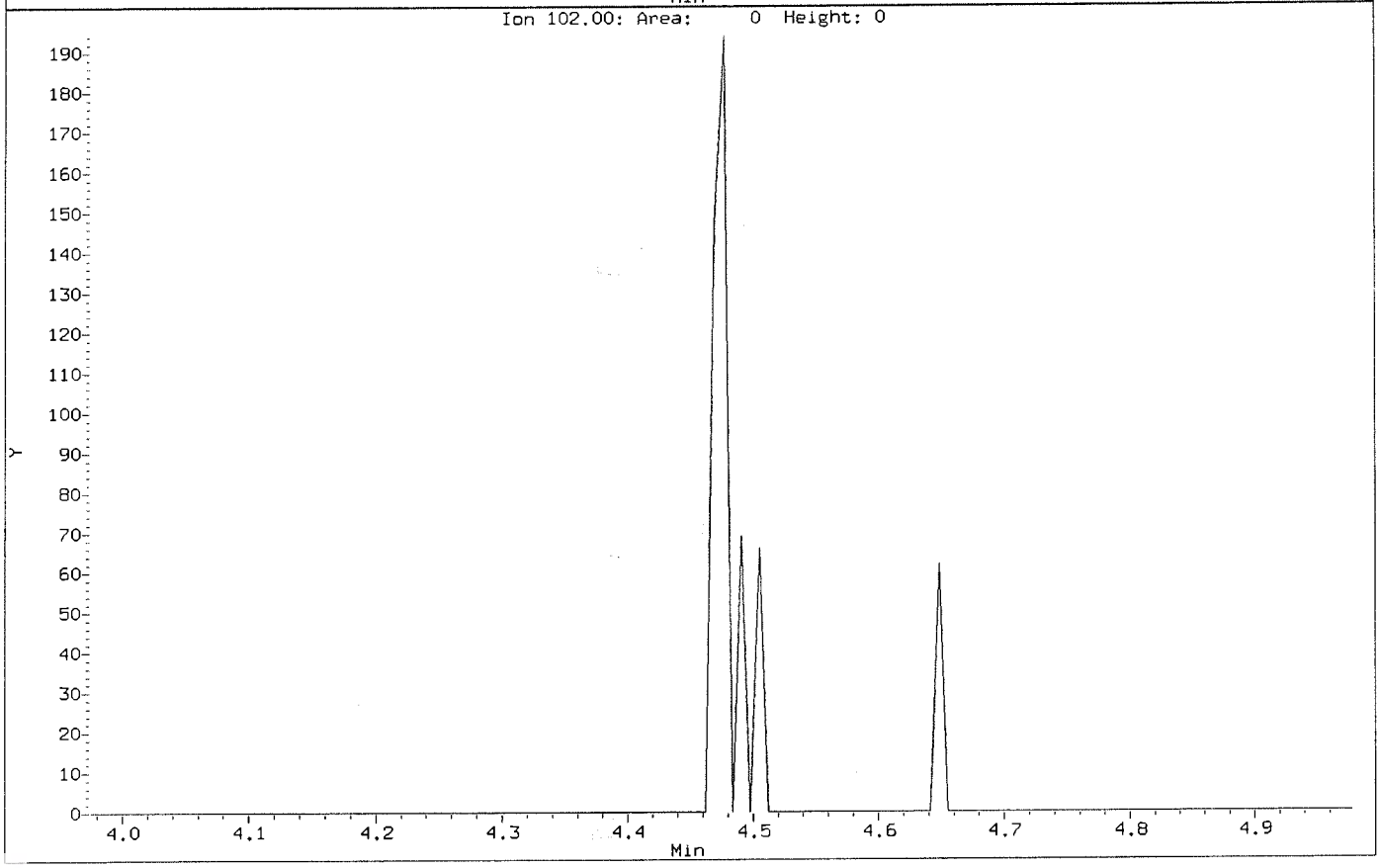
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

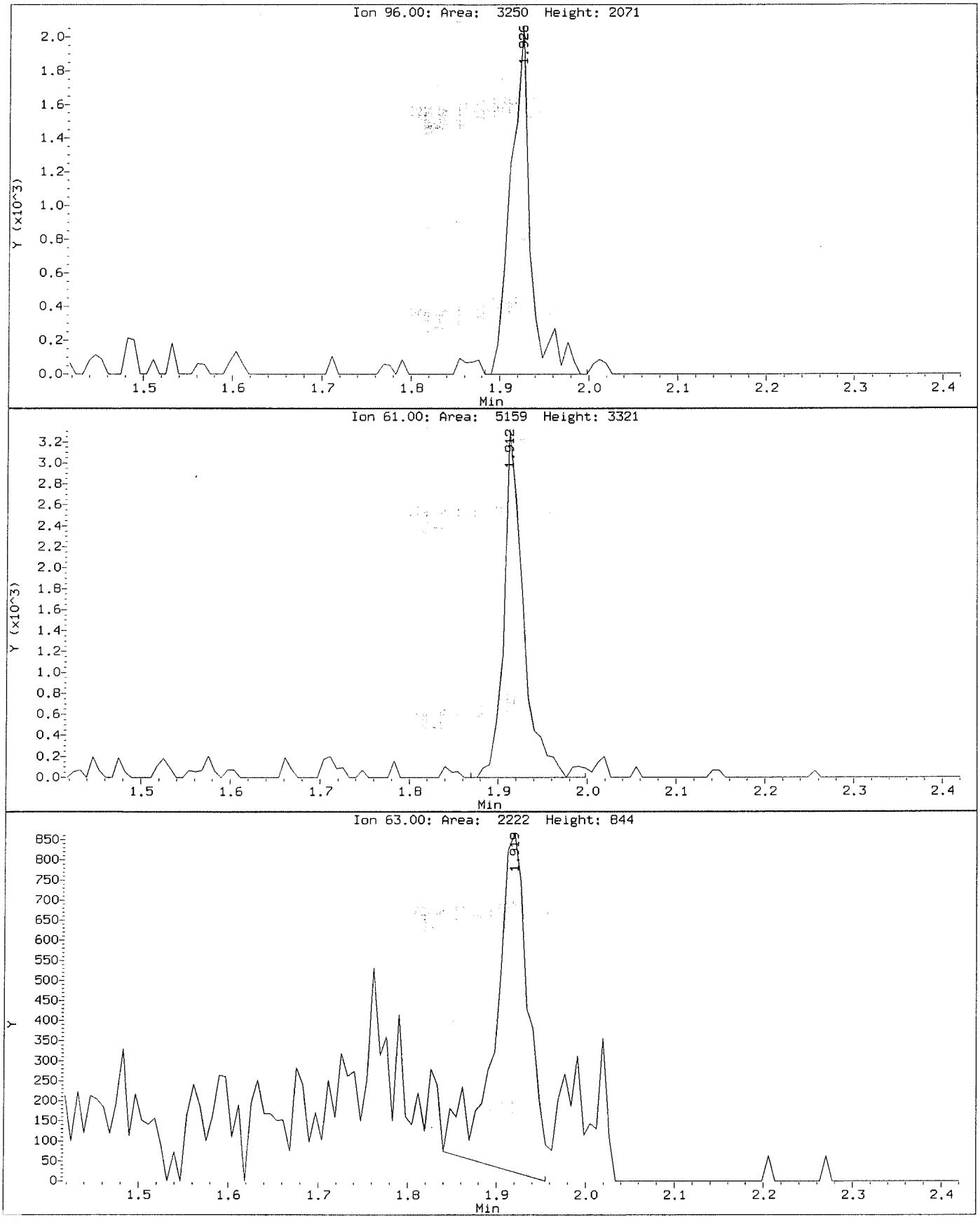
Compound: 1,2-Dichloroethane-d4
CAS Number: 17060-07-0





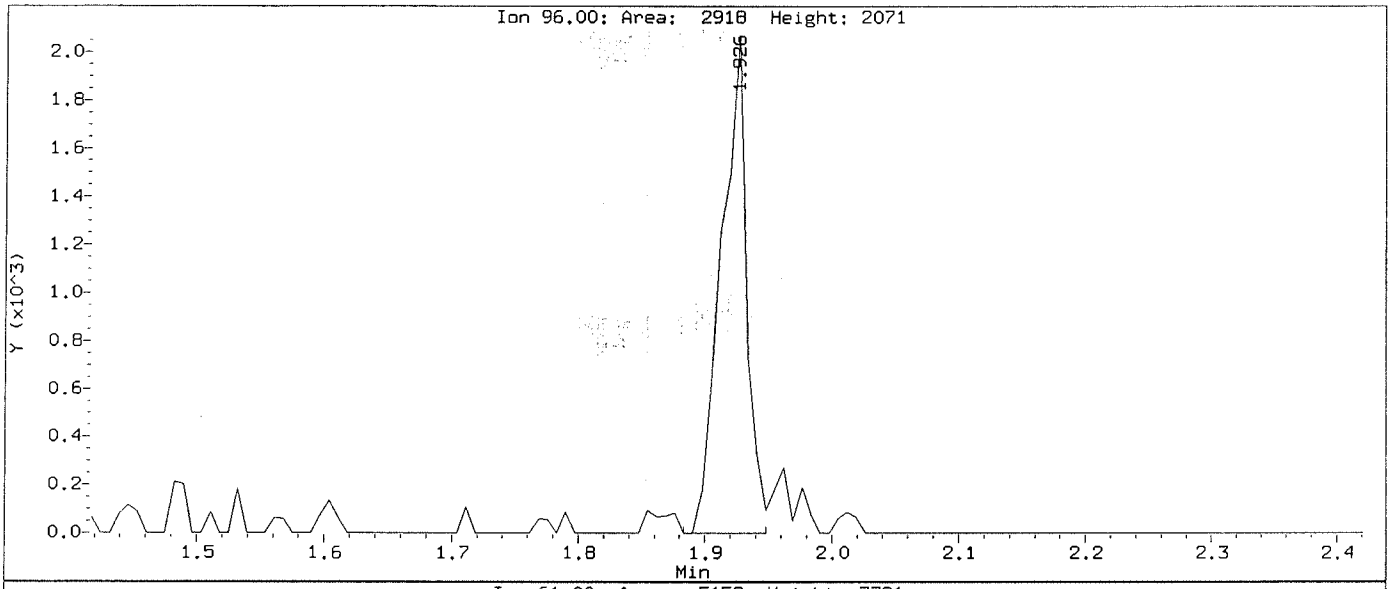
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

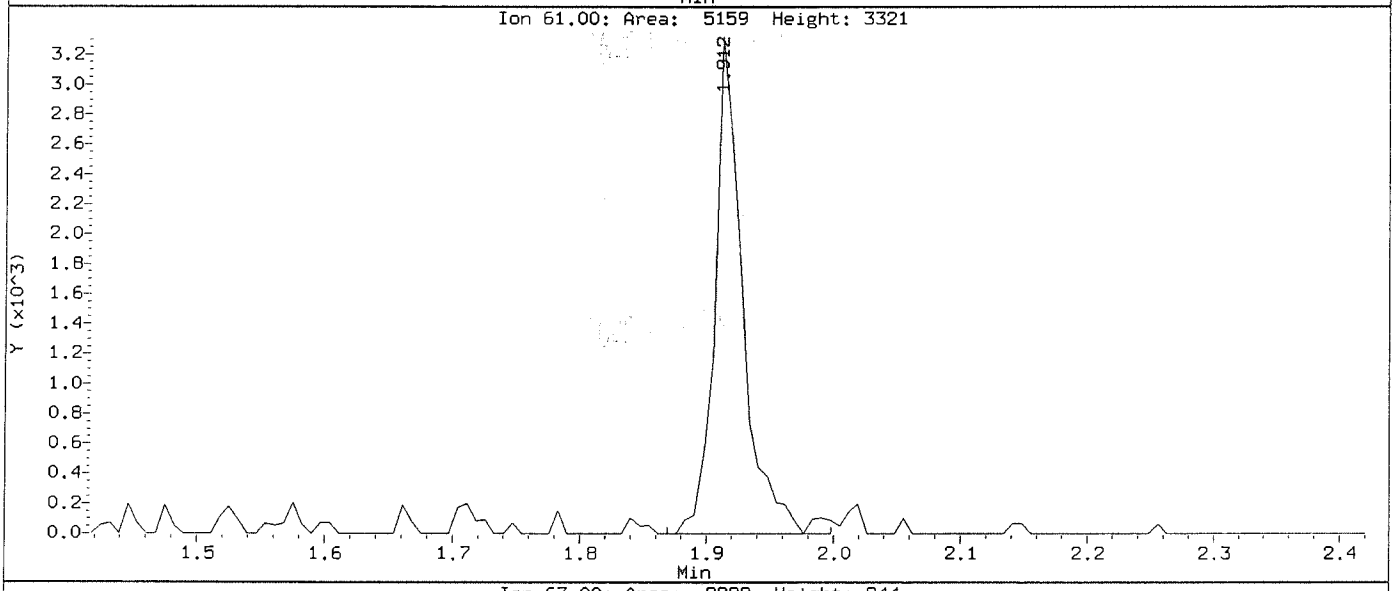
Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

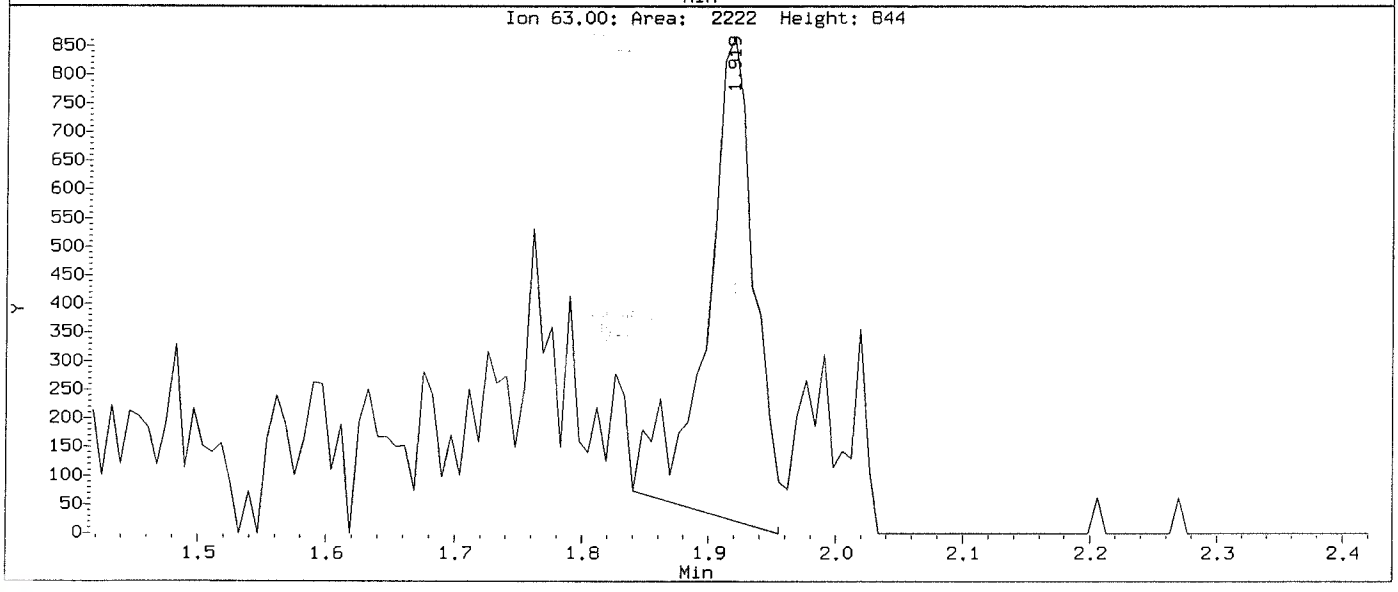


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4

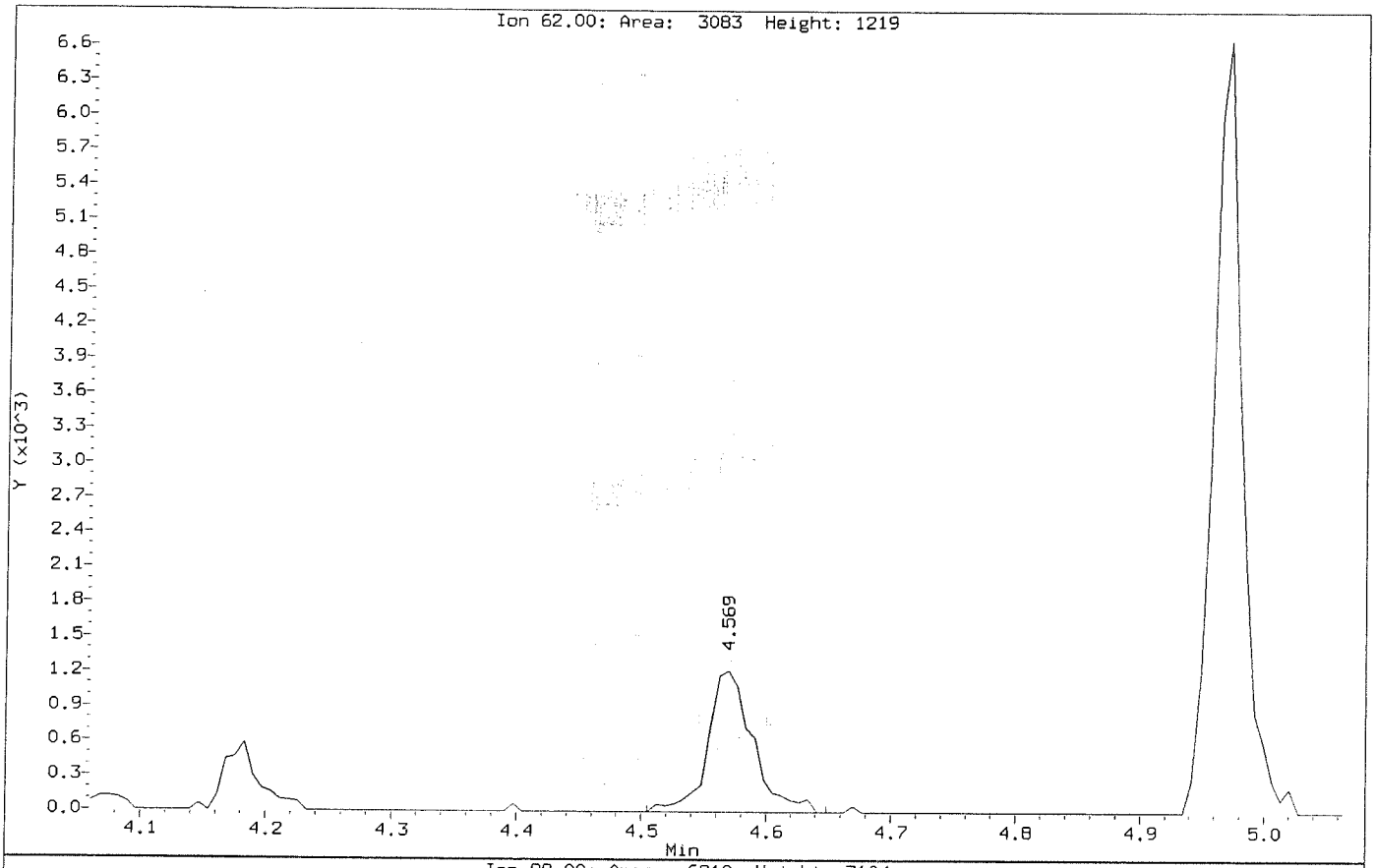


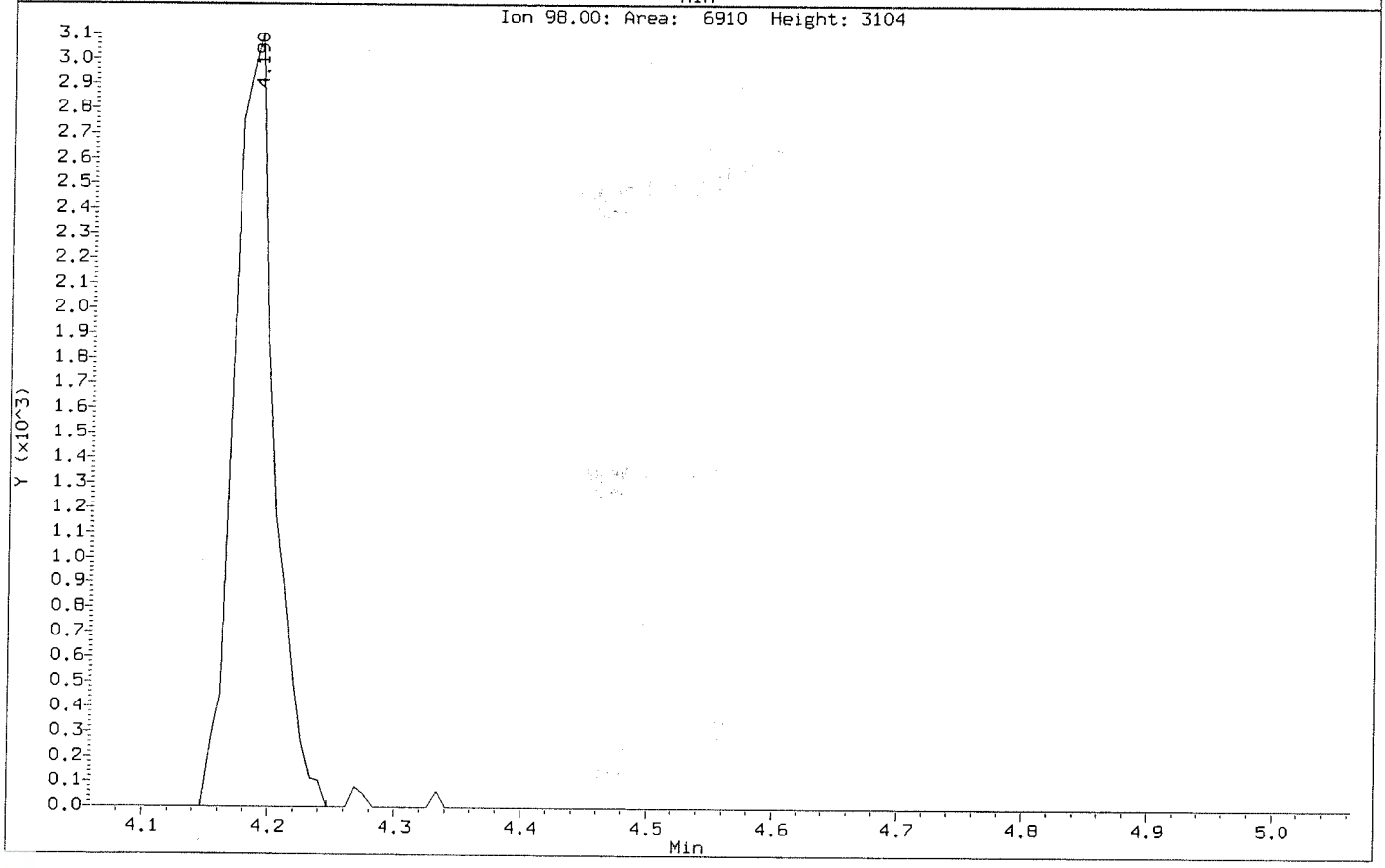




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

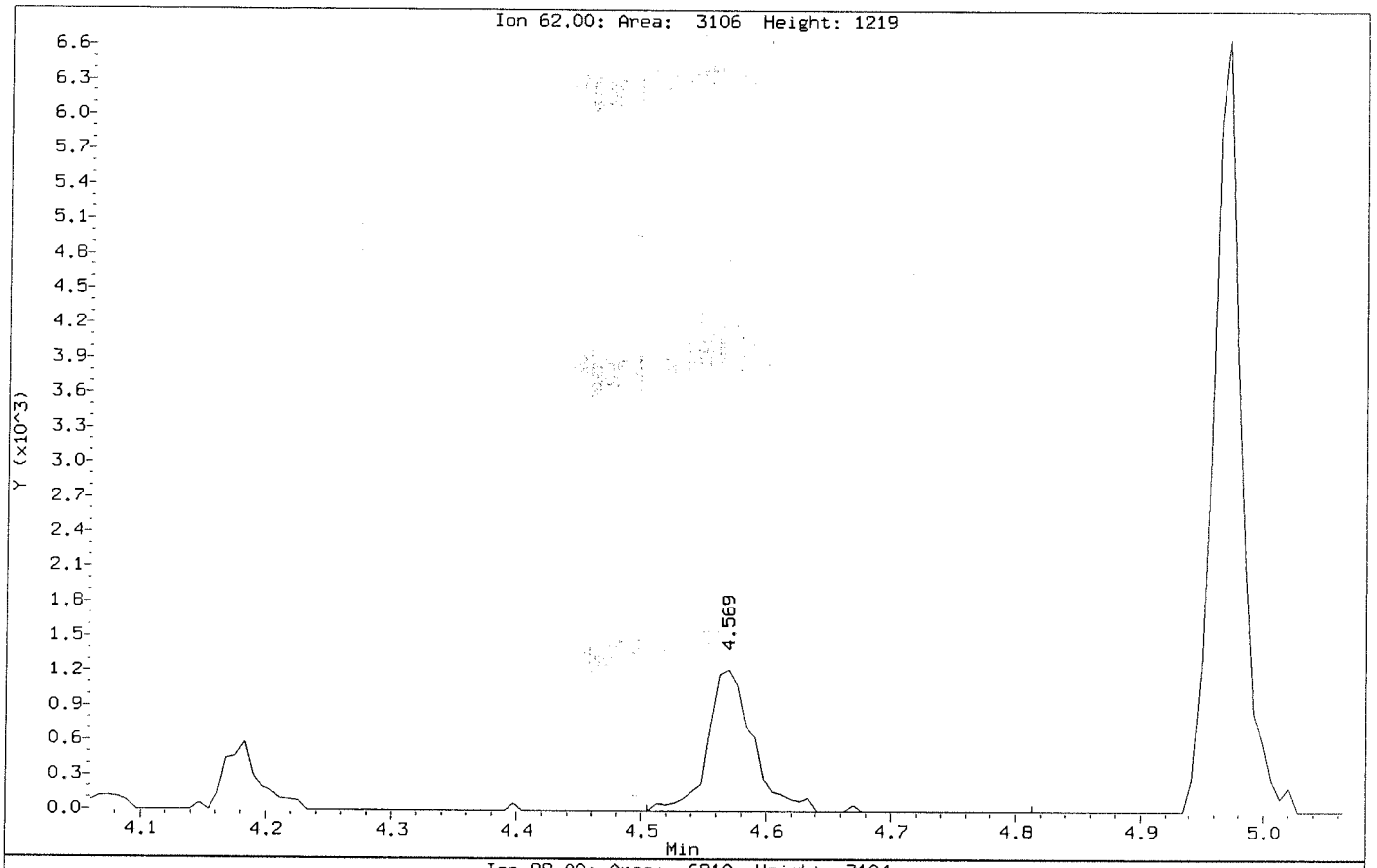
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

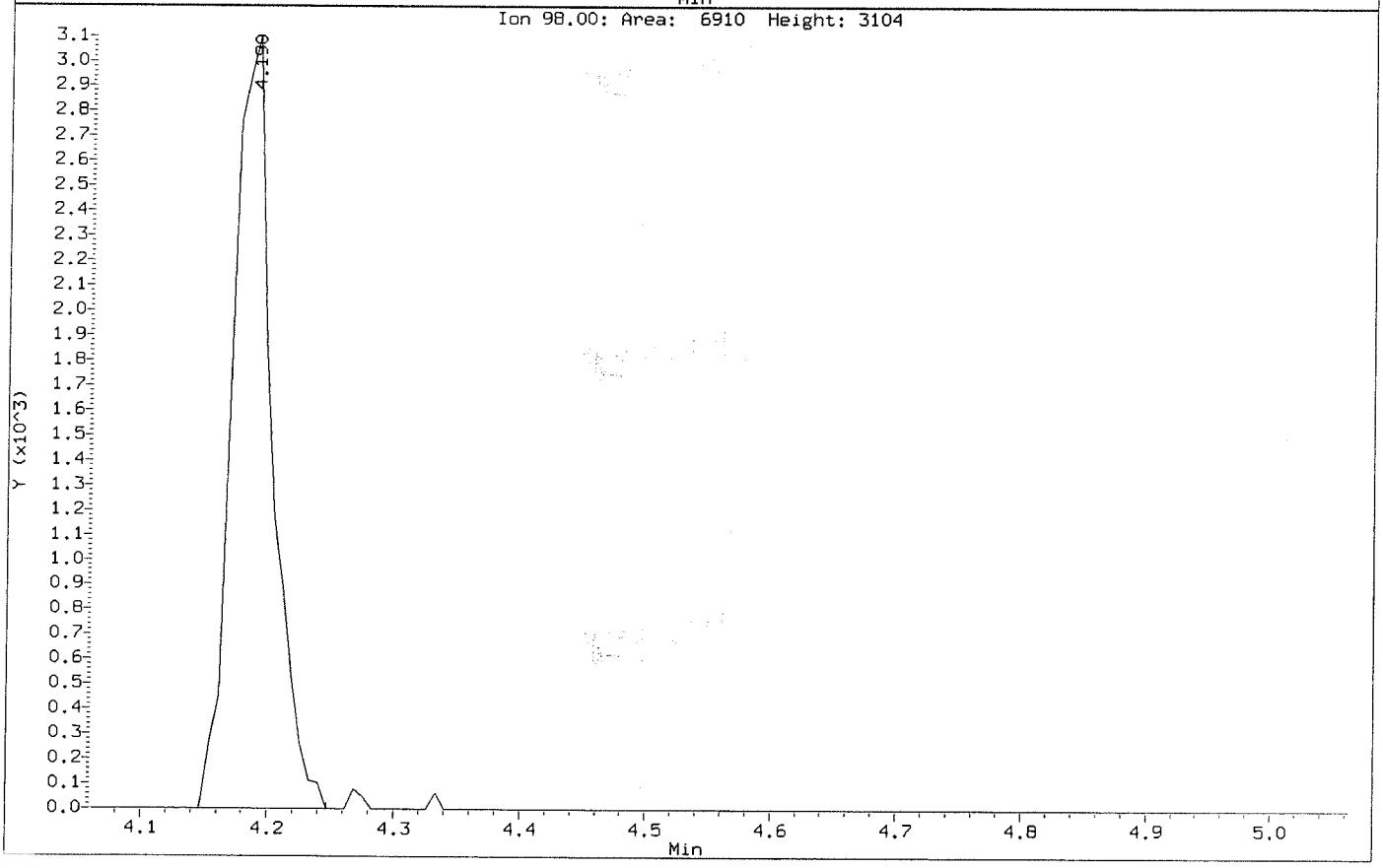




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

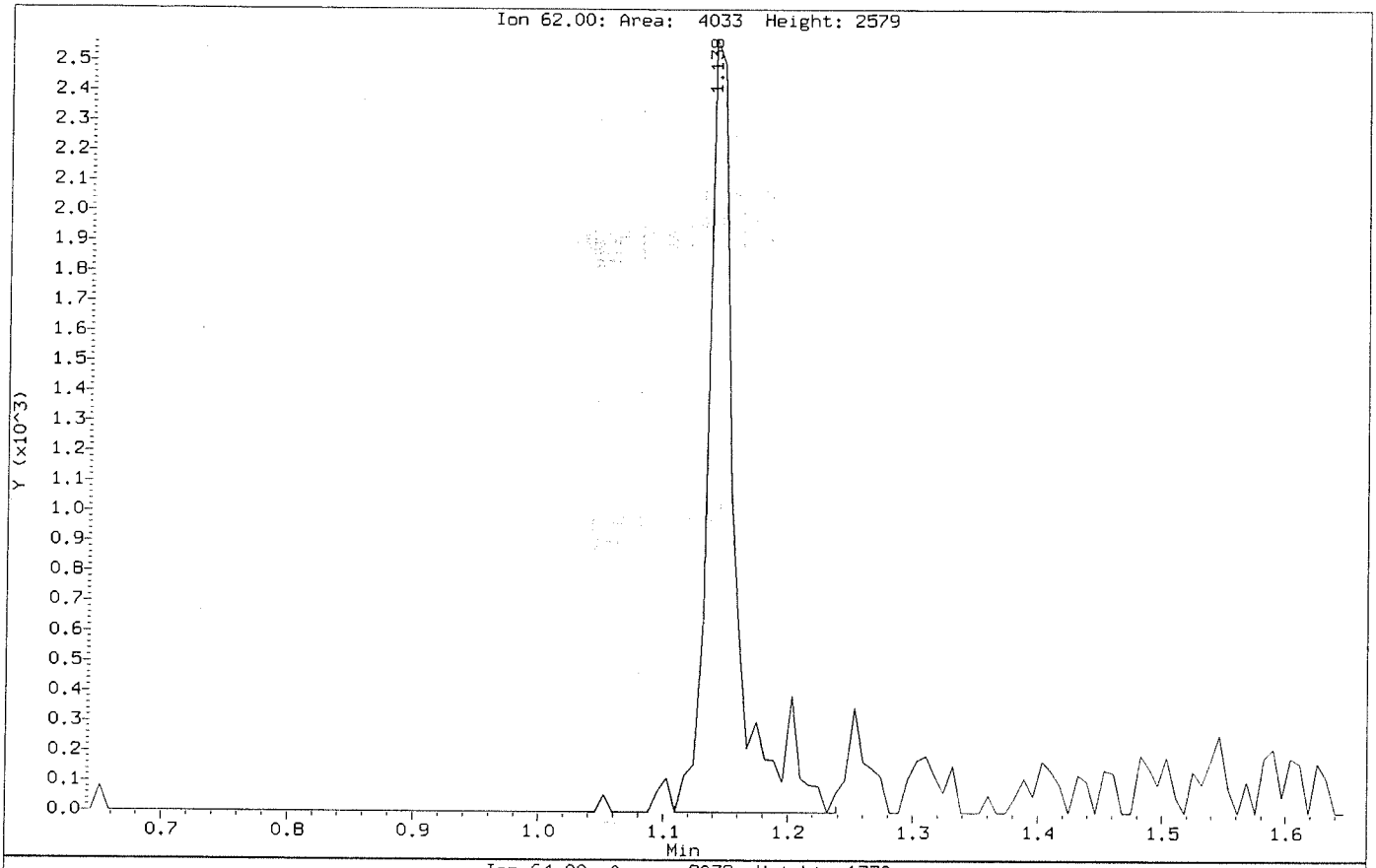
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

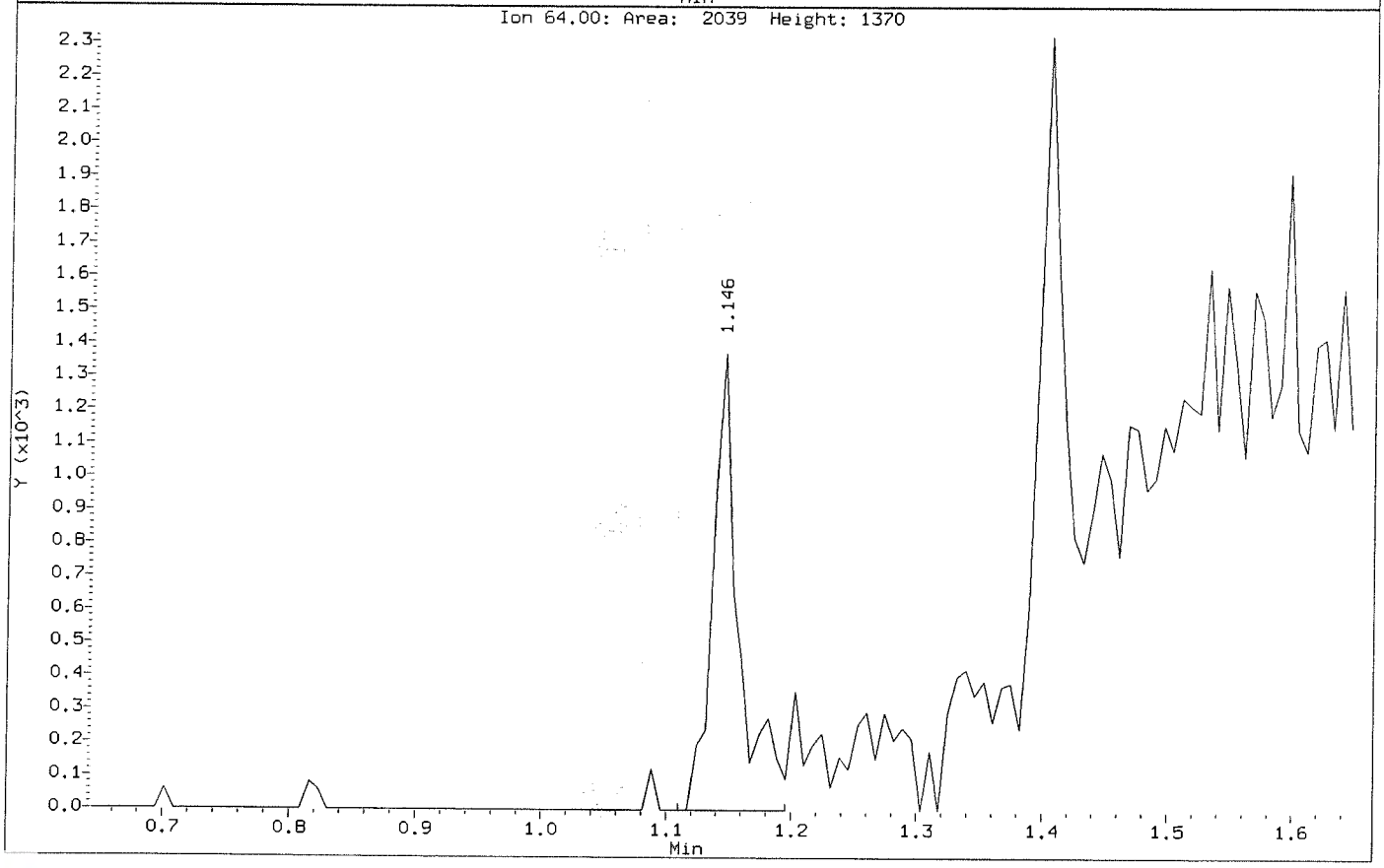




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

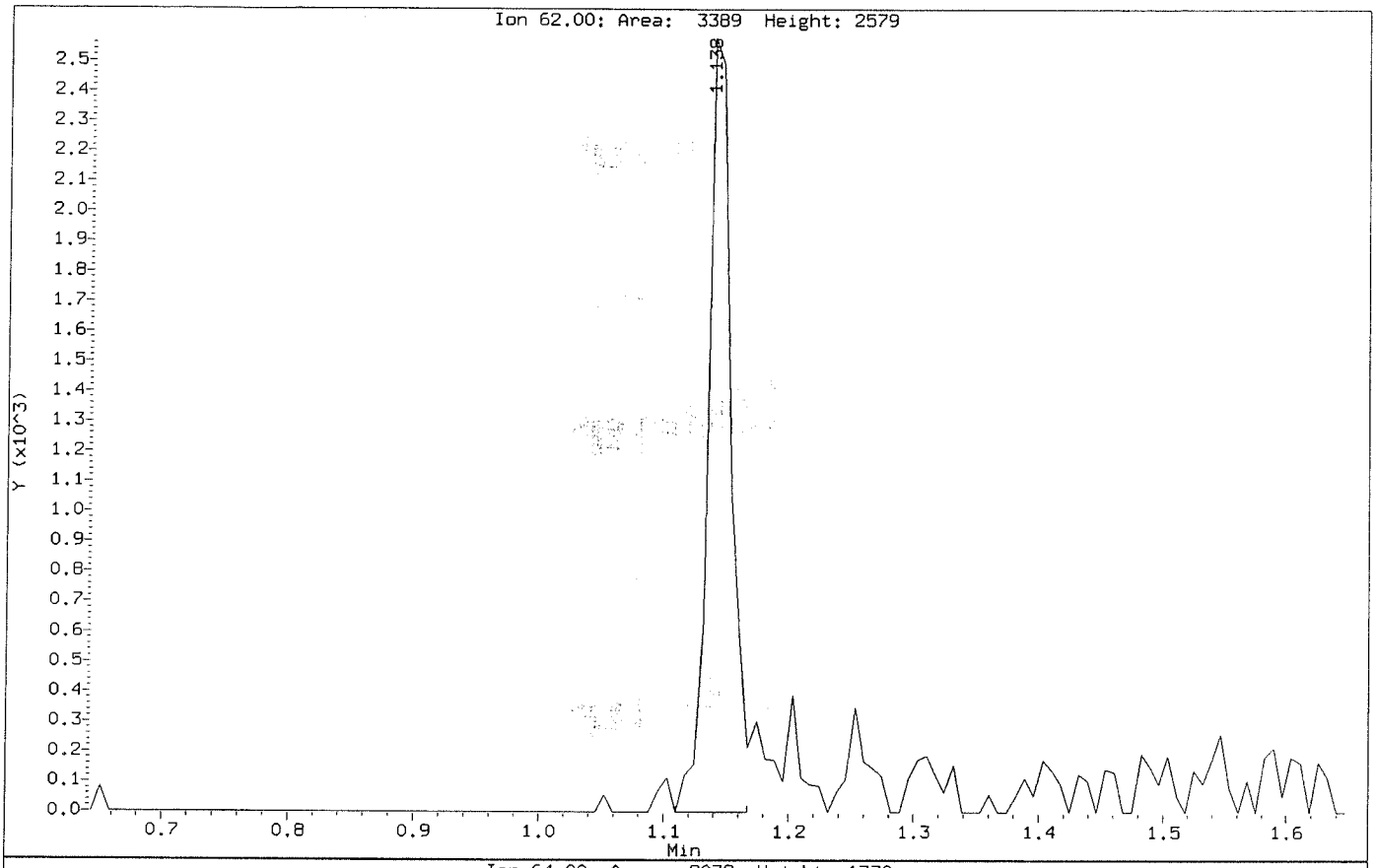
Compound: Vinyl Chloride
CAS Number: 75-01-4

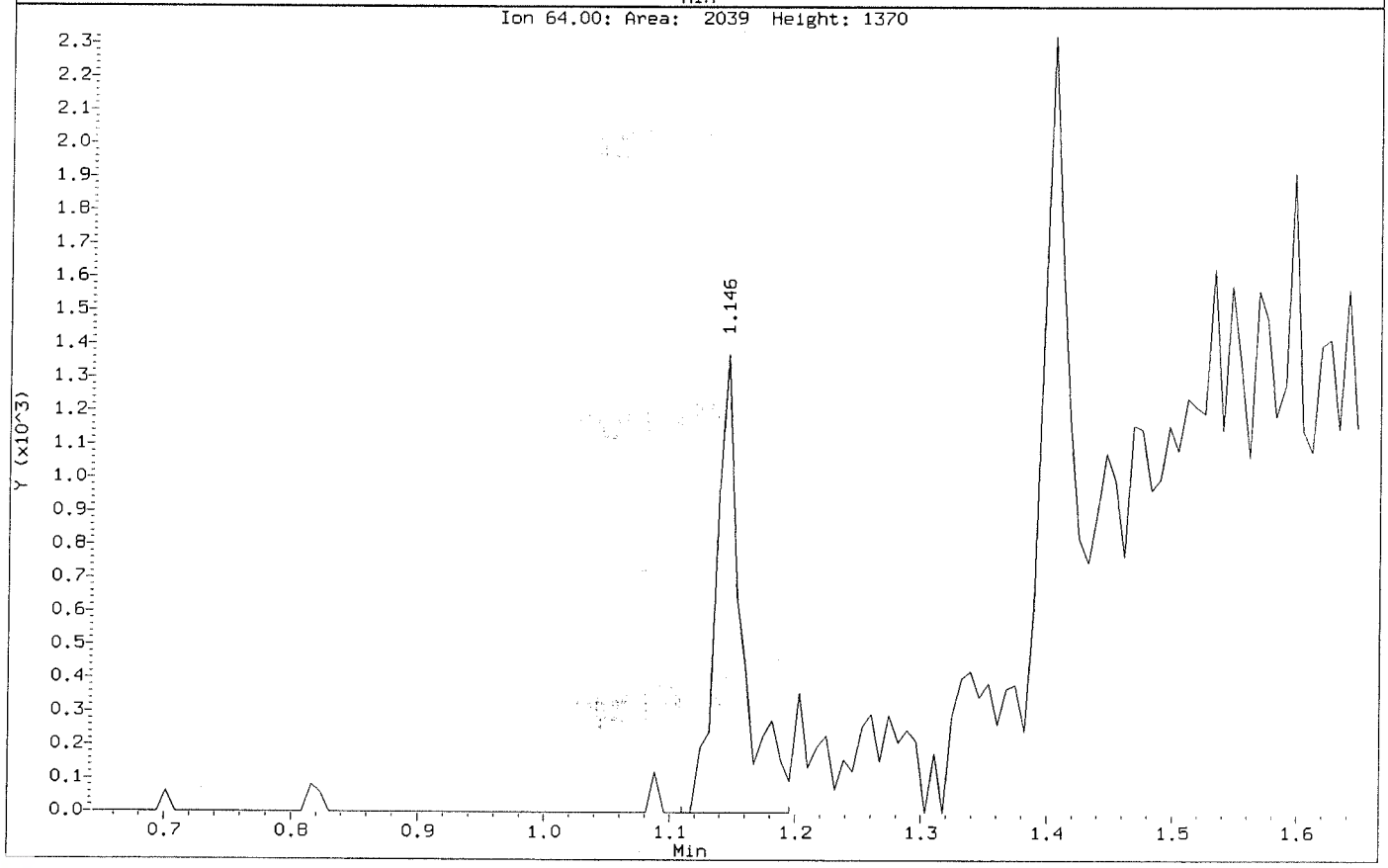




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110304.D
Injection Date: 03-NOV-2020 13:04
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Vinyl Chloride
CAS Number: 75-01-4





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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110305.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 03-NOV-2020 13:24
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 13:04 Cal File: X110304.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

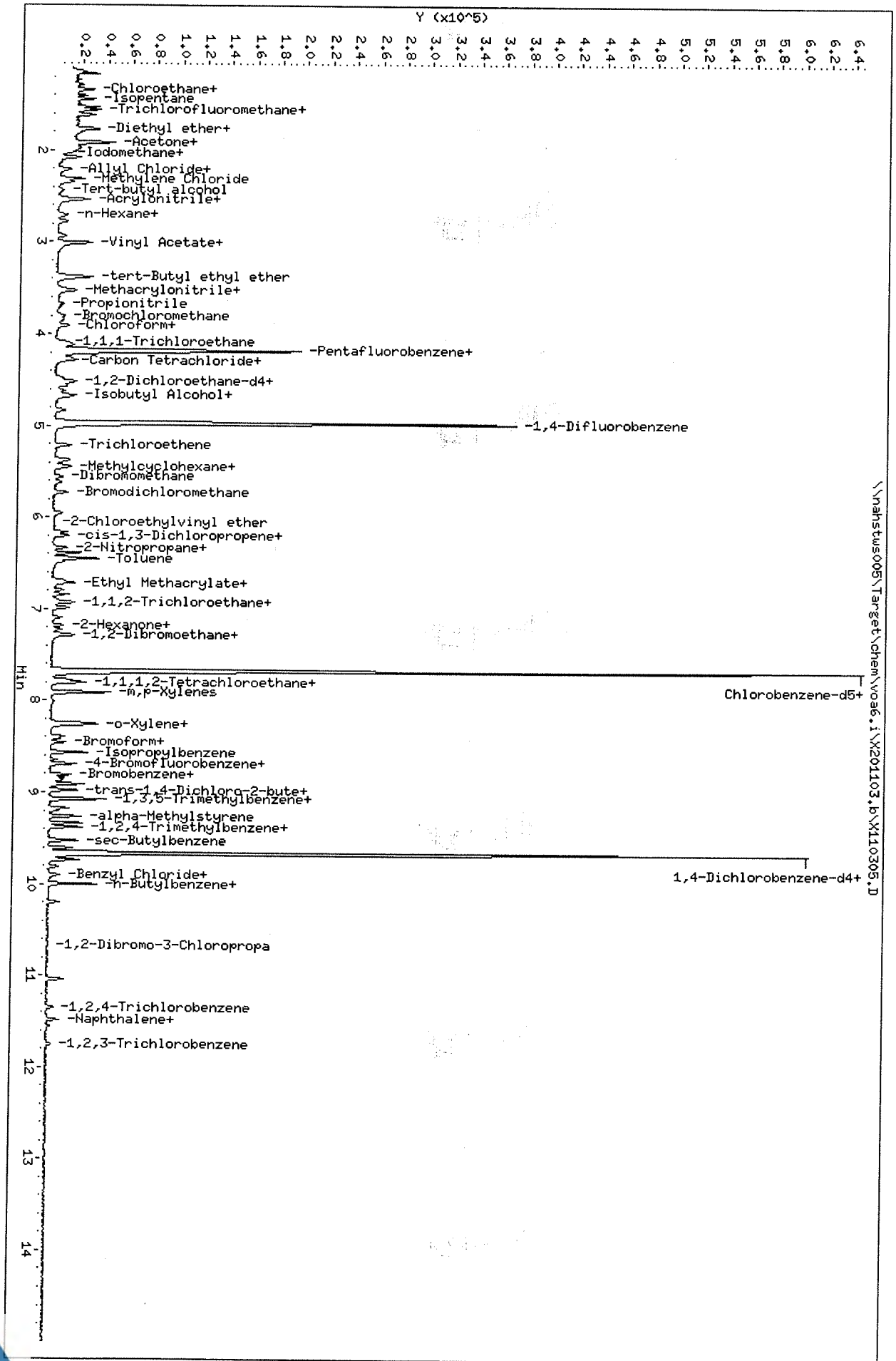
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	138290	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	259024	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	248739	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	106098	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.483	4.483	(1.072)	5018	2.00000	1.93(a)
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	4690	2.00000	2.47(a)
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	3693	2.00000	1.98(a)
$	48 Toluene-d8	98	6.388	6.388	(0.833)	12459	2.00000	1.87(a)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	2796	2.00000	1.82(a)
	11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	5185	2.00000	1.98(a)
	33 1,2-Dichloroethane	62	4.569	4.569	(0.919)	5501	2.00000	1.96(aM)
	27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.846)	4196	2.00000	2.06(a)
	17 Methylene Chloride	84	2.305	2.305	(0.551)	3913	2.00000	2.06(a)
	38 Trichloroethene	130	5.214	5.214	(1.049)	3905	2.00000	2.26(aM)
	5 Vinyl Chloride	62	1.145	1.145	(0.274)	6176	2.00000	2.02(aM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

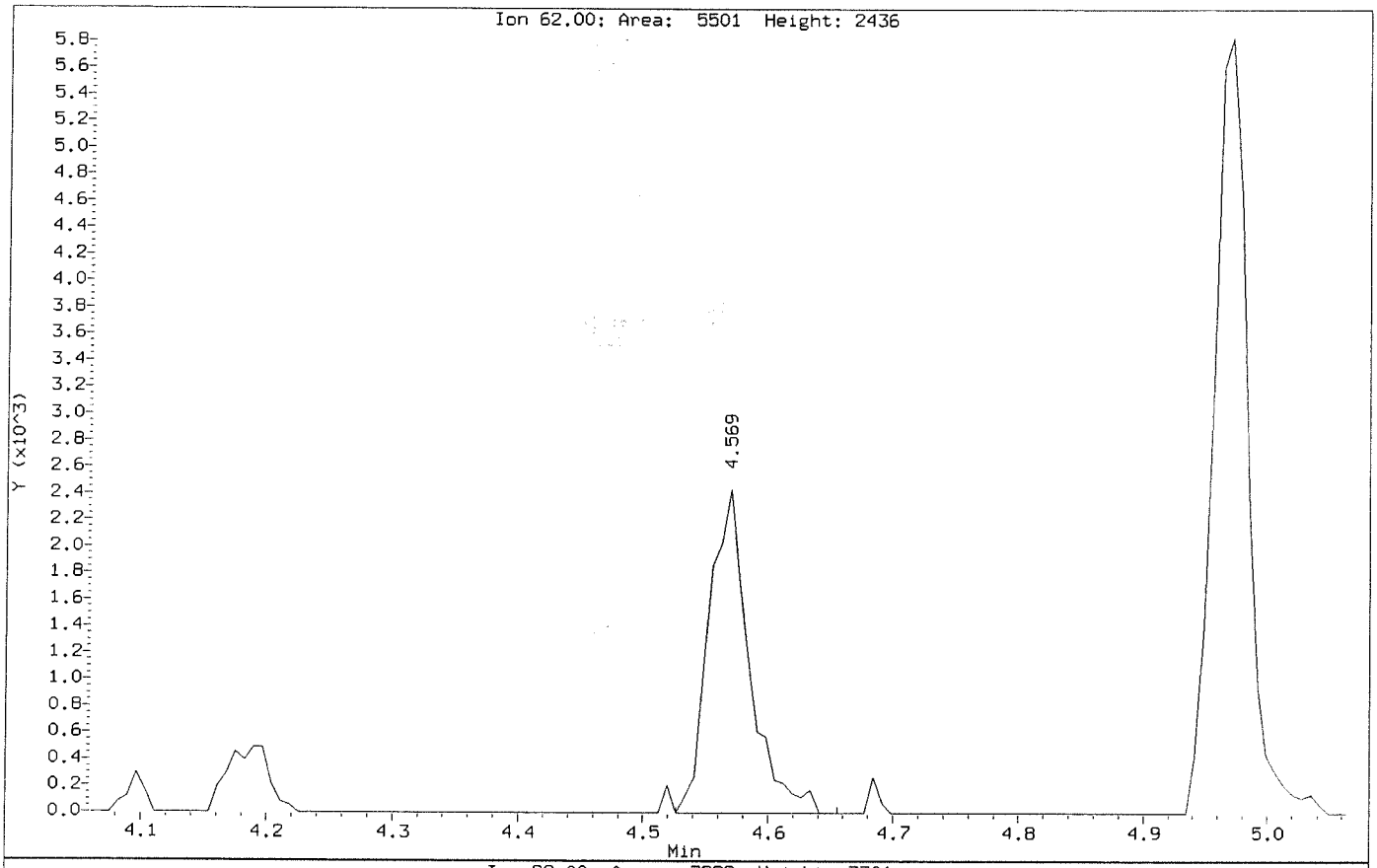


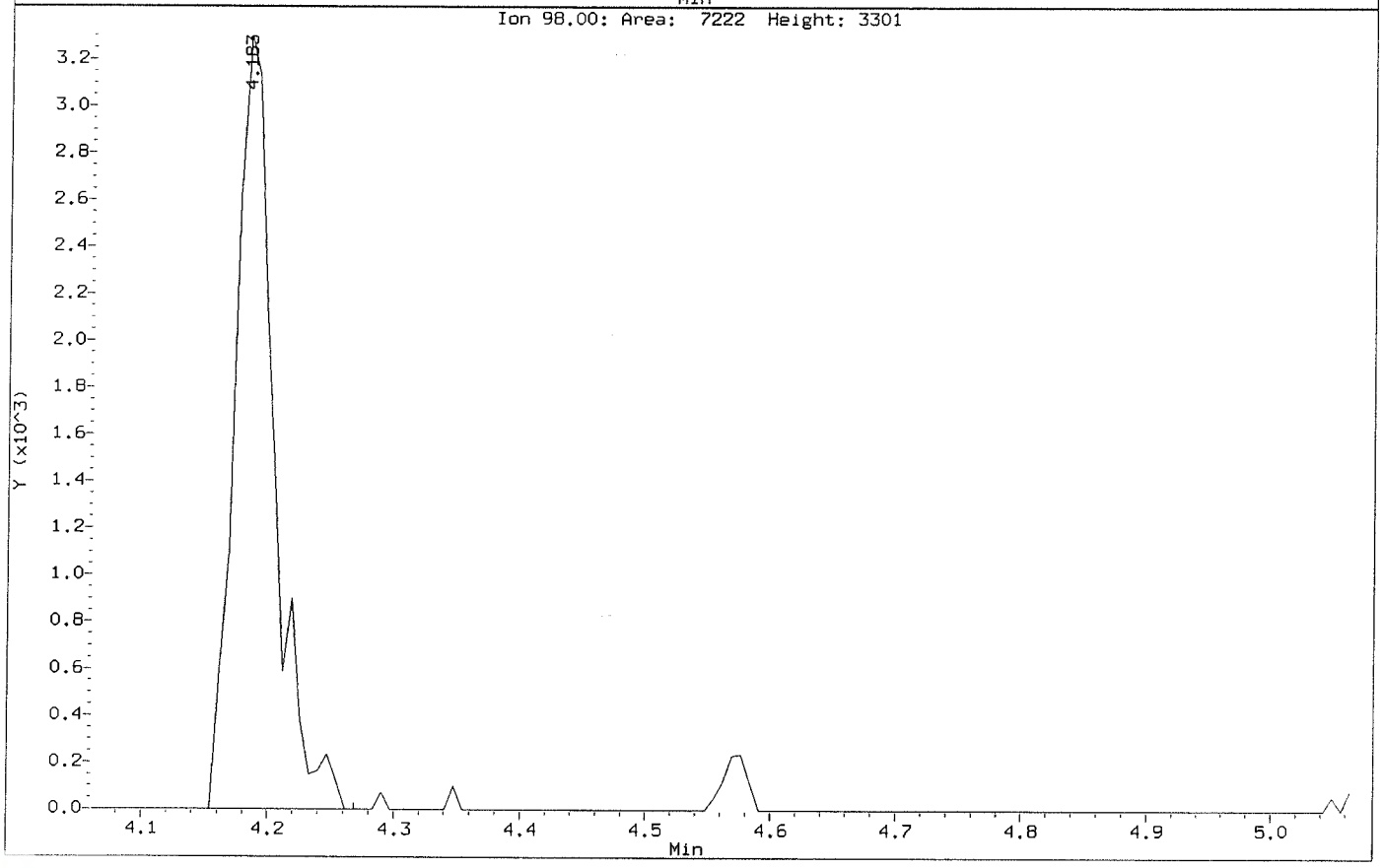
Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\X110305.D
Date : 03-NOV-2020 13:24
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

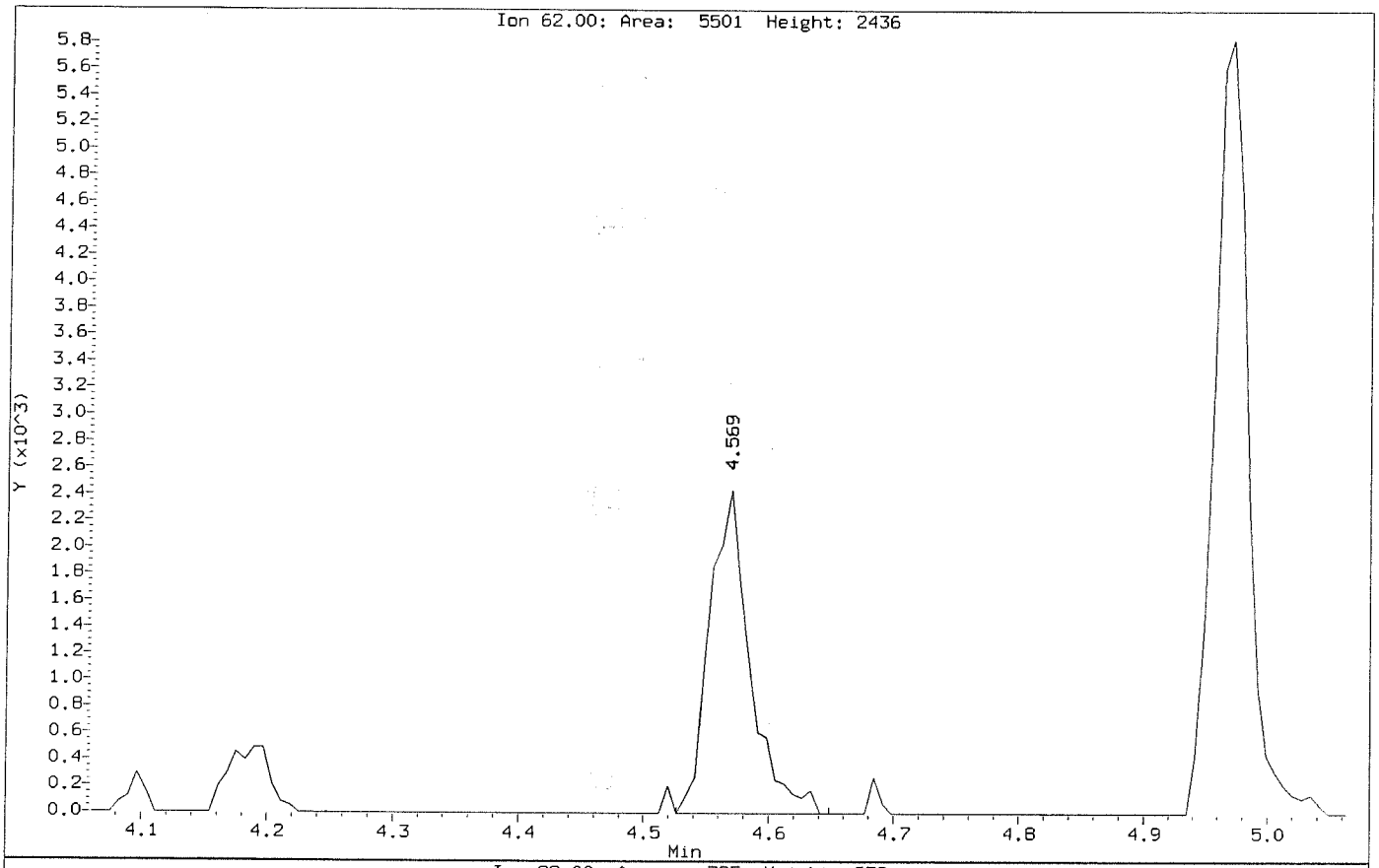
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

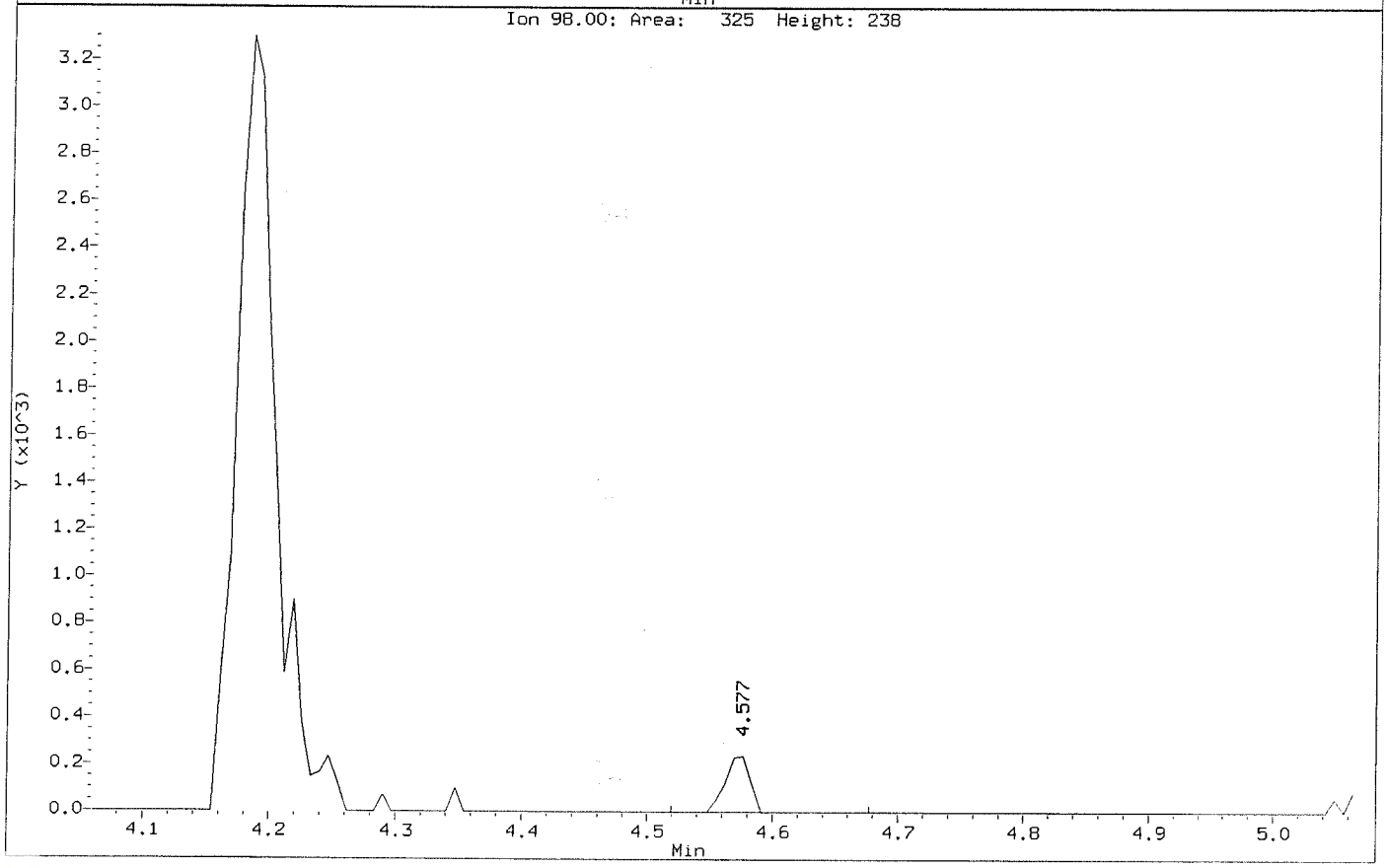




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

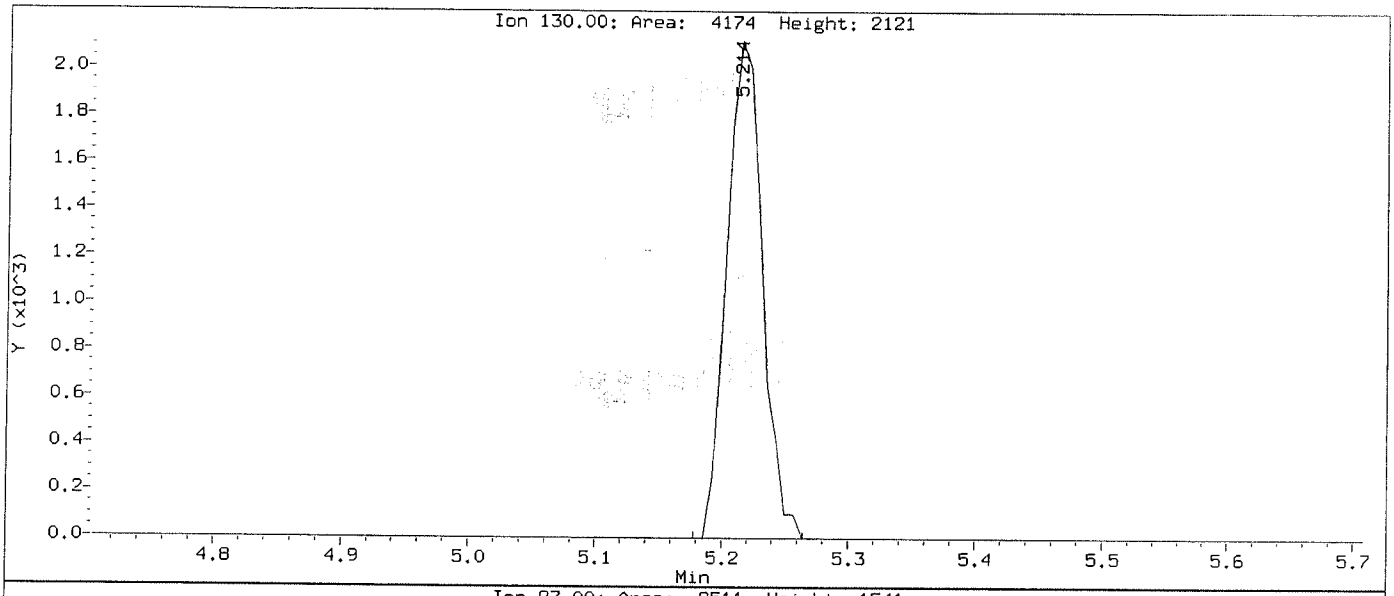
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

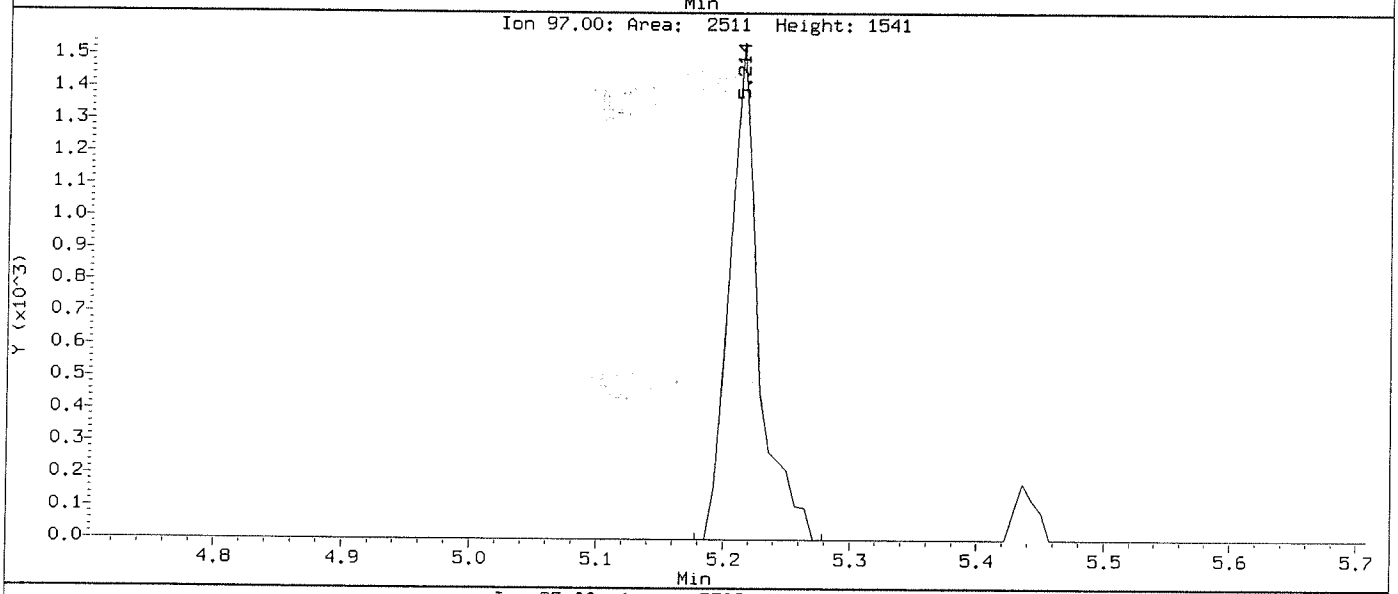


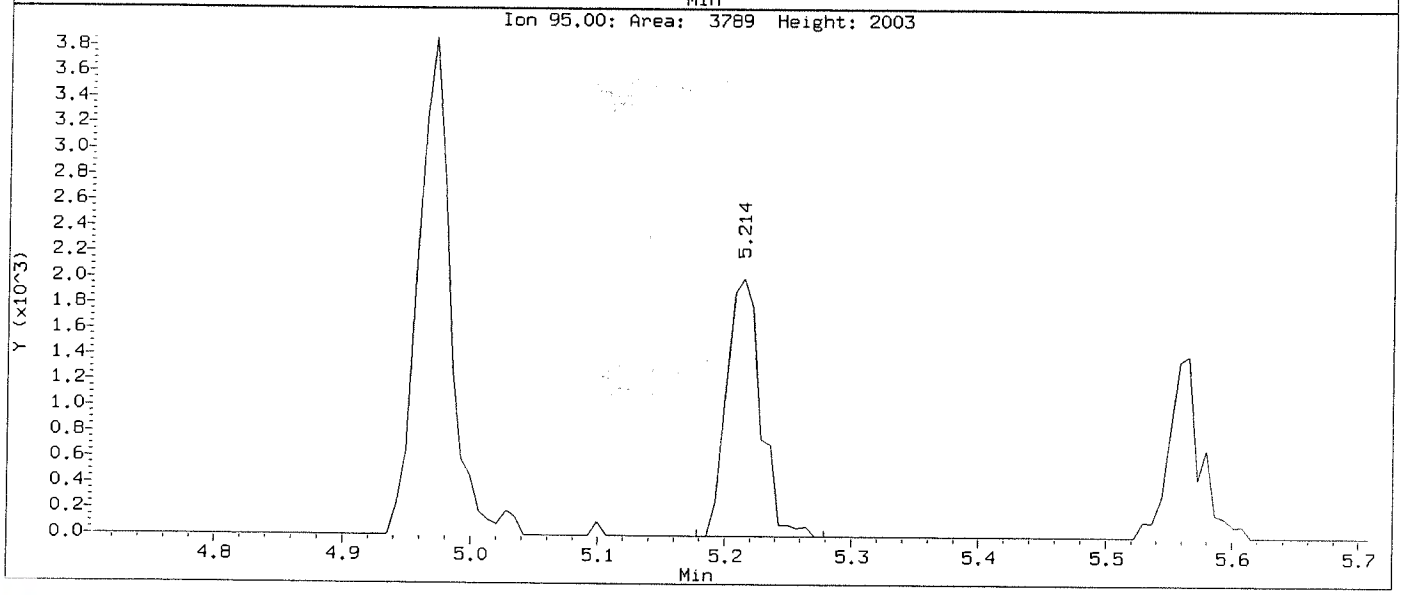


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: Trichloroethene
CAS Number: 79-01-6

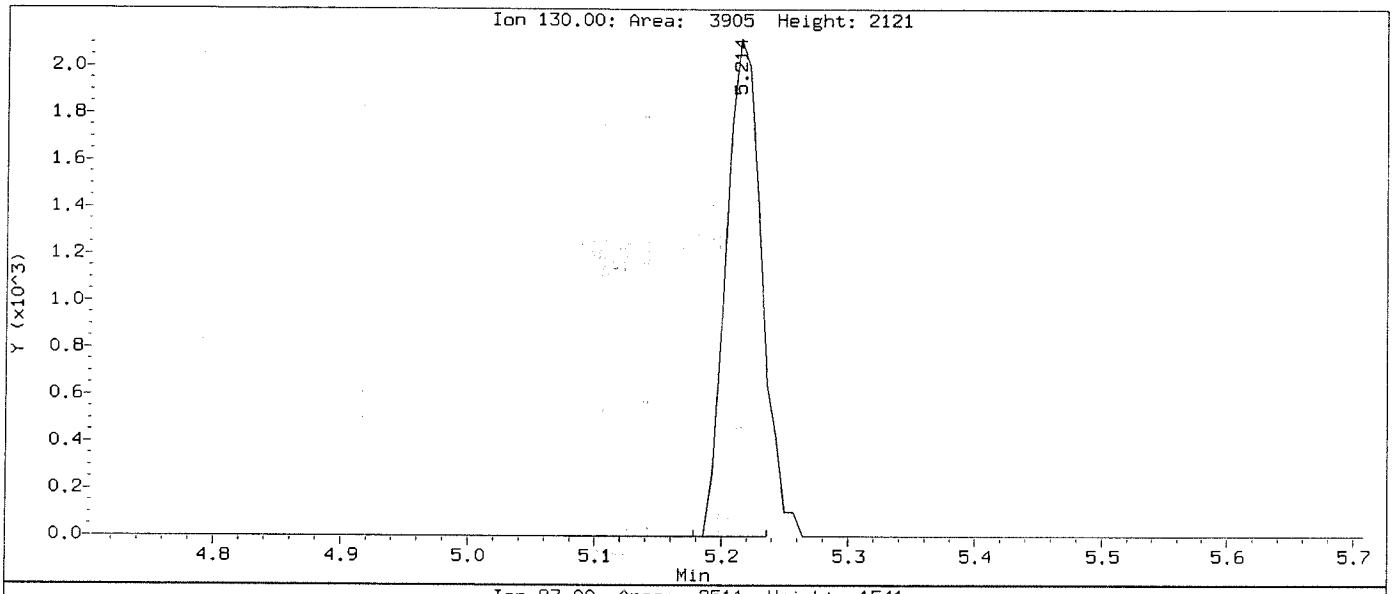


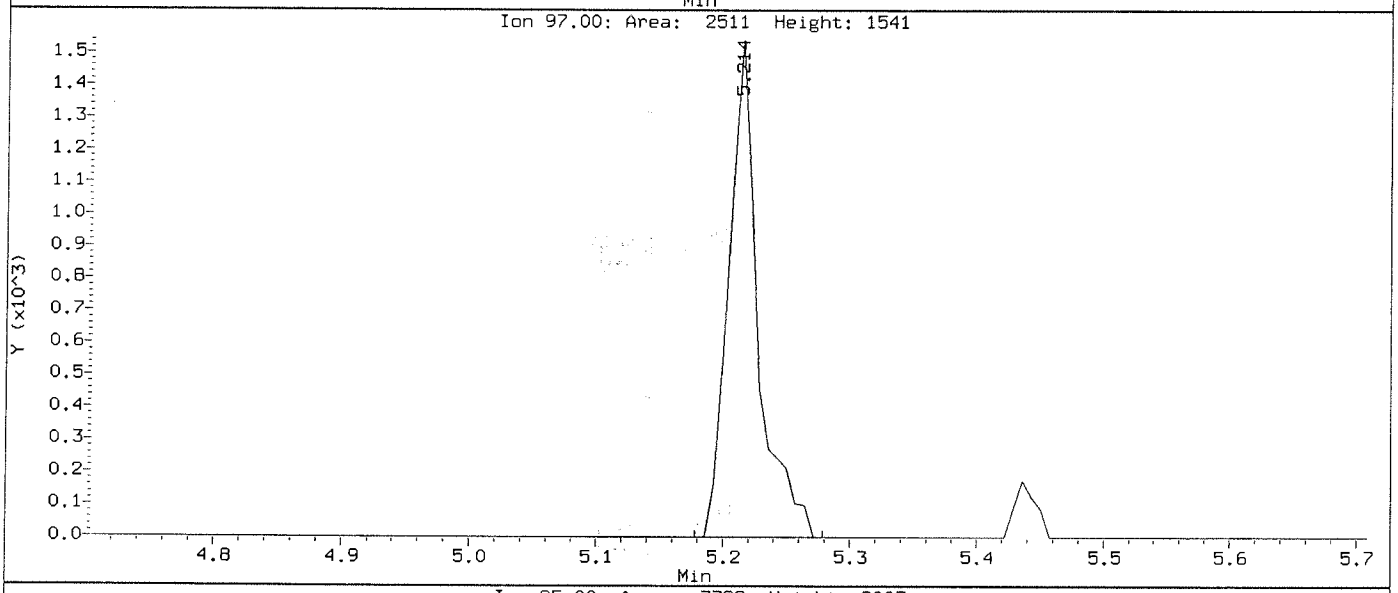


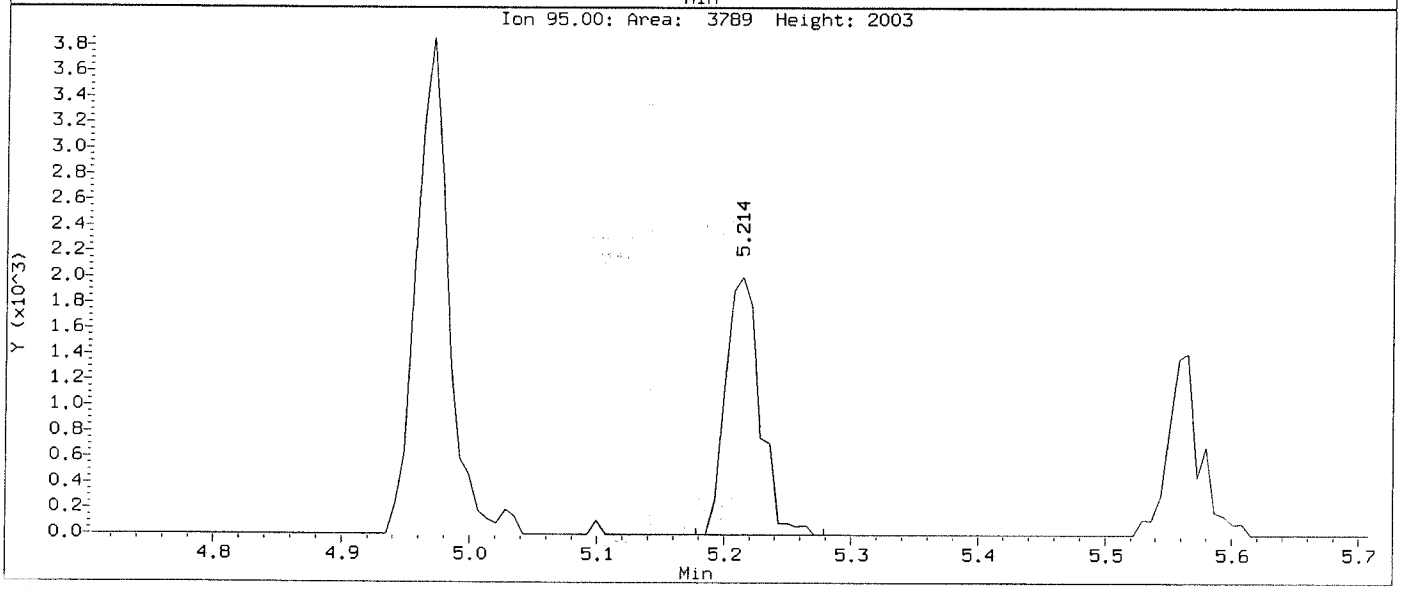


Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: Trichloroethene
CAS Number: 79-01-6

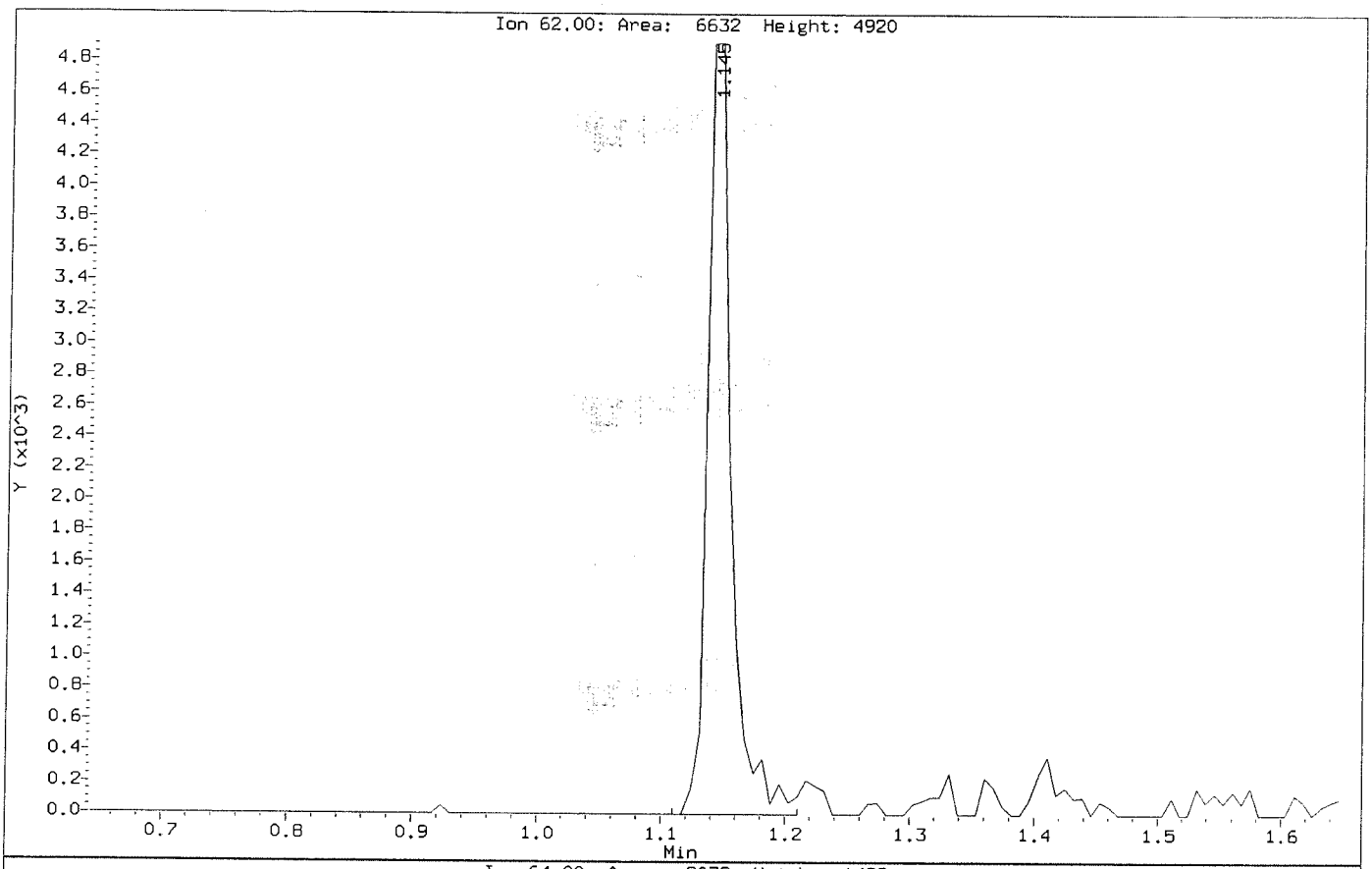


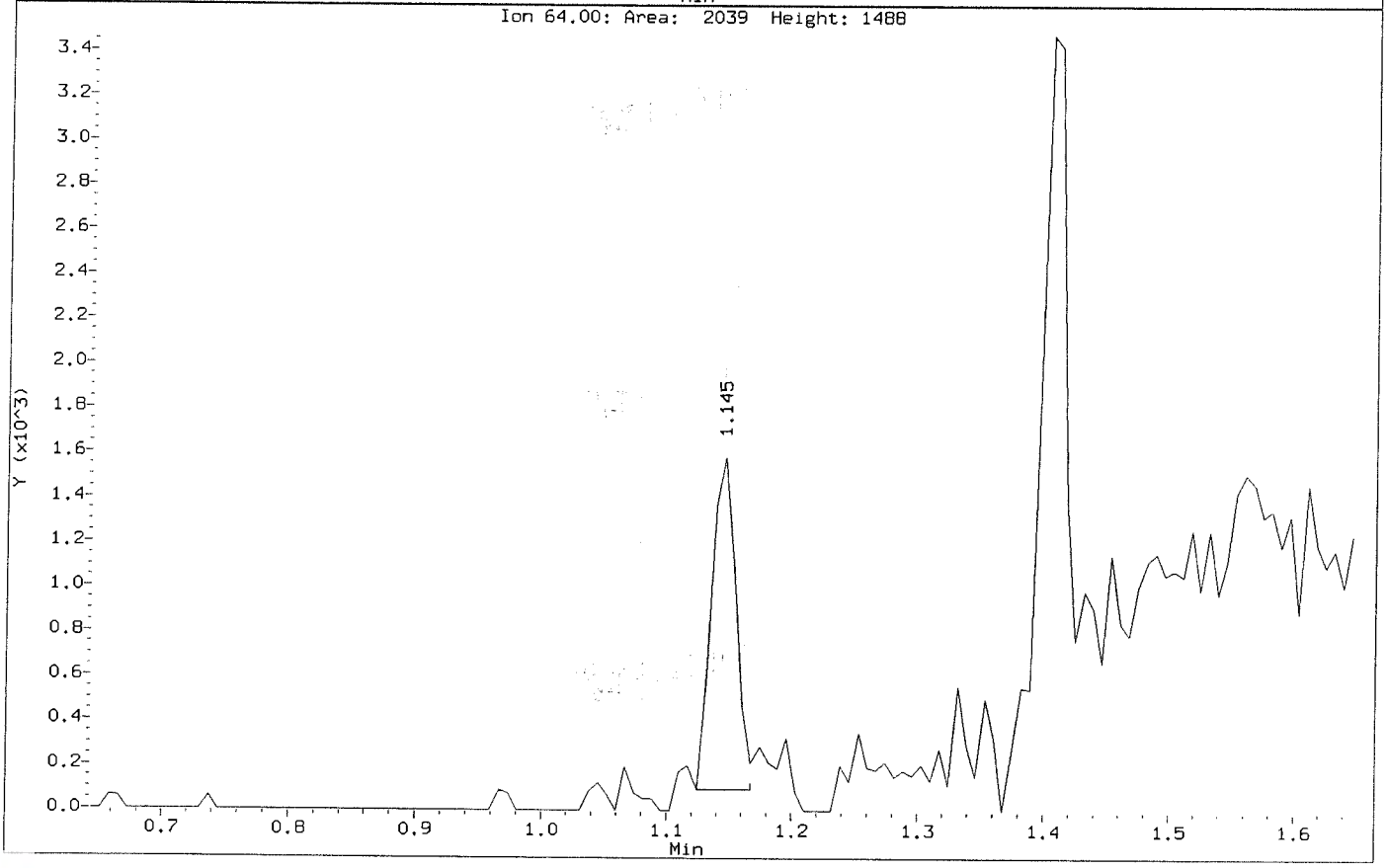




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

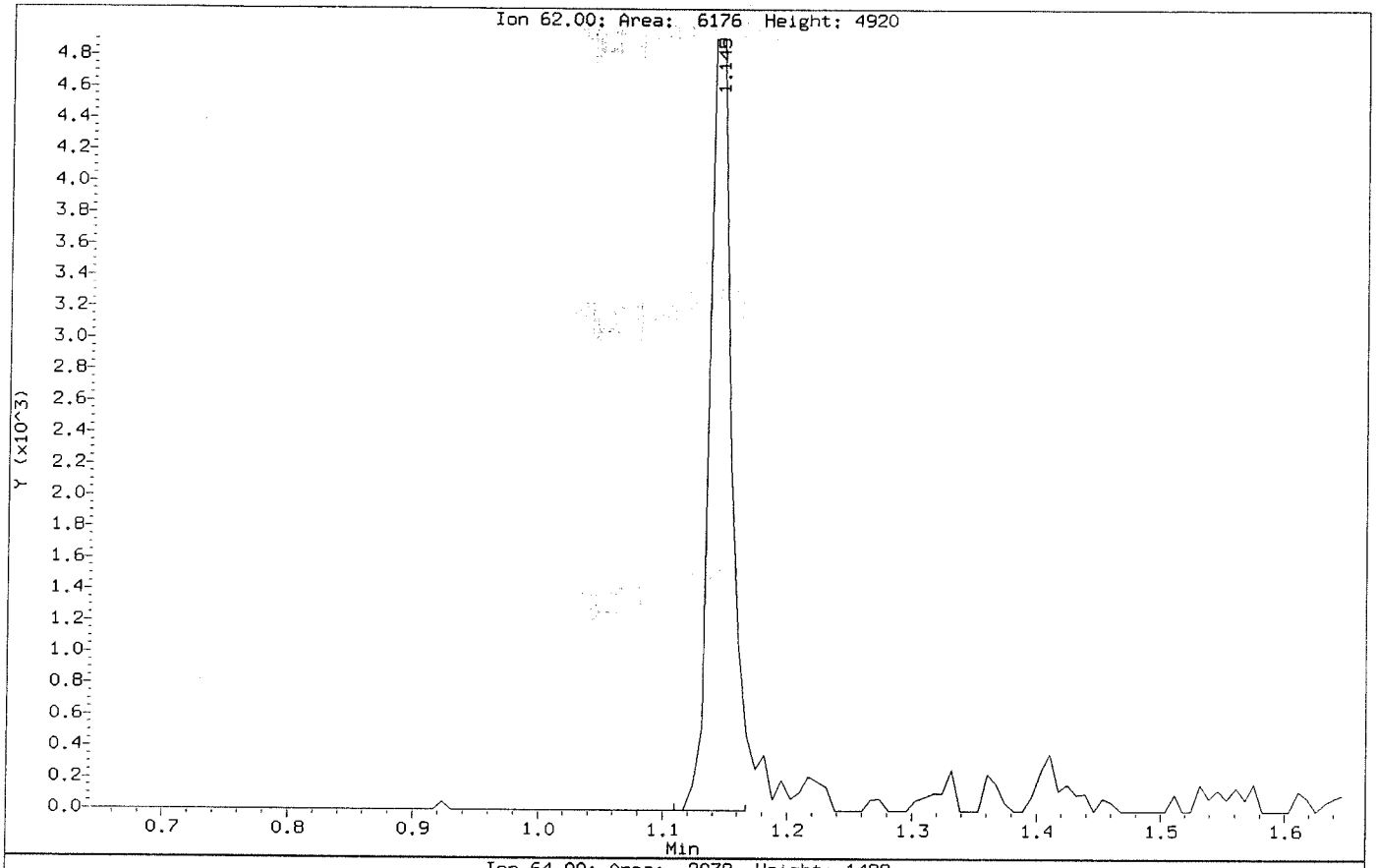
Compound: Vinyl Chloride
CAS Number: 75-01-4

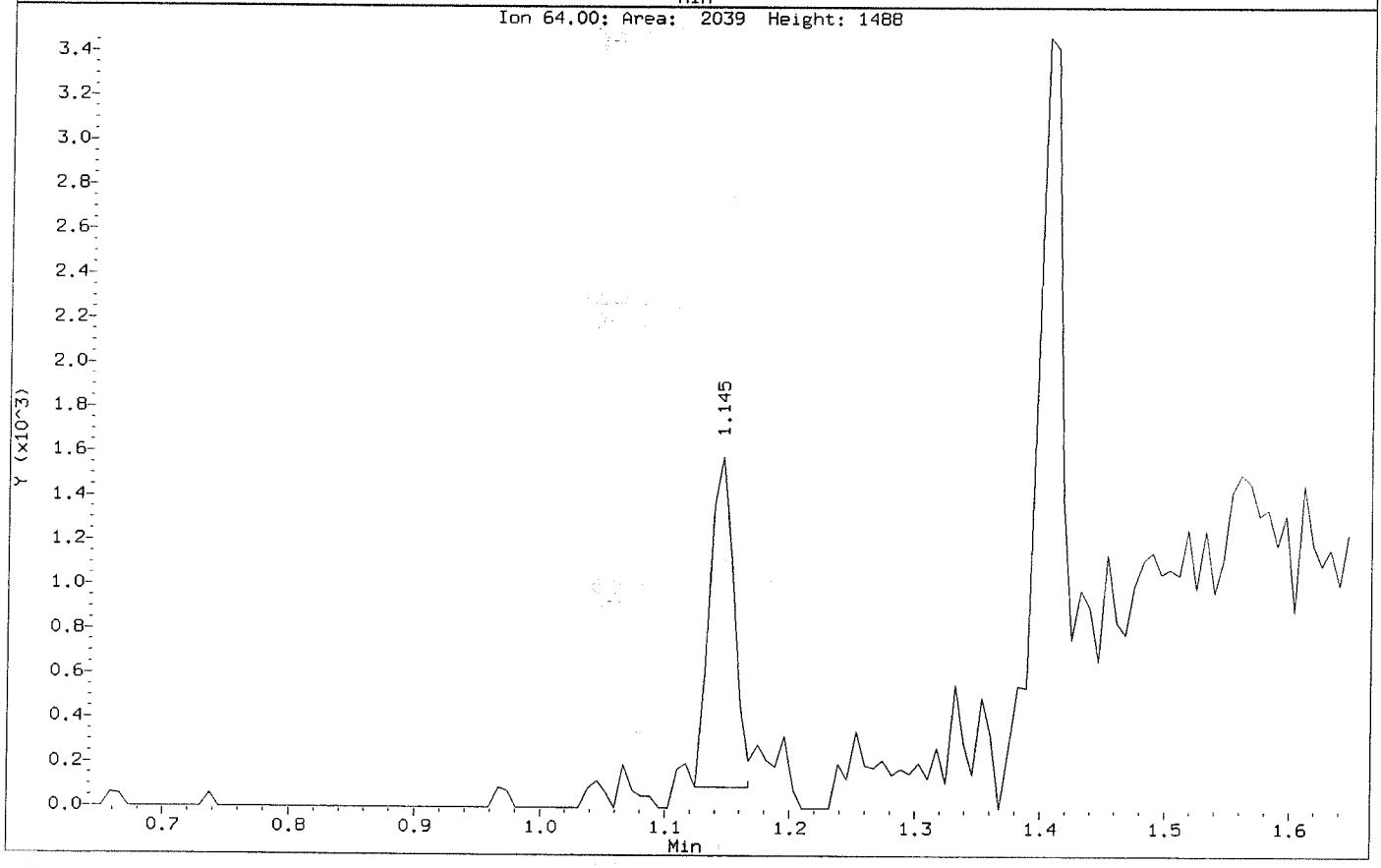




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110305.D
Injection Date: 03-NOV-2020 13:24
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110306.D Page 1
Report Date: 30-Nov-2020 15:10

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110306.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 03-NOV-2020 13:45
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 13:24 Cal File: X110305.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

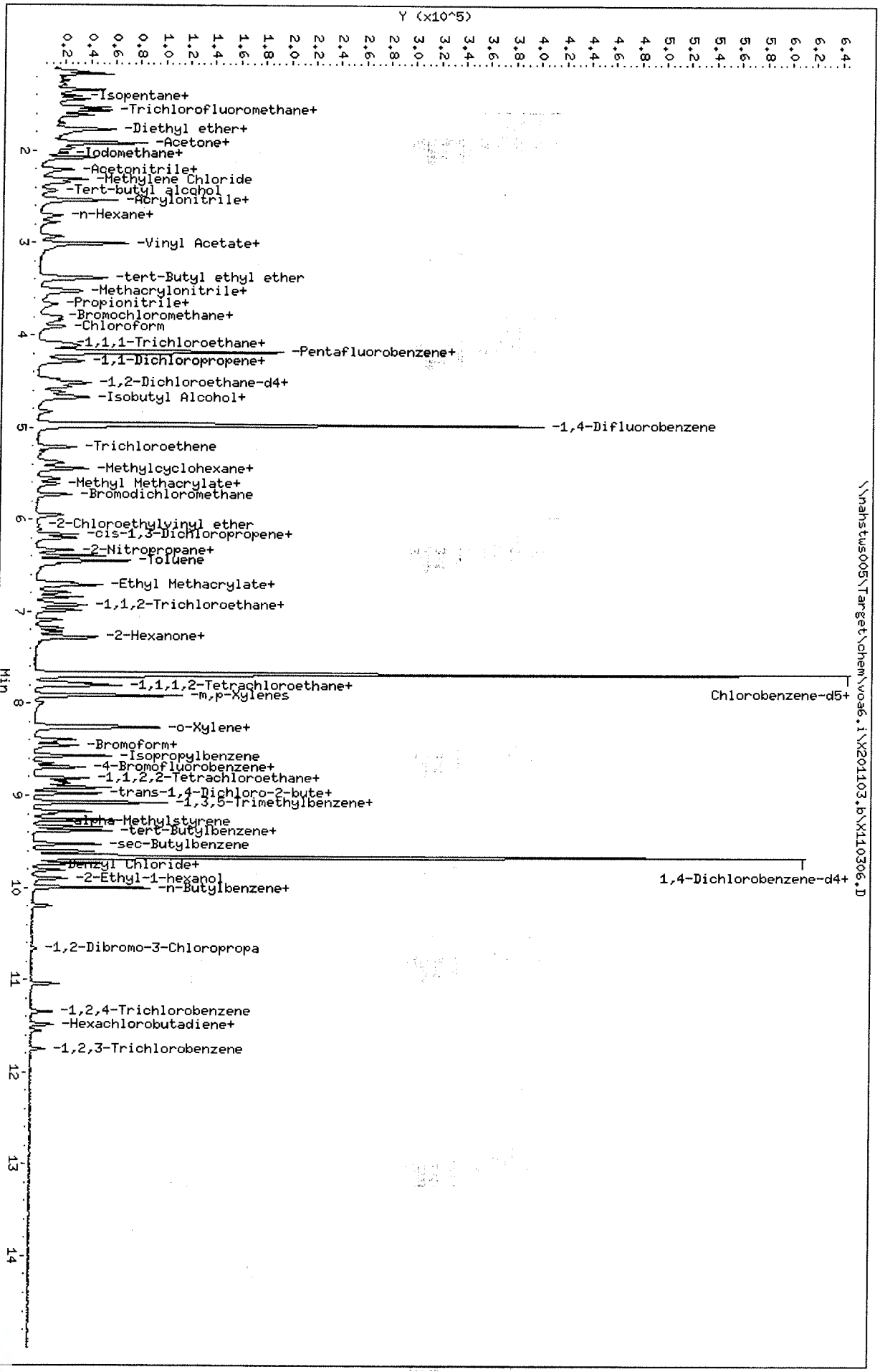
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	138955	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	261095	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	246486	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	109468	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	11874	5.00000	5.19
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	11013	5.00000	5.45
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	8863	5.00000	4.73(a)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	29006	5.00000	4.40(a)
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	7145	5.00000	4.69(a)
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	13327	5.00000	5.08
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	14332	5.00000	5.09(M)
27 cis-1,2-Dichloroethene	96	3.538	3.538	(0.846)	10335	5.00000	5.07
17 Methylene Chloride	84	2.306	2.306	(0.551)	9949	5.00000	5.21
38 Trichloroethene	130	5.207	5.207	(1.048)	8320	5.00000	4.78(a)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	15367	5.00000	5.00(MH)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

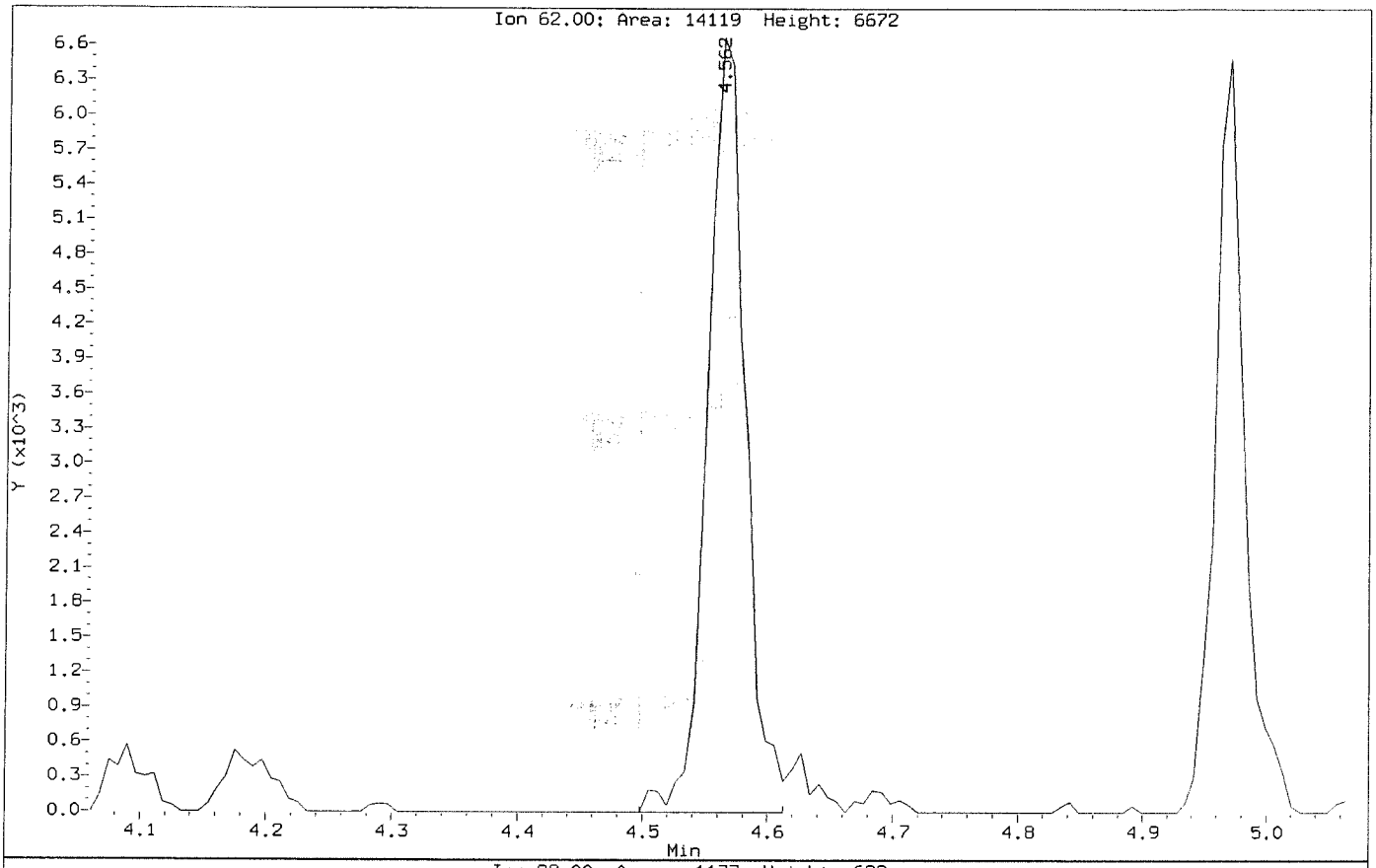


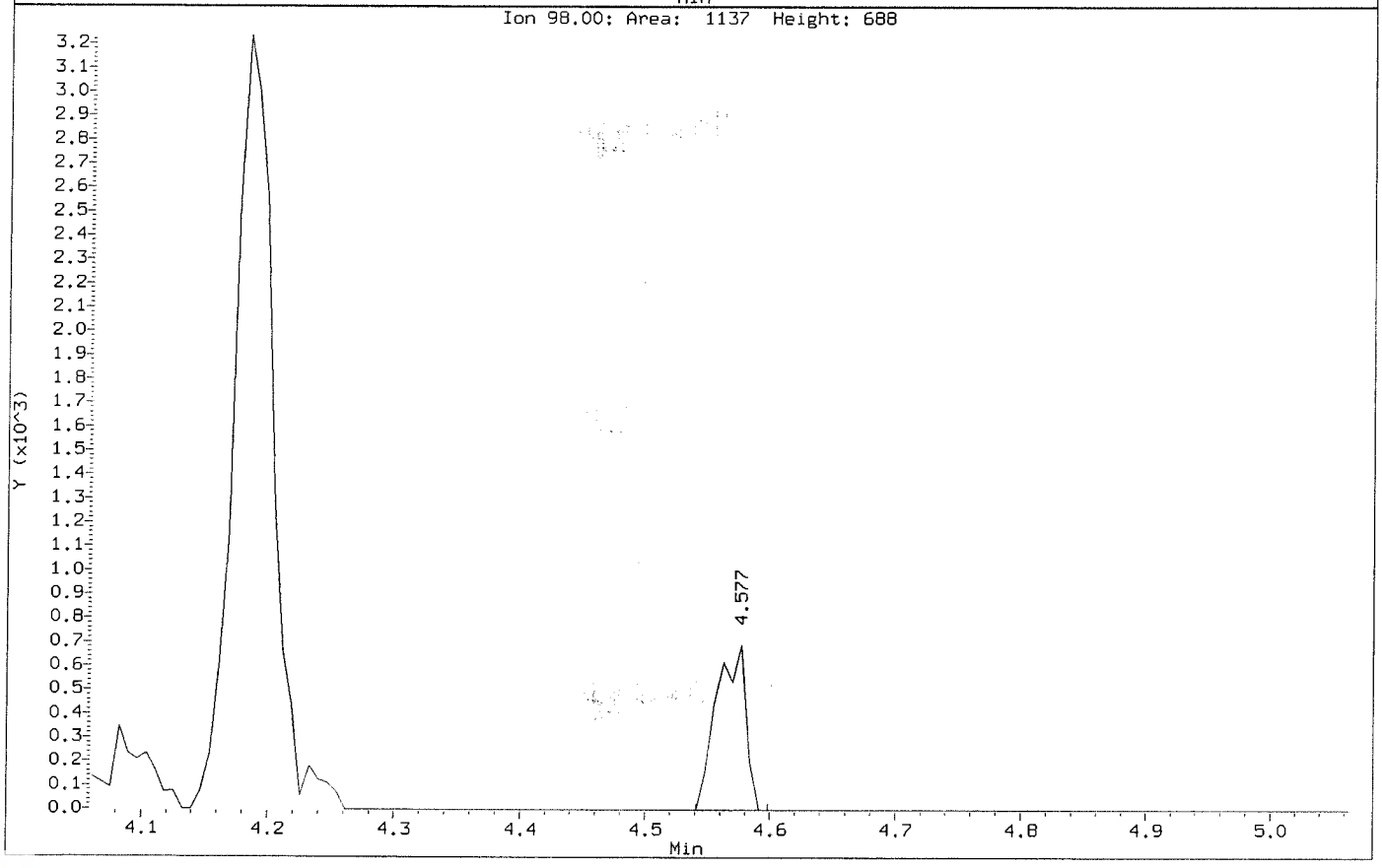
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110306.D
Date : 03-NOV-2020 13:45
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110306.D
Injection Date: 03-NOV-2020 13:45
Instrument: voa6.i
Client Sample ID: VSTD005

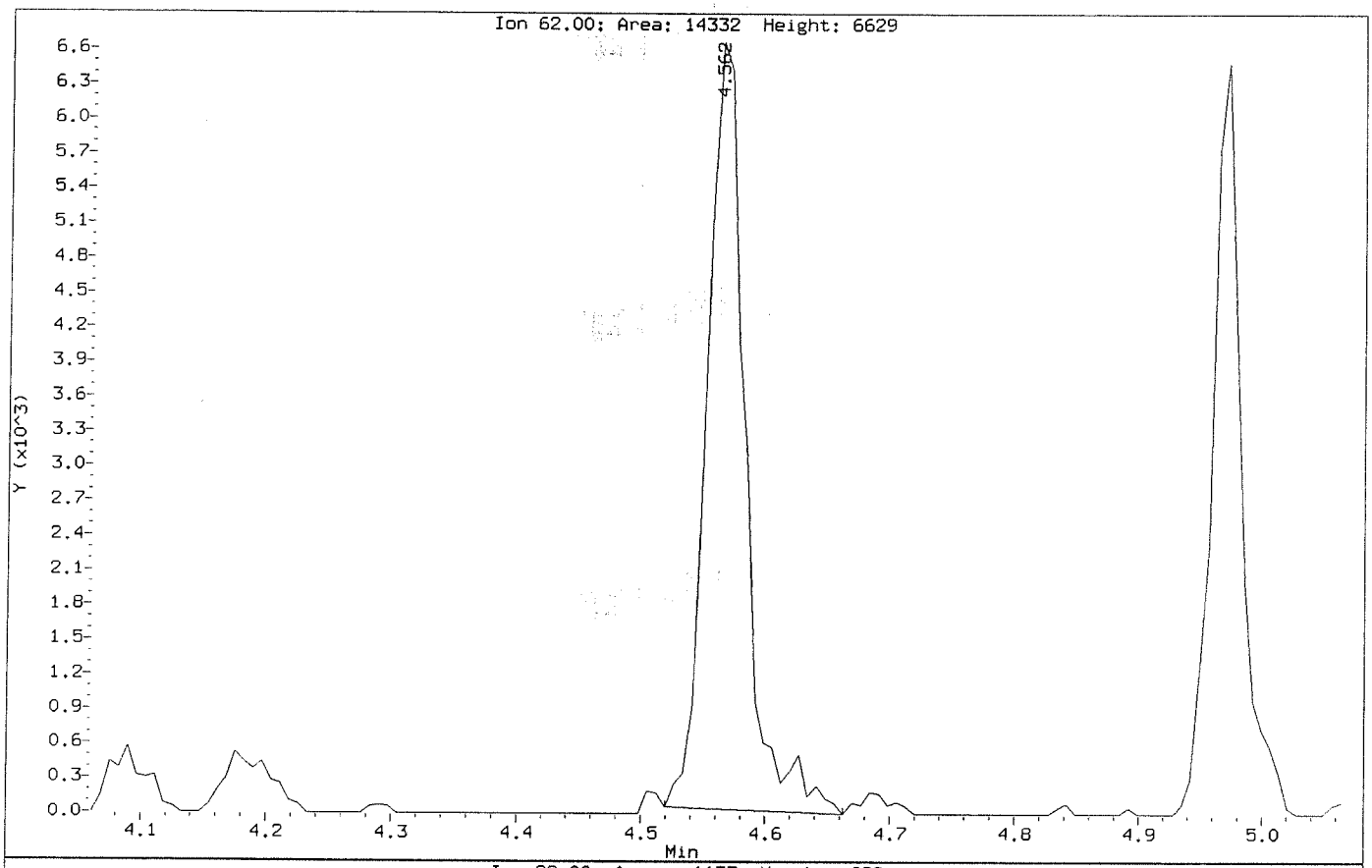
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

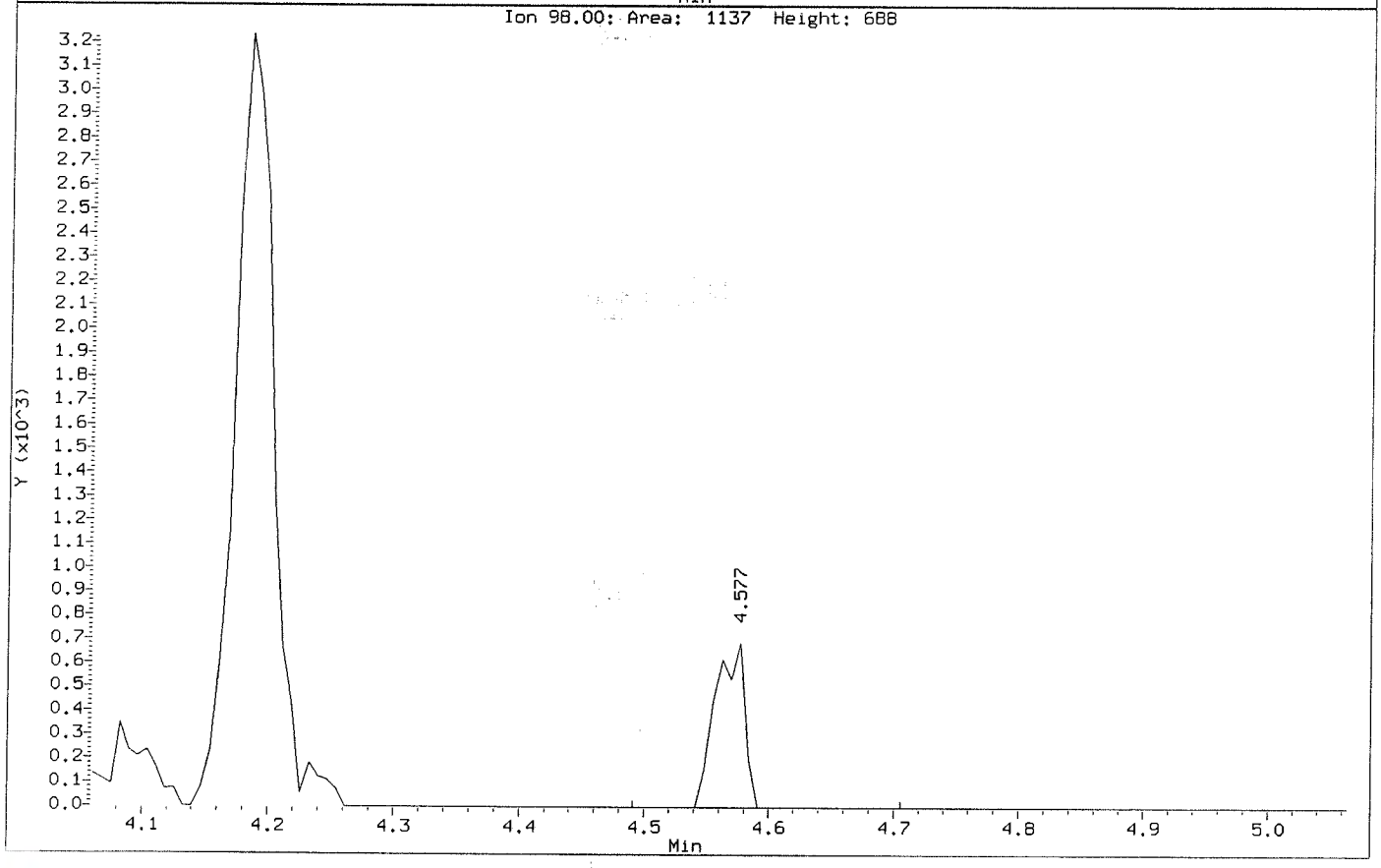




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110306.D
Injection Date: 03-NOV-2020 13:45
Instrument: voa6.i
Client Sample ID: VSTD005

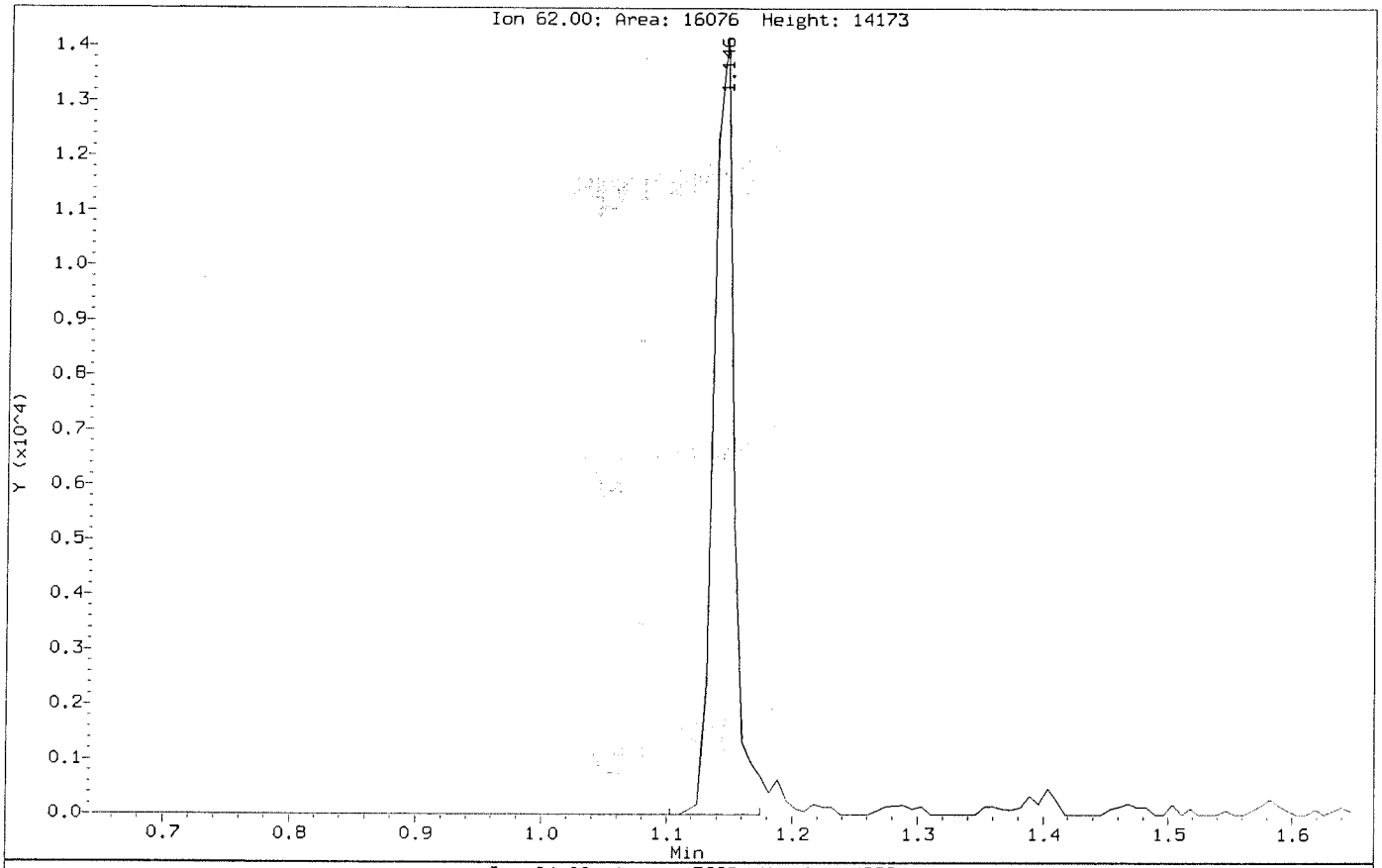
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

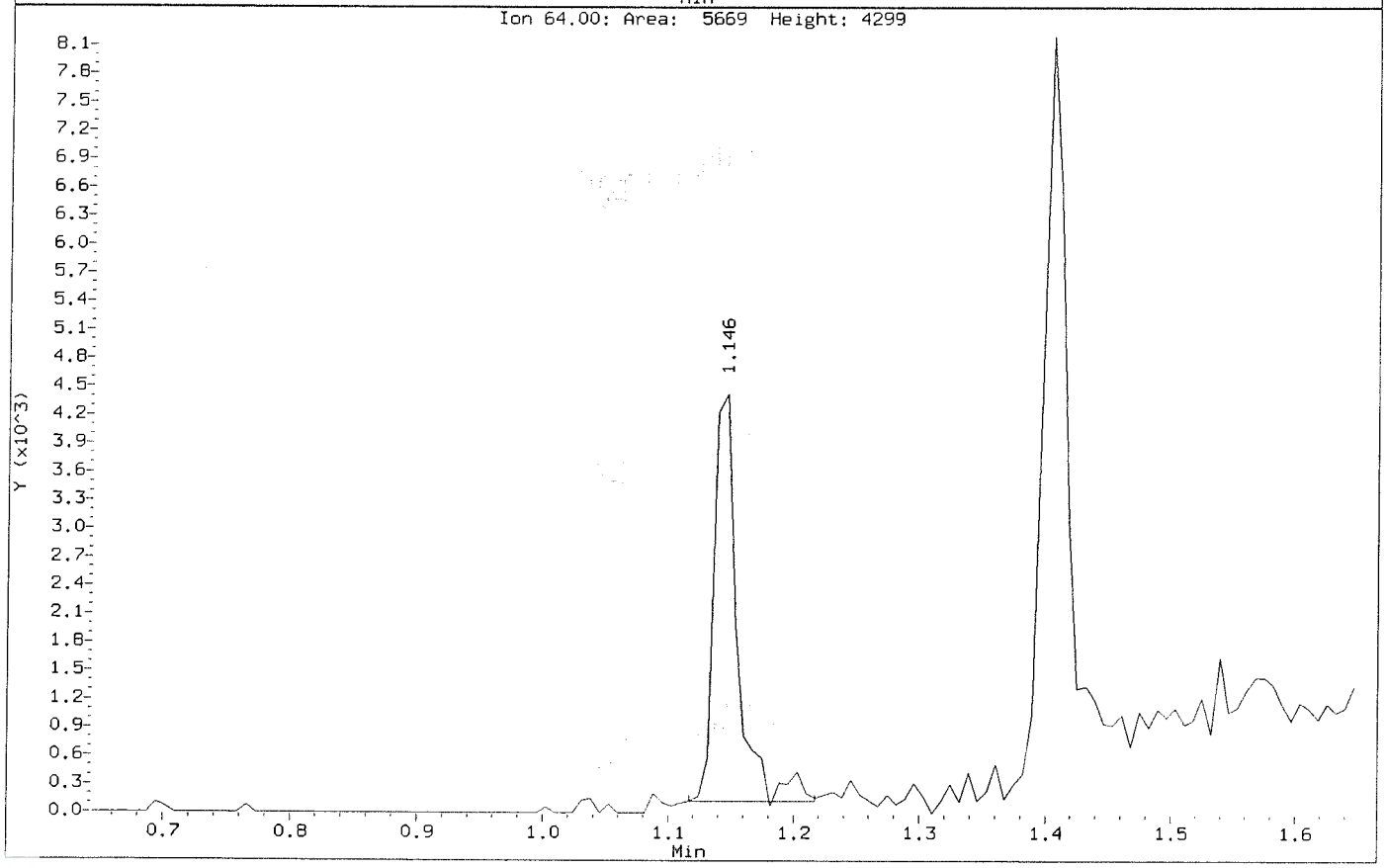




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110306.D
Injection Date: 03-NOV-2020 13:45
Instrument: voa6.i
Client Sample ID: VSTD005

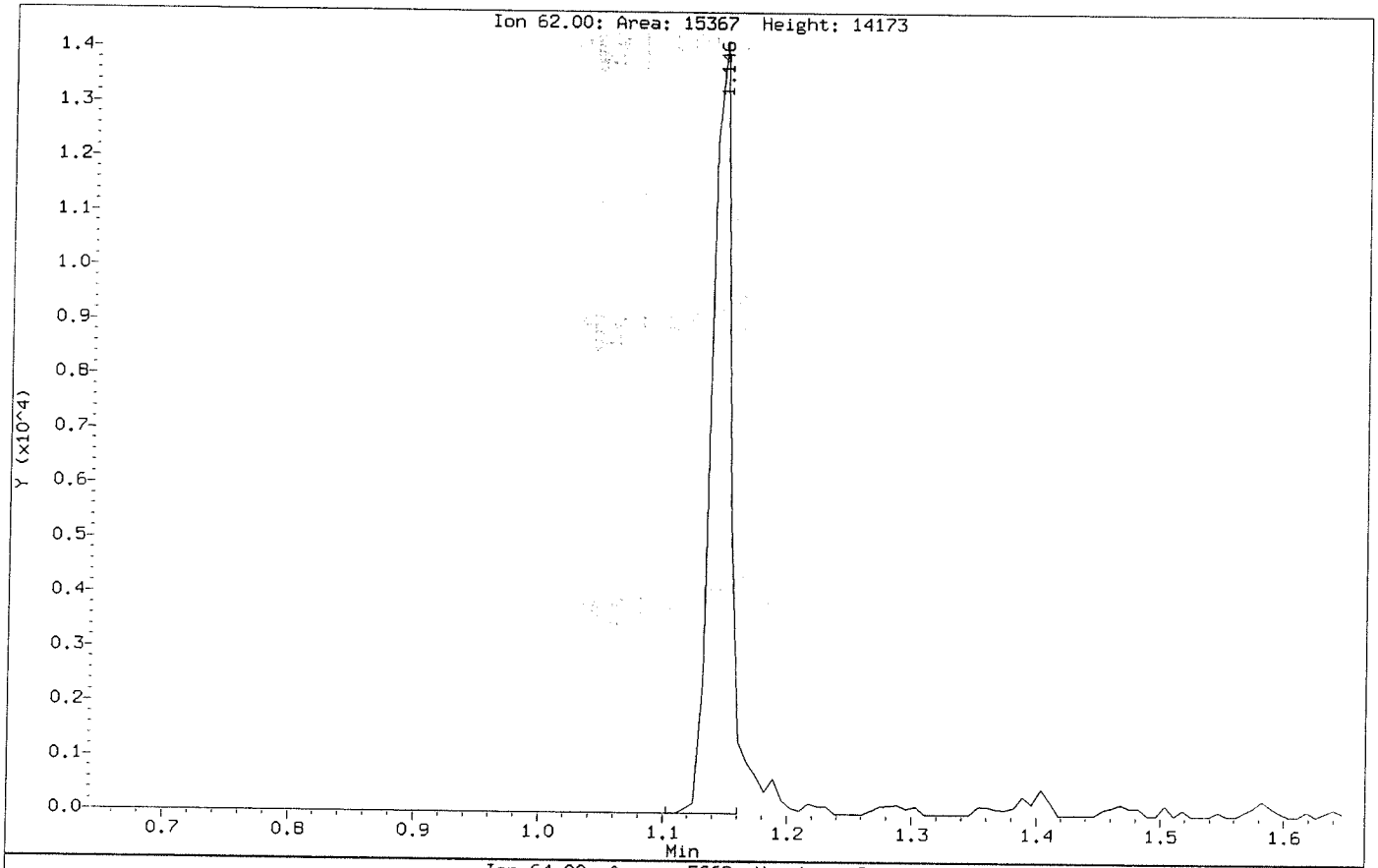
Compound: Vinyl Chloride
CAS Number: 75-01-4

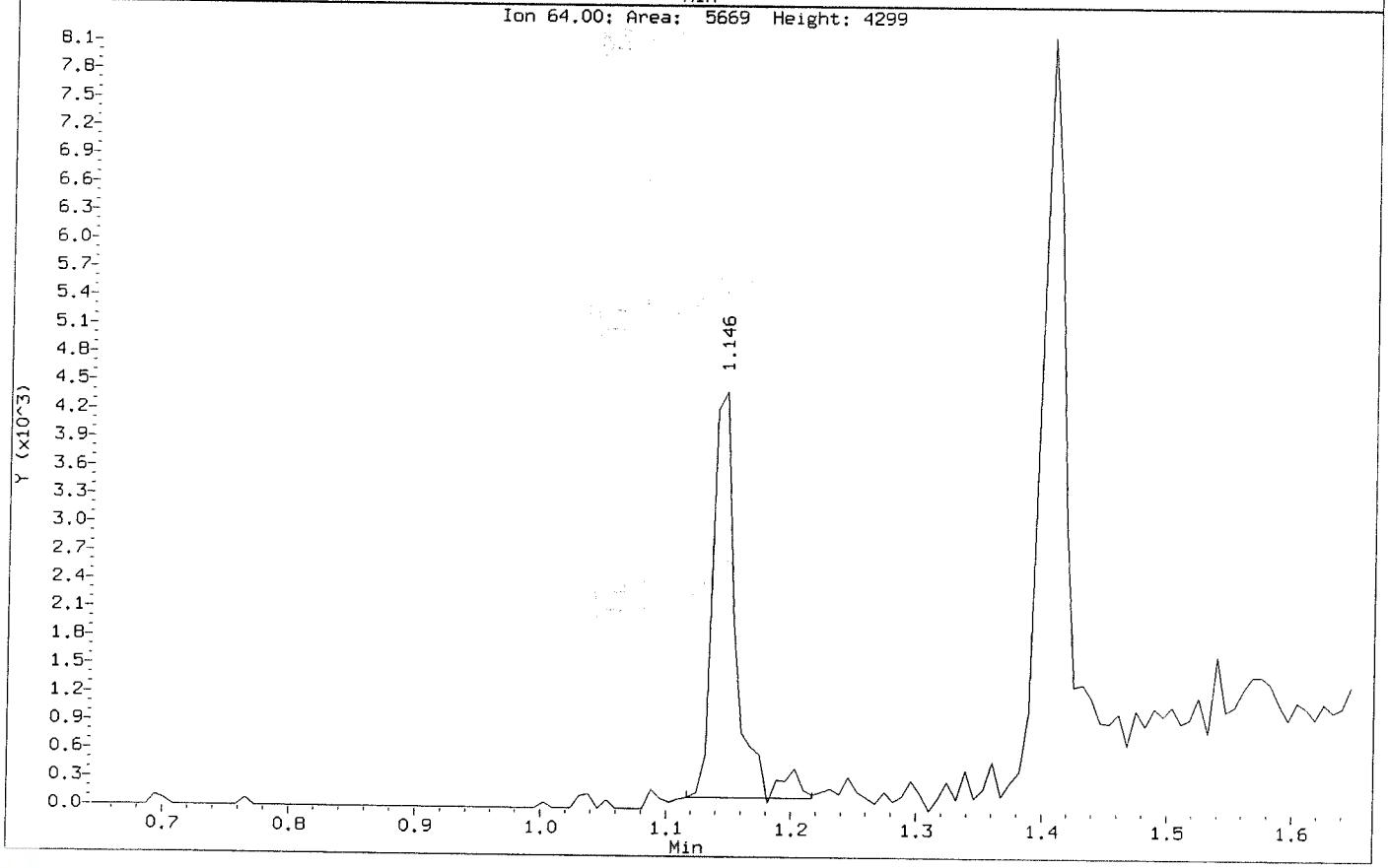




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110306.D
Injection Date: 03-NOV-2020 13:45
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: Vinyl Chloride
CAS Number: 75-01-4





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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110307.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 03-NOV-2020 14:06
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 13:45 Cal File: X110306.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

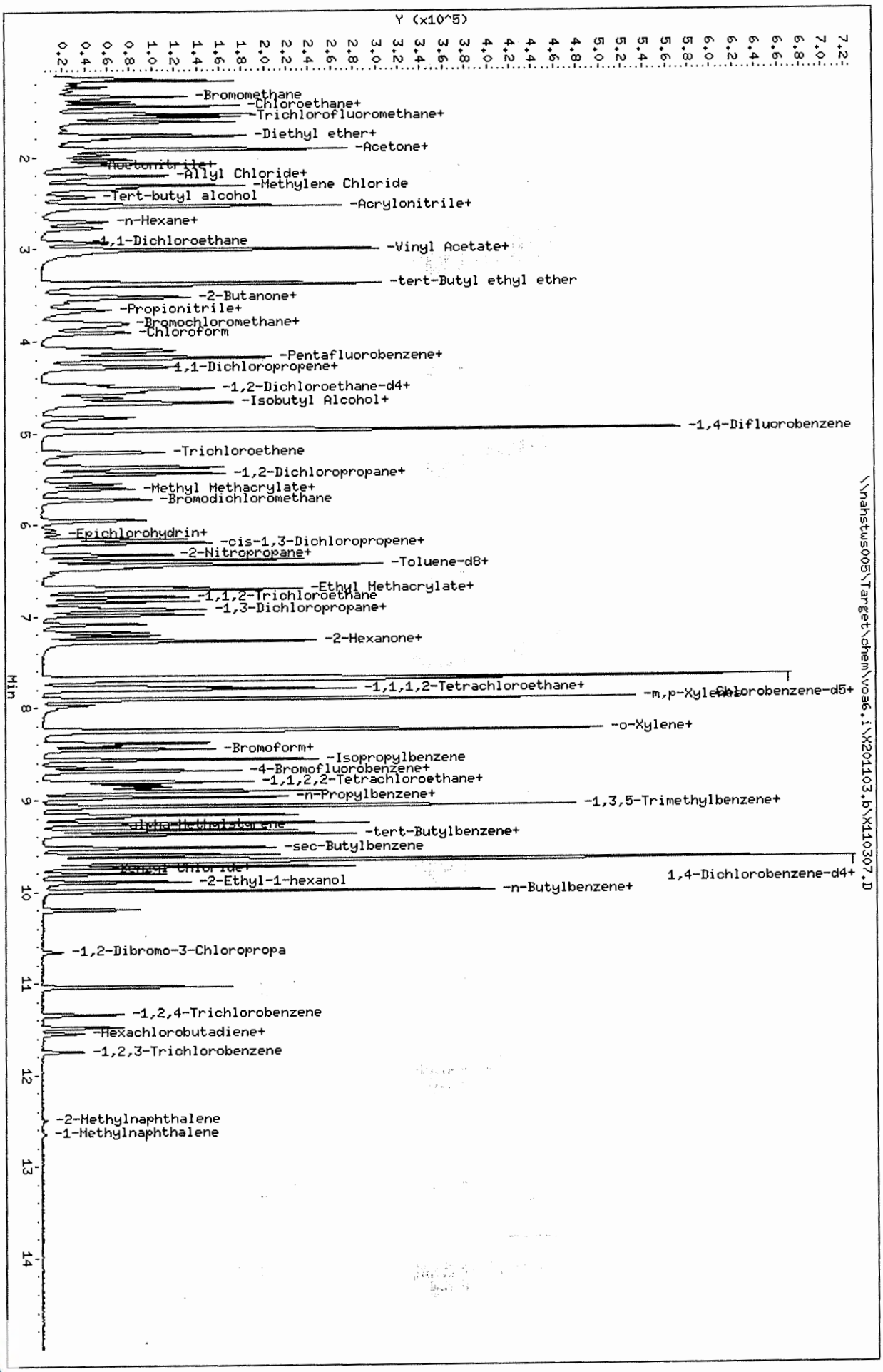
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	144595	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	268568	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	253730	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	113802	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	44472	20.0000	19.69
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	41523	20.0000	18.99
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	35558	20.0000	18.26
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	120740	20.0000	17.81
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	27961	20.0000	17.86
11 1,1-Dichloroethene	96	1.918	1.918	(0.459)	48541	20.0000	17.79
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	52637	20.0000	18.17(M)
27 cis-1,2-Dichloroethene	96	3.537	3.537	(0.846)	36891	20.0000	17.39
17 Methylene Chloride	84	2.305	2.305	(0.551)	34217	20.0000	17.23
38 Trichloroethene	130	5.213	5.213	(1.049)	31185	20.0000	17.42
5 Vinyl Chloride	62	1.145	1.145	(0.274)	57375	20.0000	17.95(H)

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

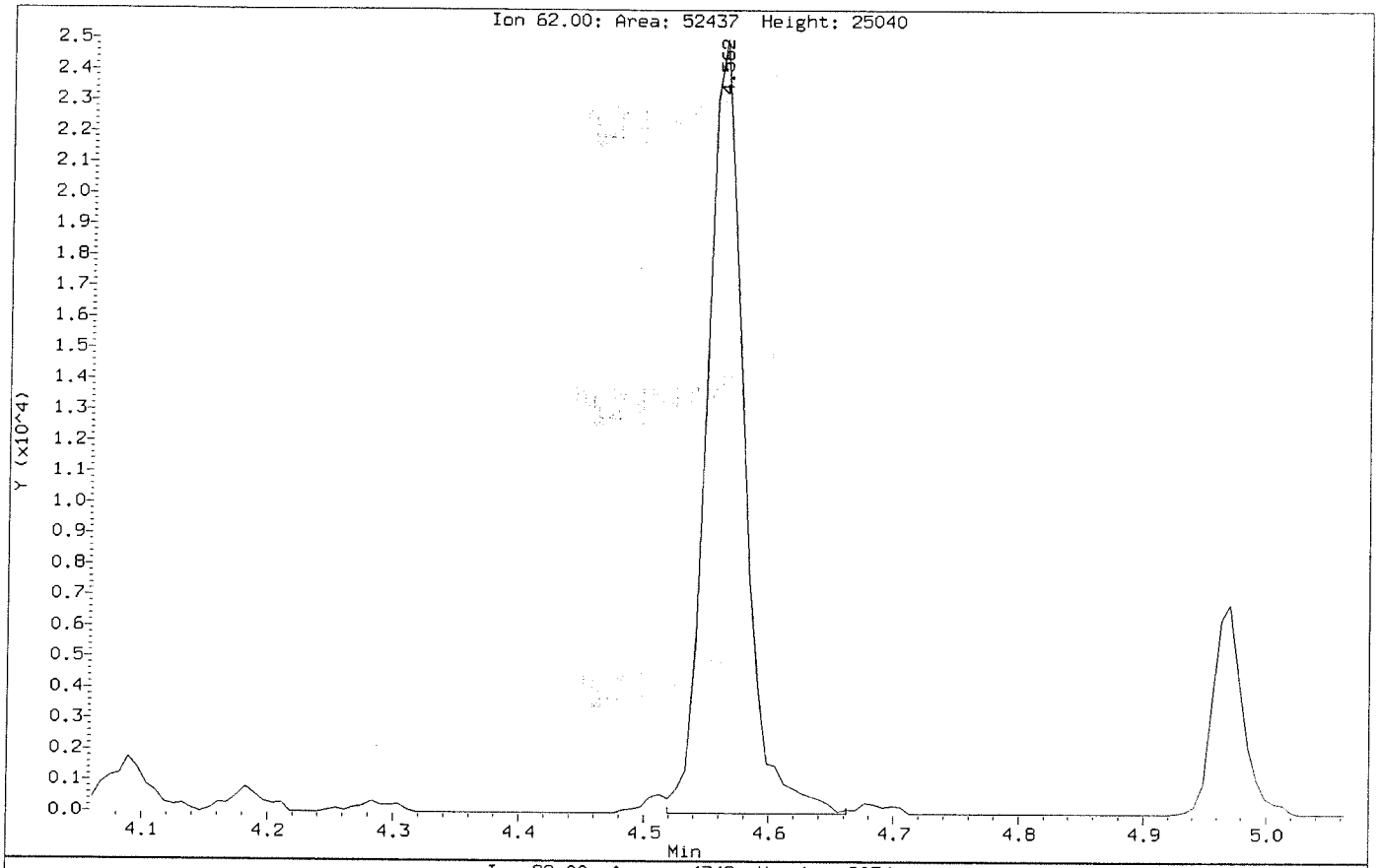


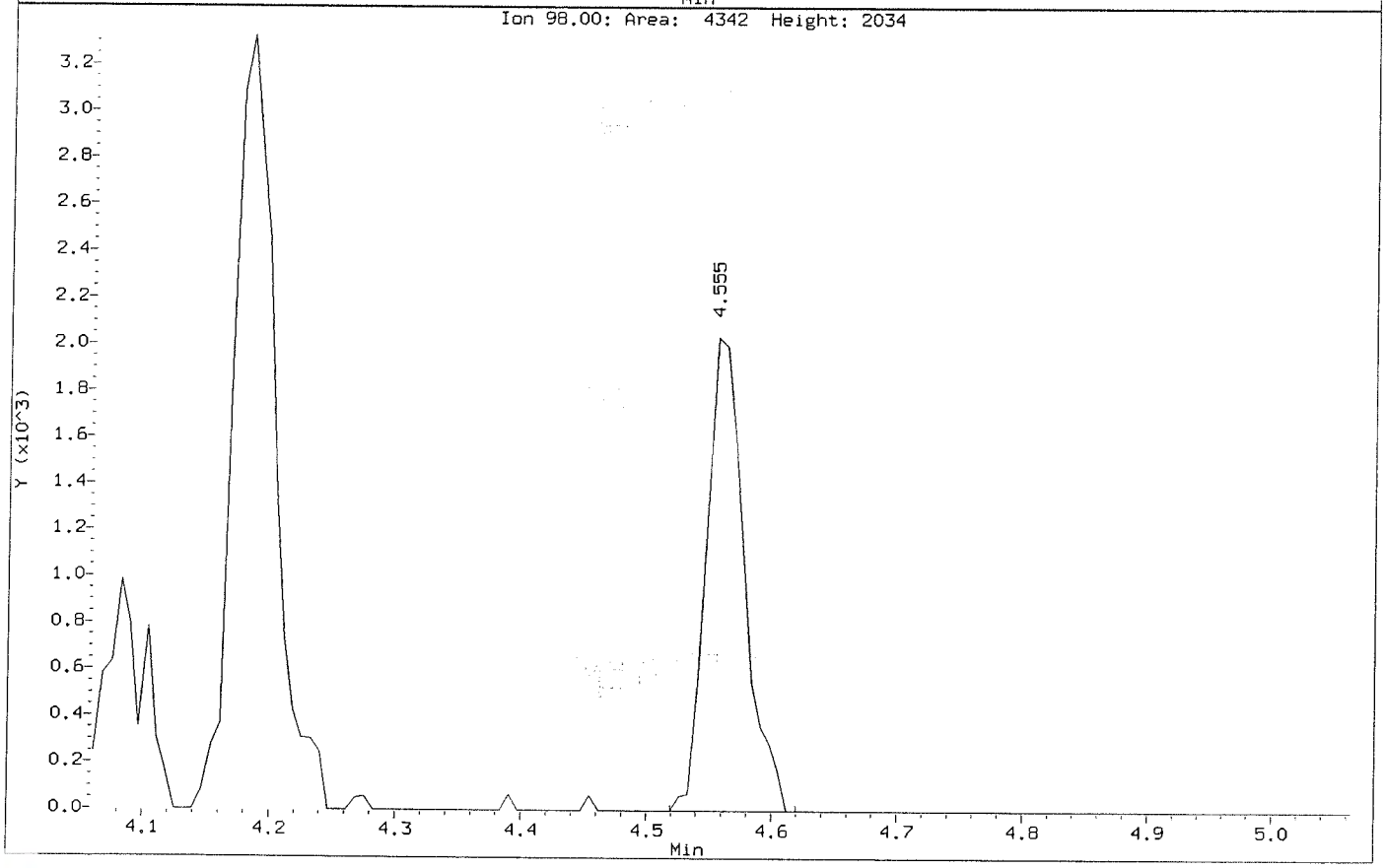
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110307.D
Date : 03-NOV-2020 14:06
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110307.D
Injection Date: 03-NOV-2020 14:06
Instrument: voa6.i
Client Sample ID: VSTD020

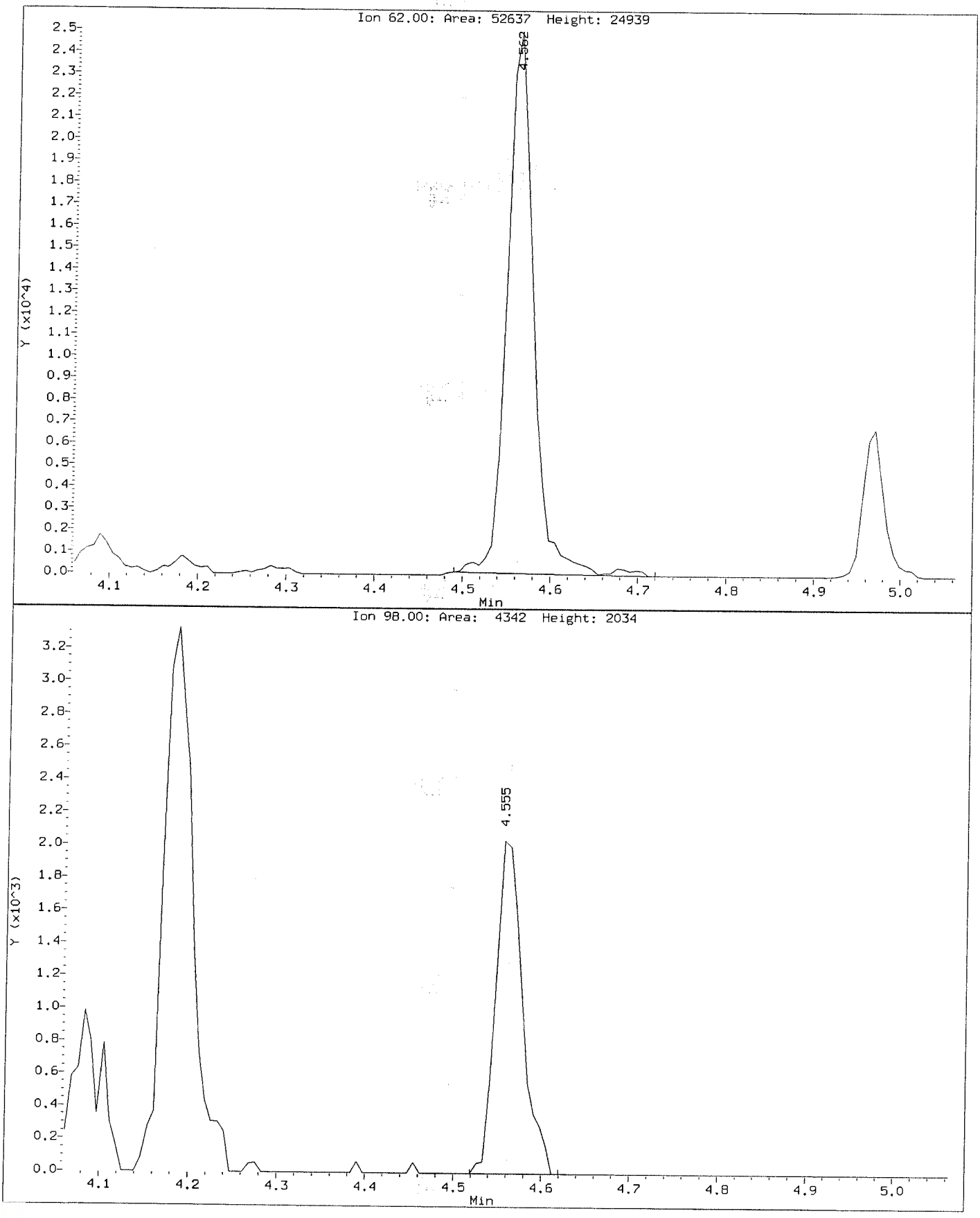
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2





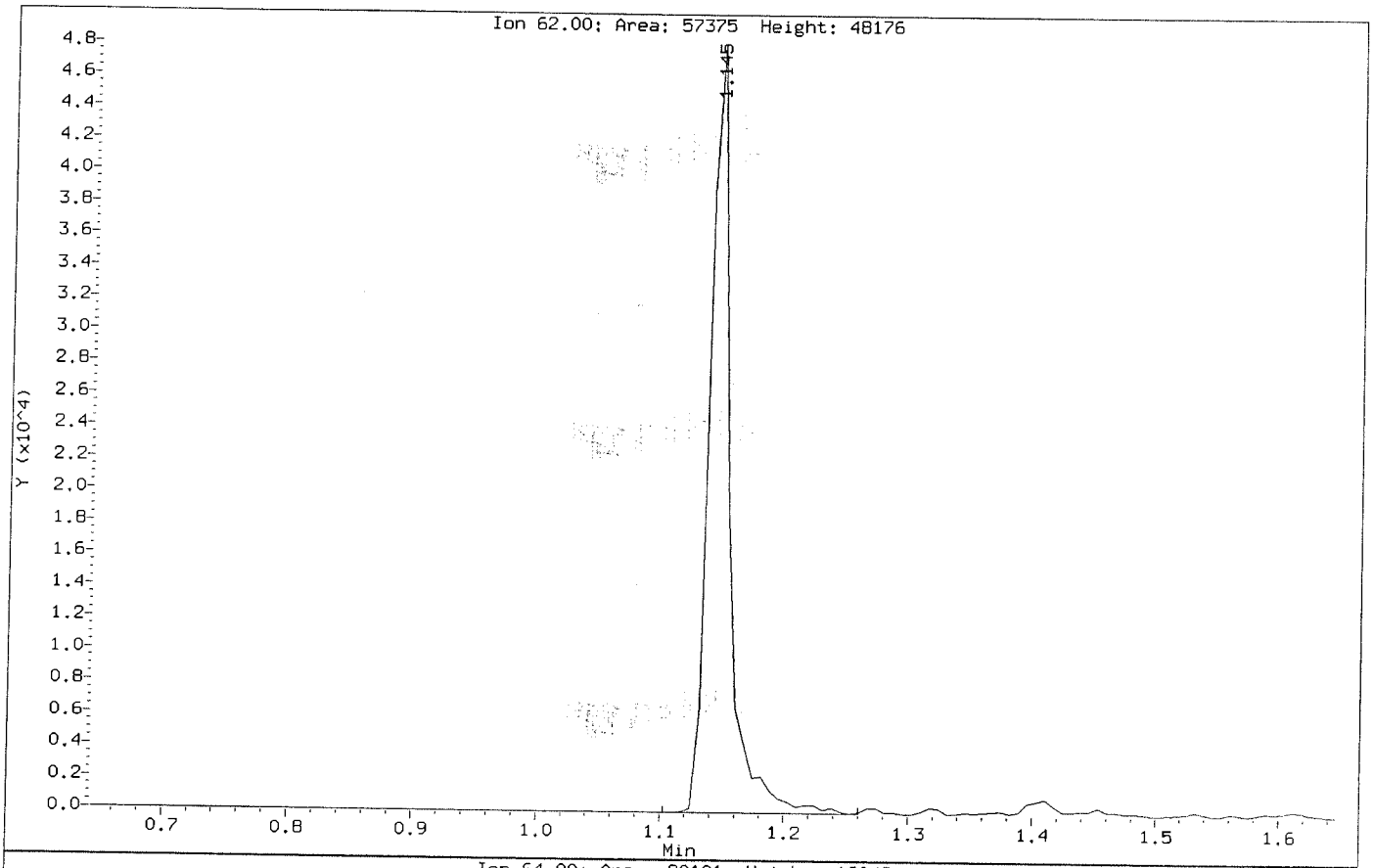
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110307.D
Injection Date: 03-NOV-2020 14:06
Instrument: voa6.i
Client Sample ID: VSTD020

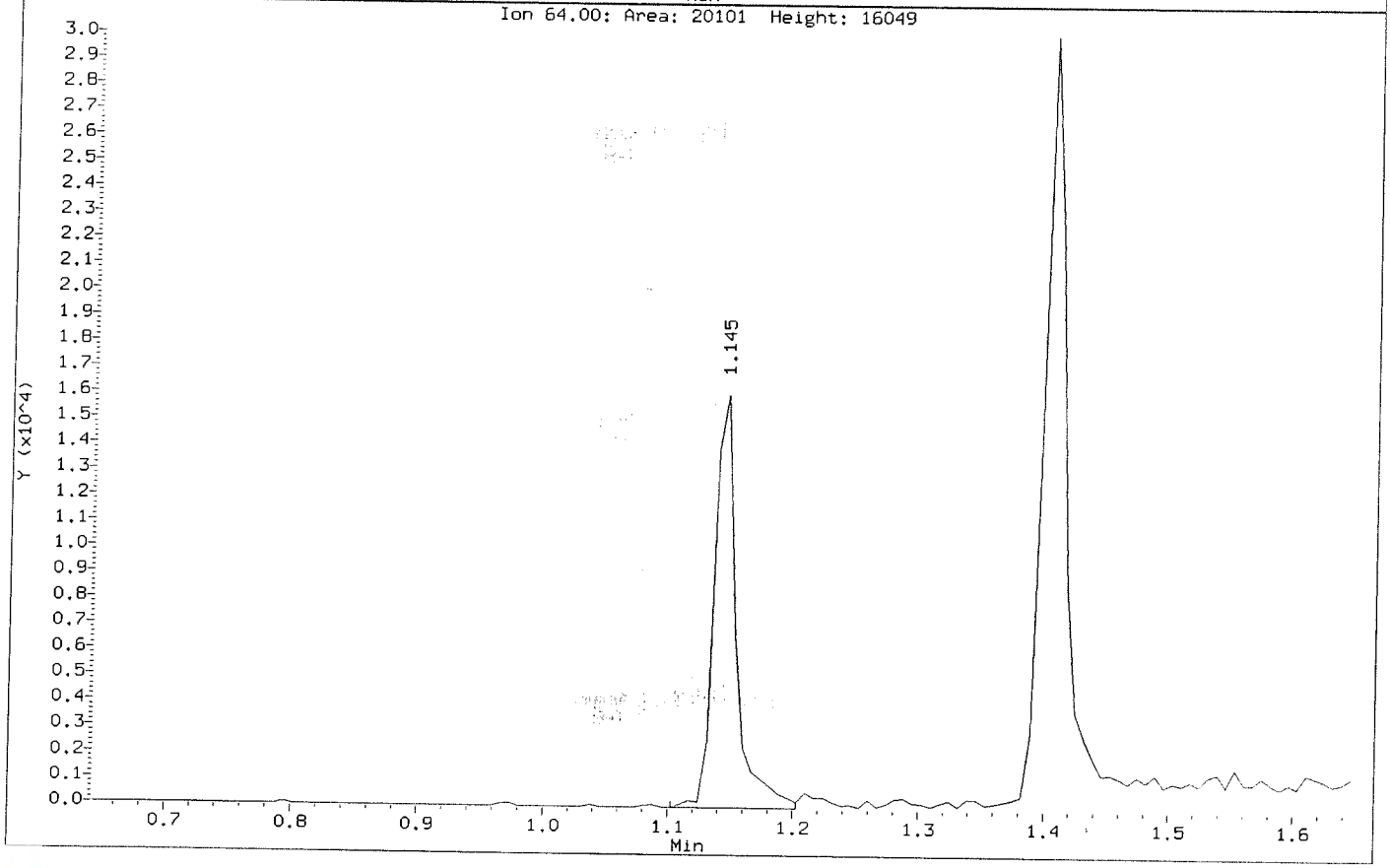
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110307.D
Injection Date: 03-NOV-2020 14:06
Instrument: voa6.i
Client Sample ID: VSTD020

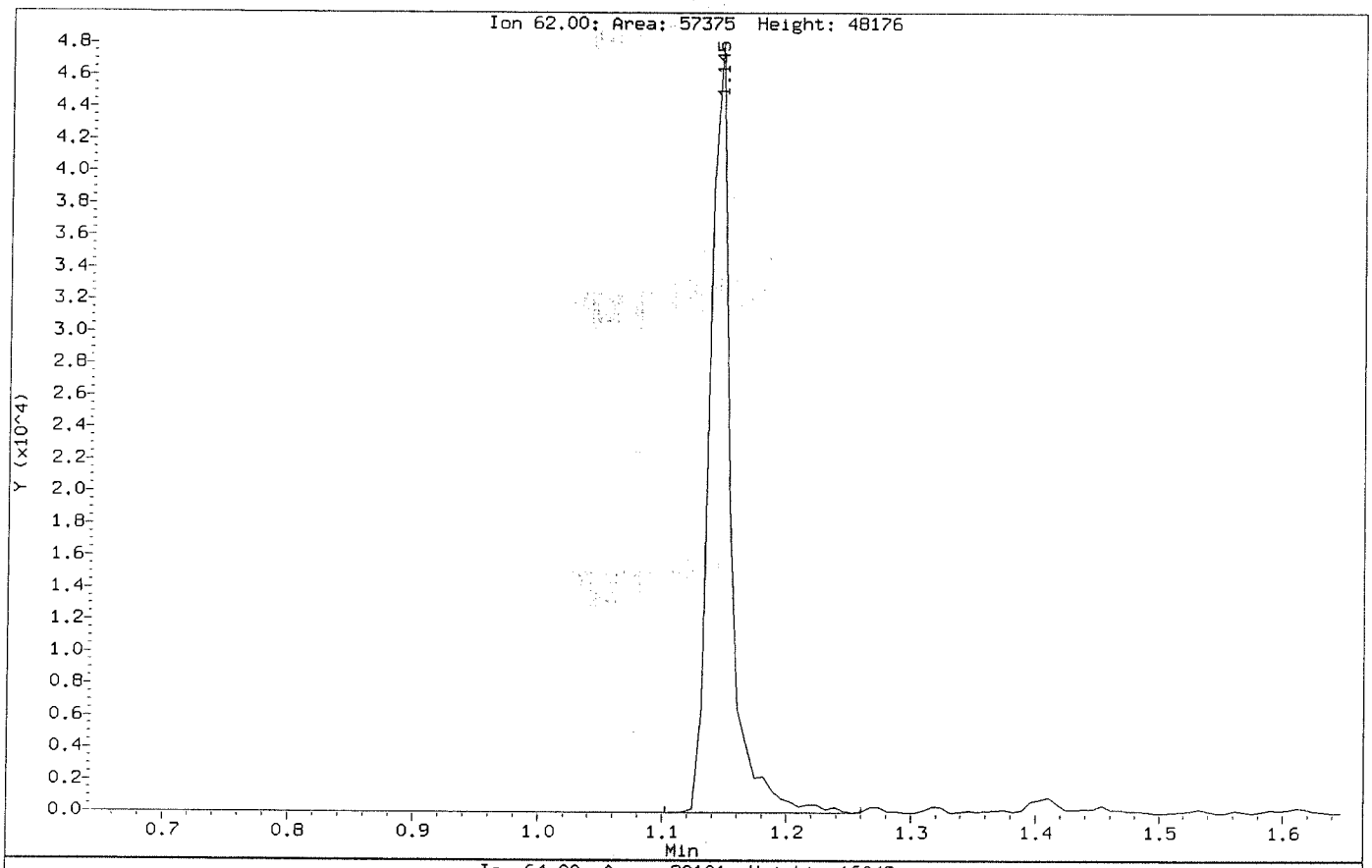
Compound: Vinyl Chloride
CAS Number: 75-01-4

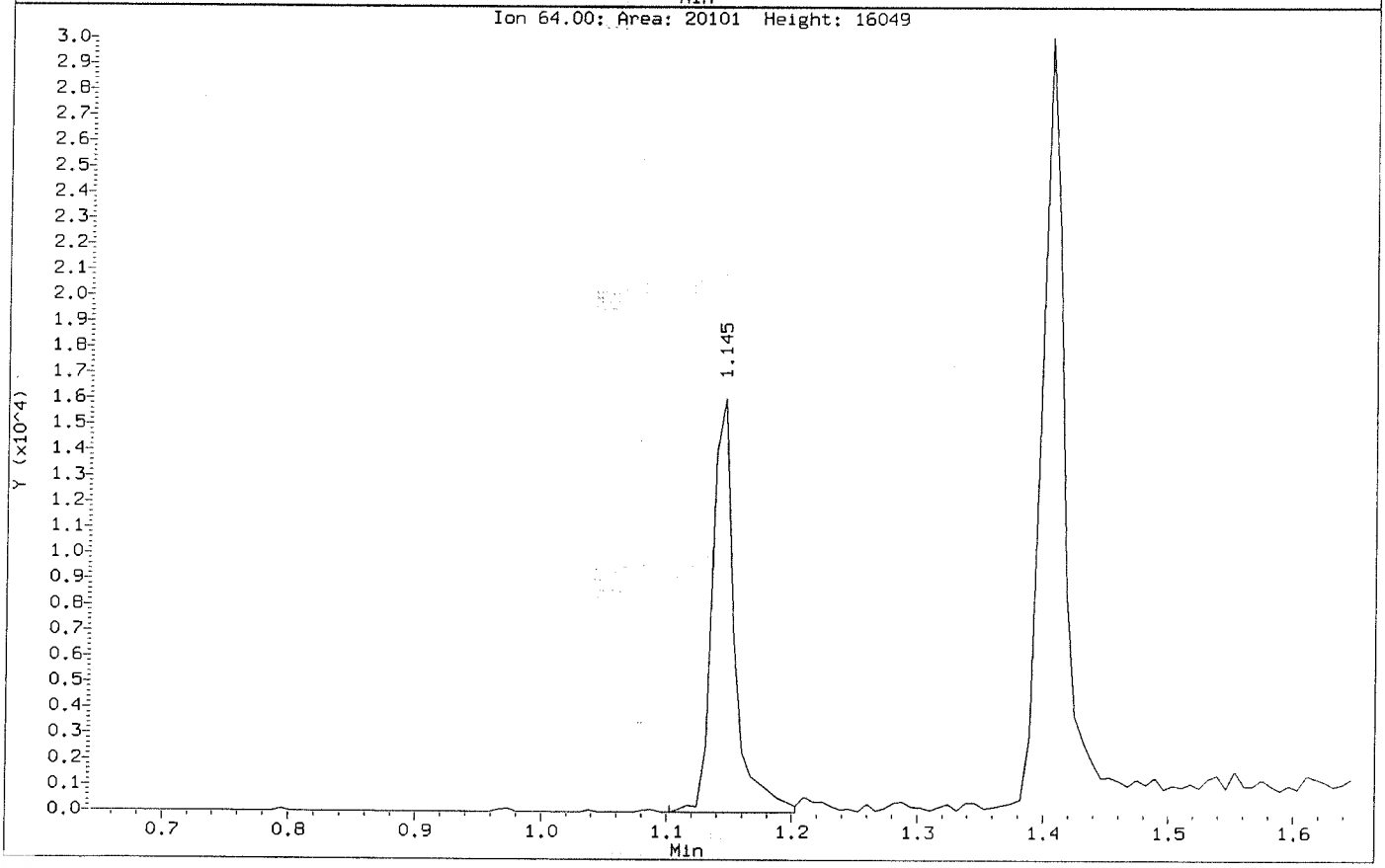




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110307.D
Injection Date: 03-NOV-2020 14:06
Instrument: voa6.i
Client Sample ID: VSTD020

Compound: Vinyl Chloride
CAS Number: 75-01-4





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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110308.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 03-NOV-2020 14:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 14:06 Cal File: X110307.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

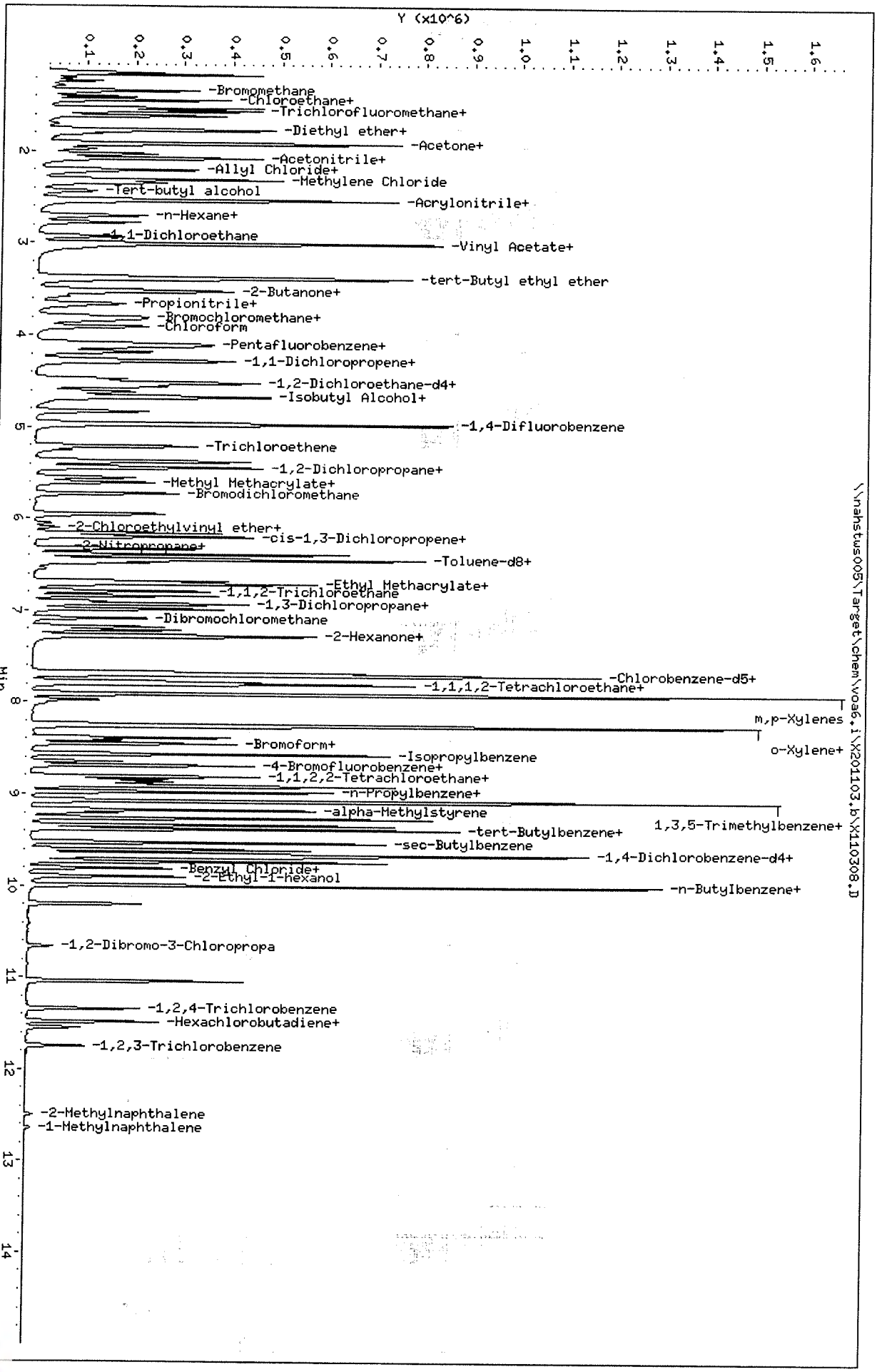
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	155760	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	292364	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	263420	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	124995	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	128500	50.0000	51.93
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	114211	50.0000	48.87
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	103962	50.0000	49.56
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	337960	50.0000	48.03
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	78832	50.0000	48.52
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	132708	50.0000	45.15
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	155709	50.0000	49.39(M)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	107386	50.0000	47.01
17 Methylene Chloride	84	2.305	2.305	(0.551)	95886	50.0000	44.83
38 Trichloroethene	130	5.214	5.214	(1.049)	94571	50.0000	48.53
5 Vinyl Chloride	62	1.145	1.145	(0.274)	157895	50.0000	45.87(H)

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

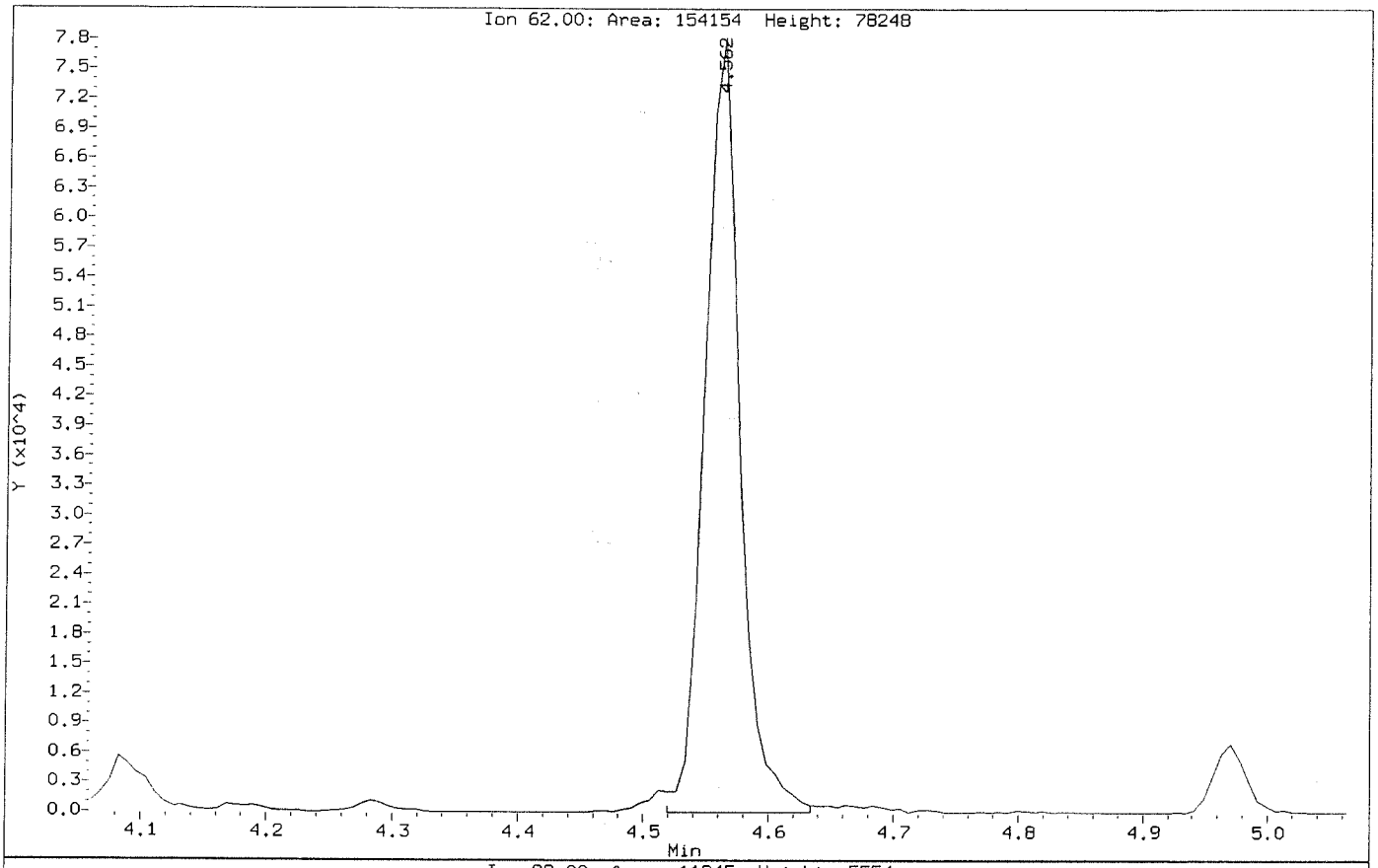


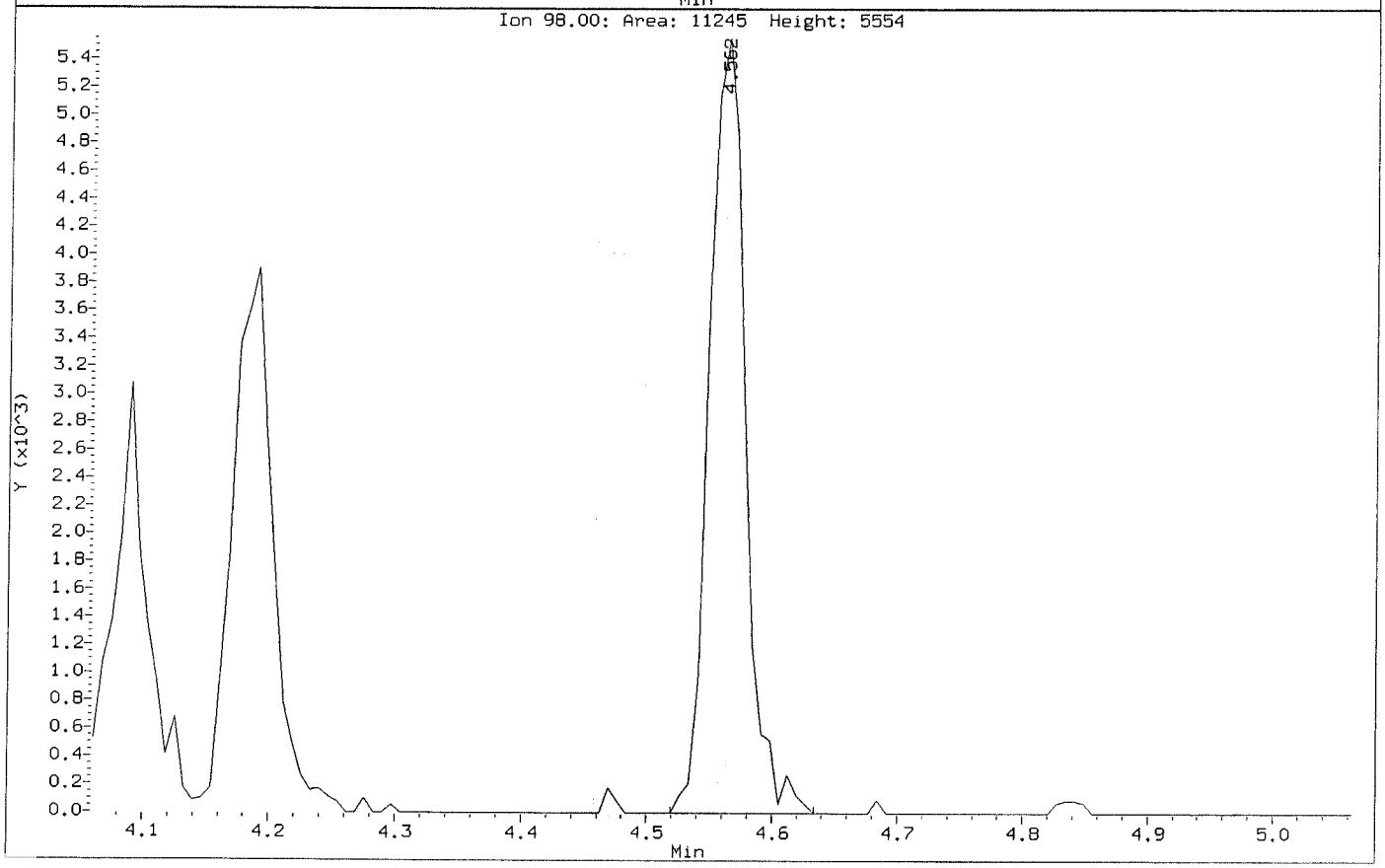
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110308.D
Date : 03-NOV-2020 14:27
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110308.D
Injection Date: 03-NOV-2020 14:27
Instrument: voa6.i
Client Sample ID: VSTD050

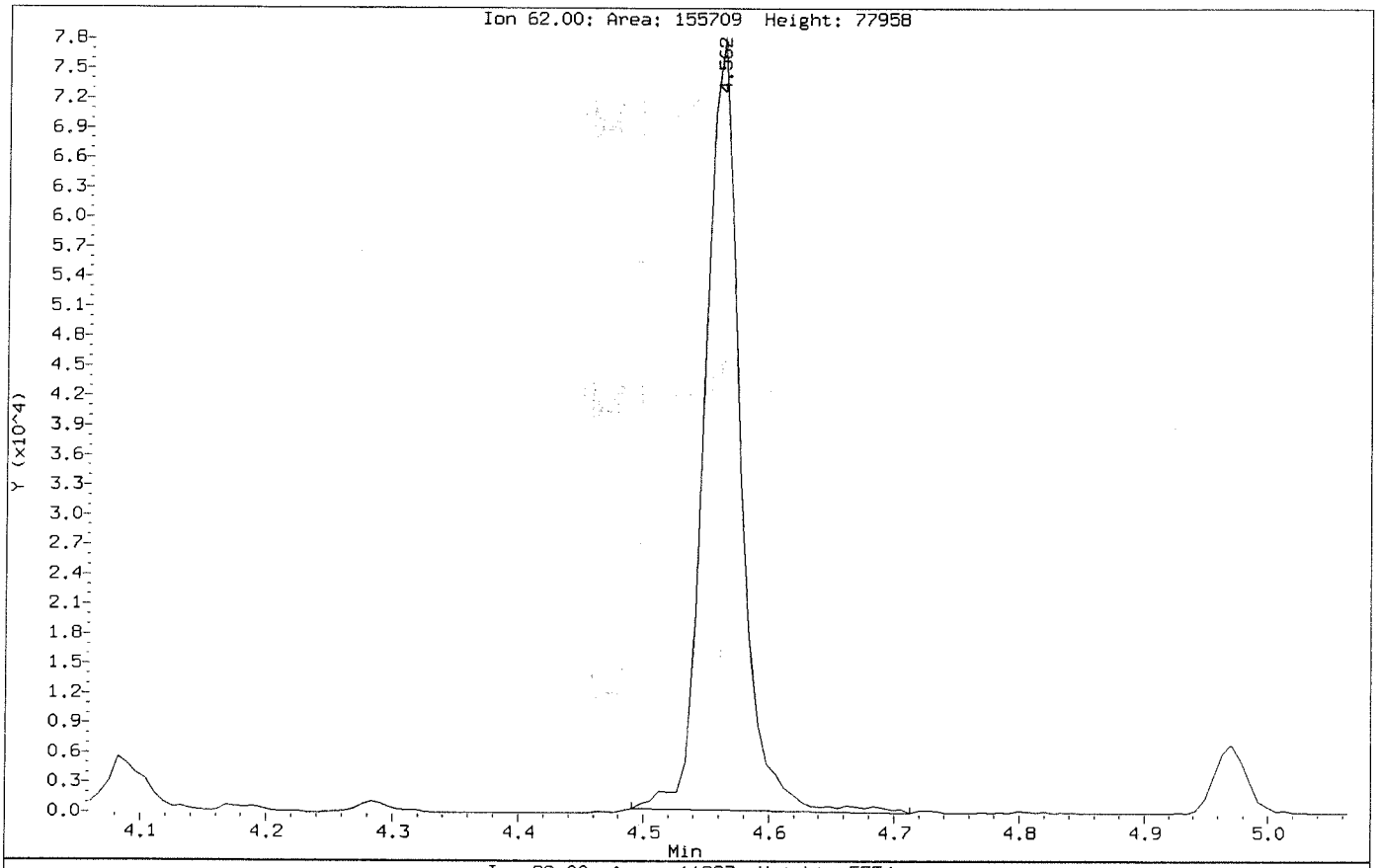
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

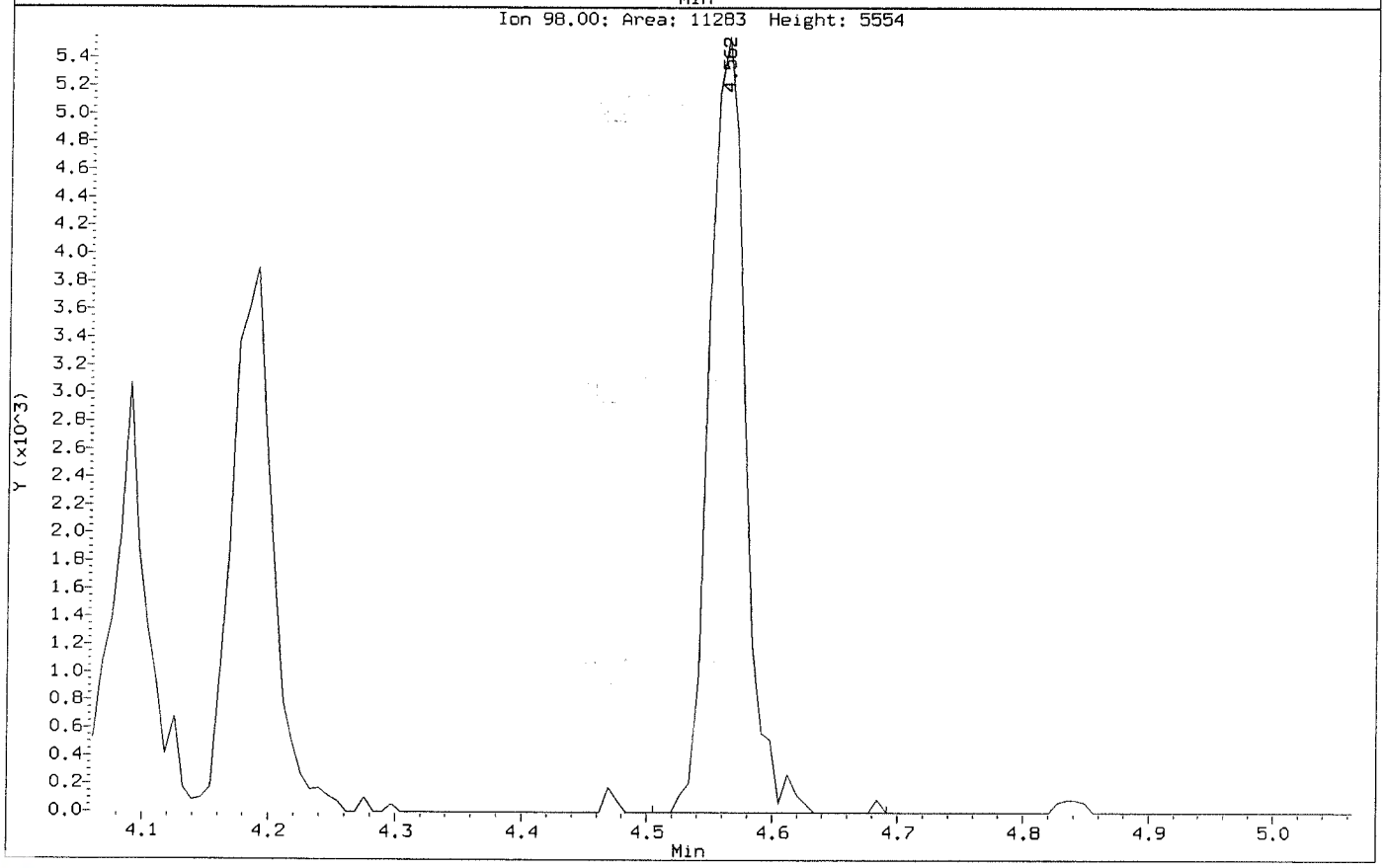




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110308.D
Injection Date: 03-NOV-2020 14:27
Instrument: voa6.i
Client Sample ID: VSTD050

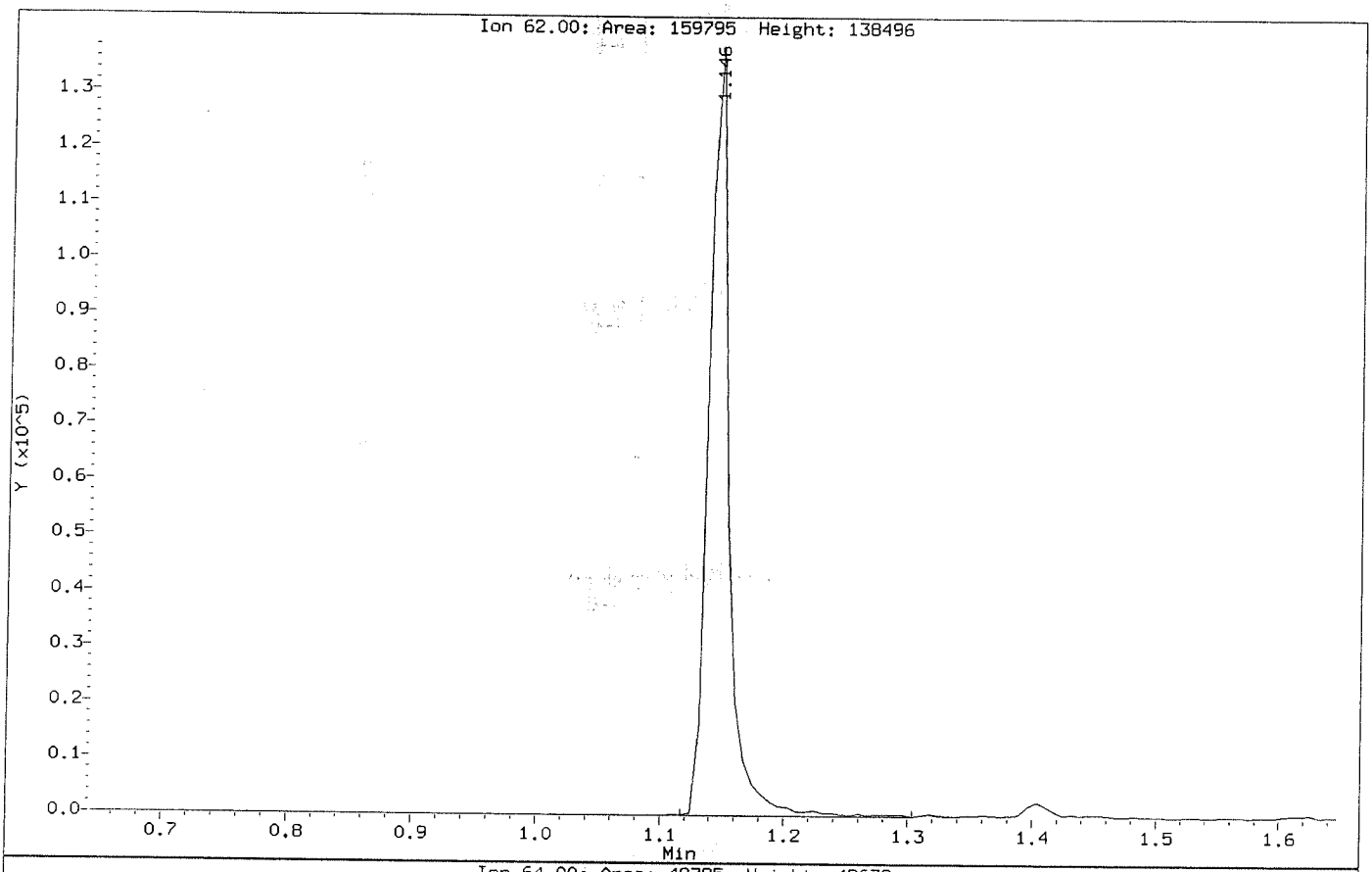
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

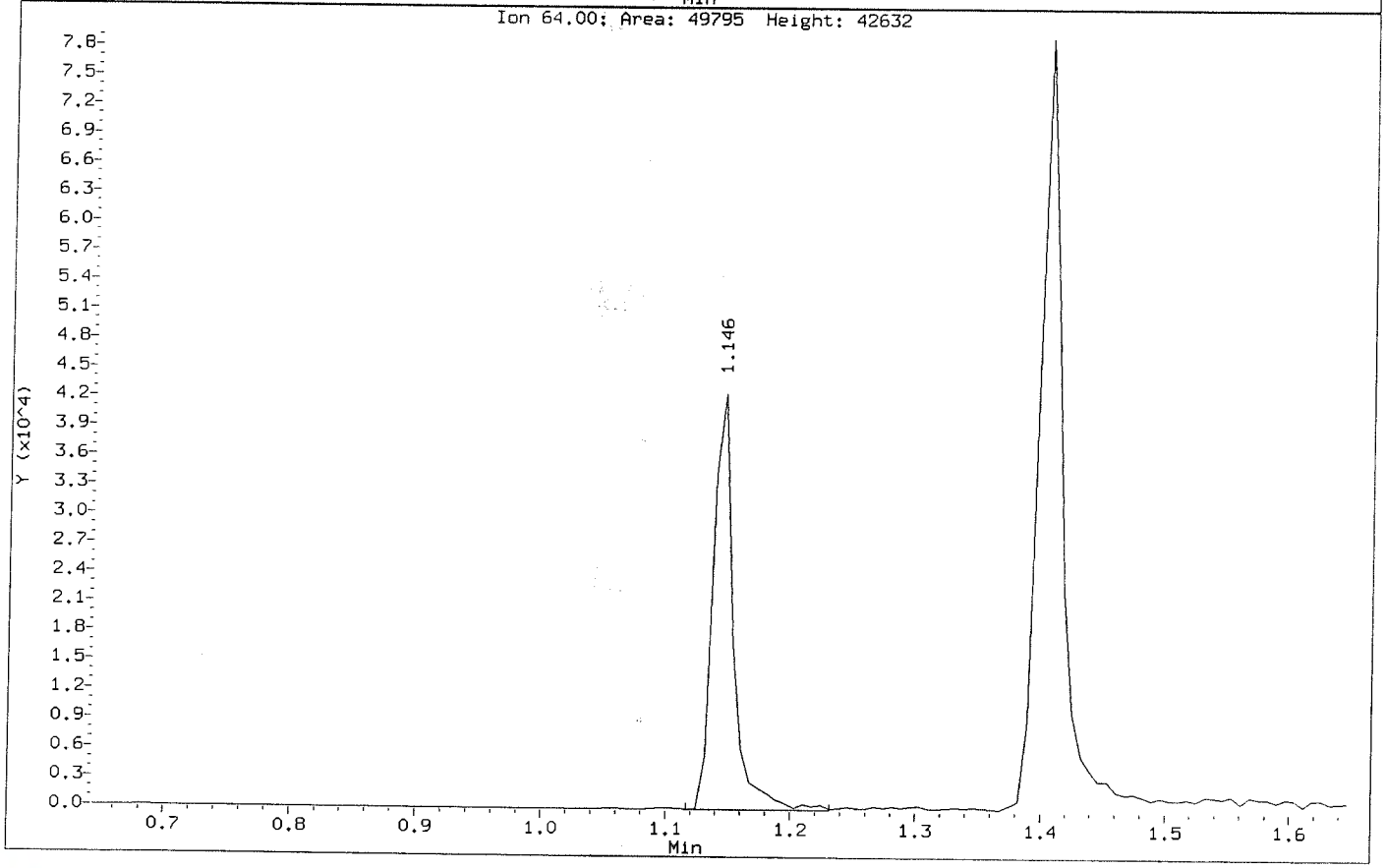




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110308.D
Injection Date: 03-NOV-2020 14:27
Instrument: voa6.i
Client Sample ID: VSTD050

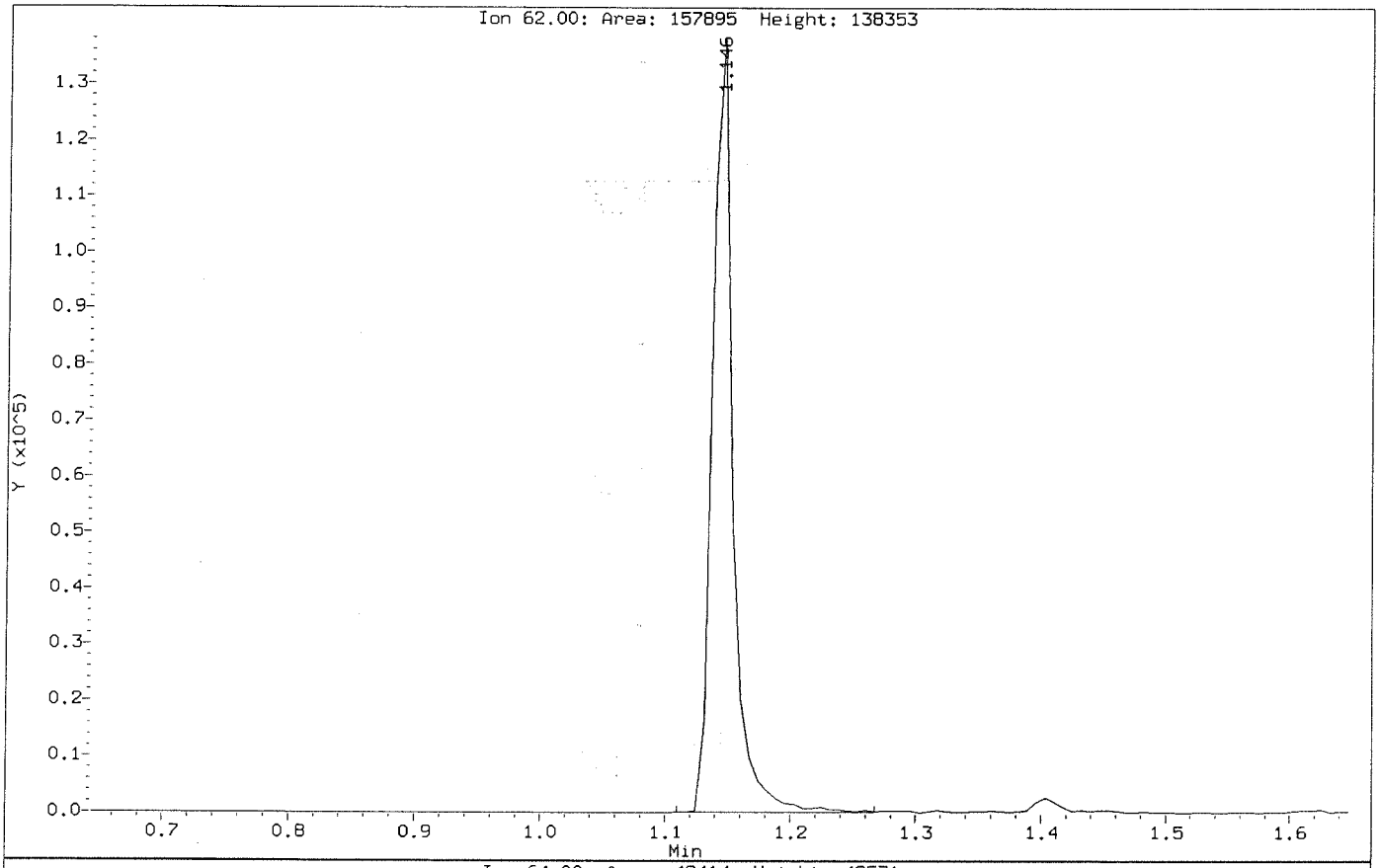
Compound: Vinyl Chloride
CAS Number: 75-01-4

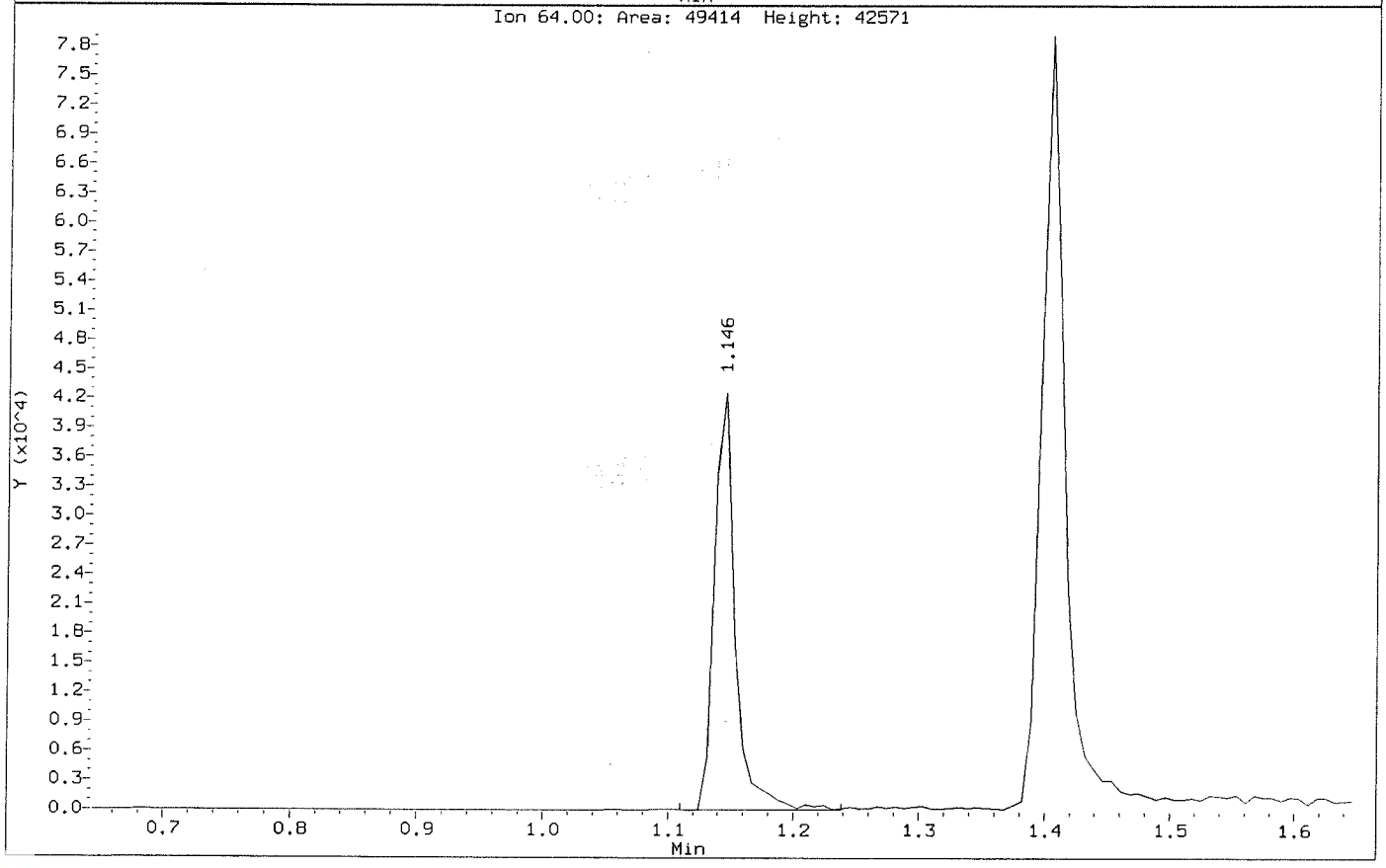




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110308.D
Injection Date: 03-NOV-2020 14:27
Instrument: voa6.i
Client Sample ID: VSTD050

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110309.D Page 1
Report Date: 30-Nov-2020 15:10

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110309.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 03-NOV-2020 14:48
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 14:27 Cal File: X110308.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

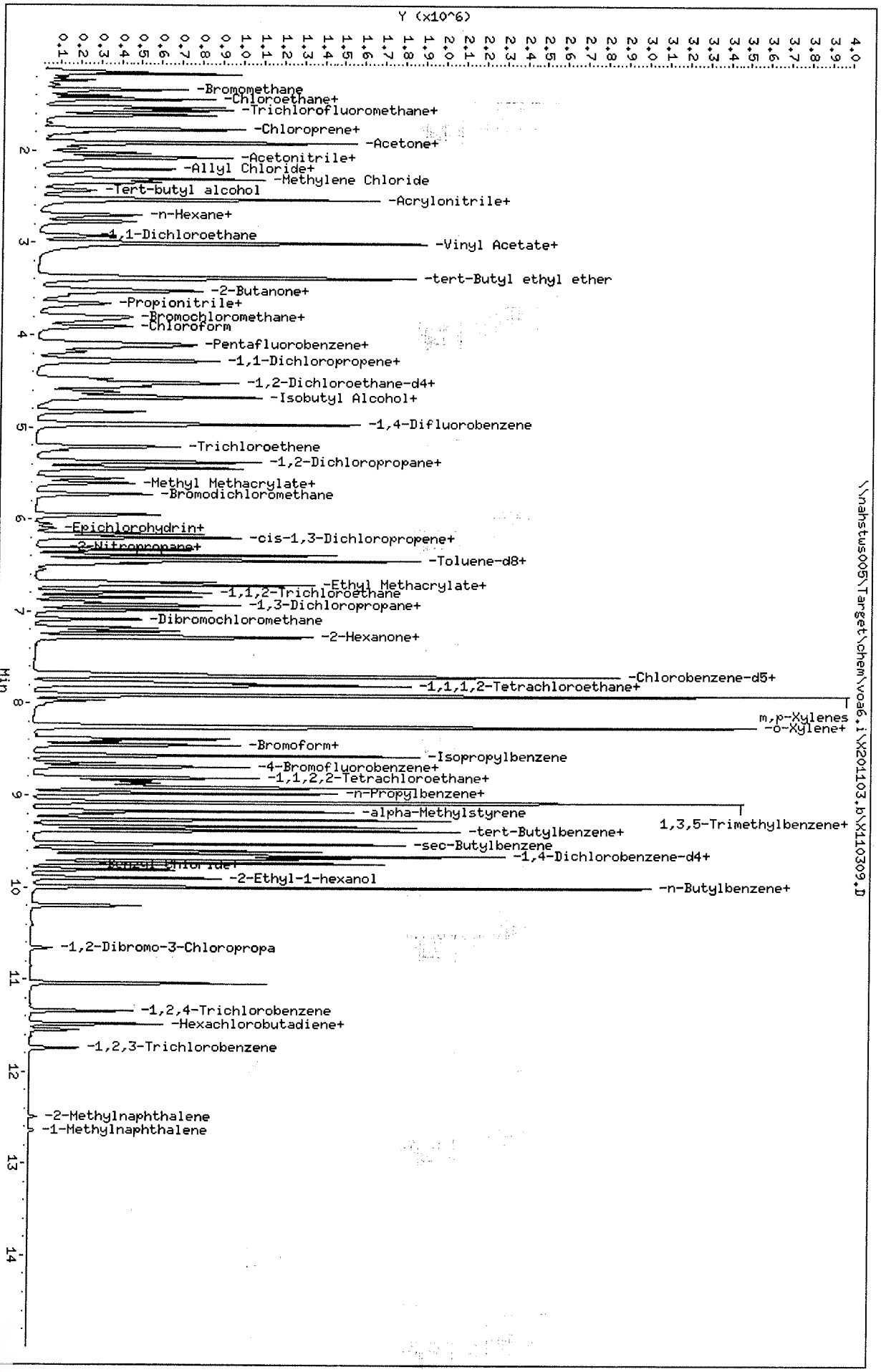
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	154236	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	303407	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	276014	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	137781	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	253050	100.000	98.38
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	252308	100.000	99.11
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	209542	100.000	100.88
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	766192	100.000	103.92
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	166608	100.000	97.86
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	268838	100.000	92.38
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	300213	100.000	91.76(M)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	216761	100.000	95.83
17 Methylene Chloride	84	2.305	2.305	(0.550)	202216	100.000	95.49
38 Trichloroethene	130	5.206	5.206	(1.048)	193089	100.000	95.49
5 Vinyl Chloride	62	1.145	1.145	(0.273)	335336	100.000	98.39(H)

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

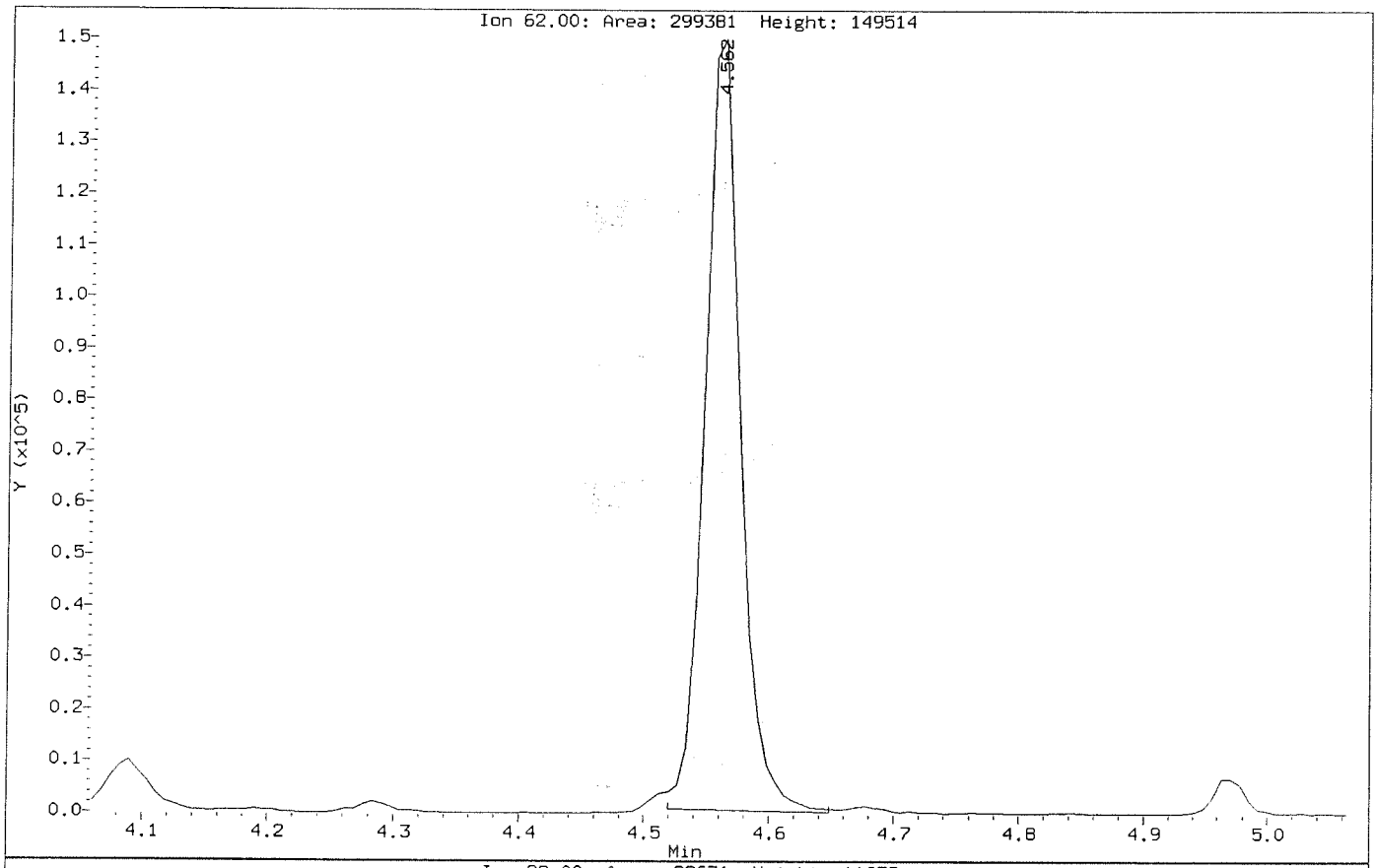


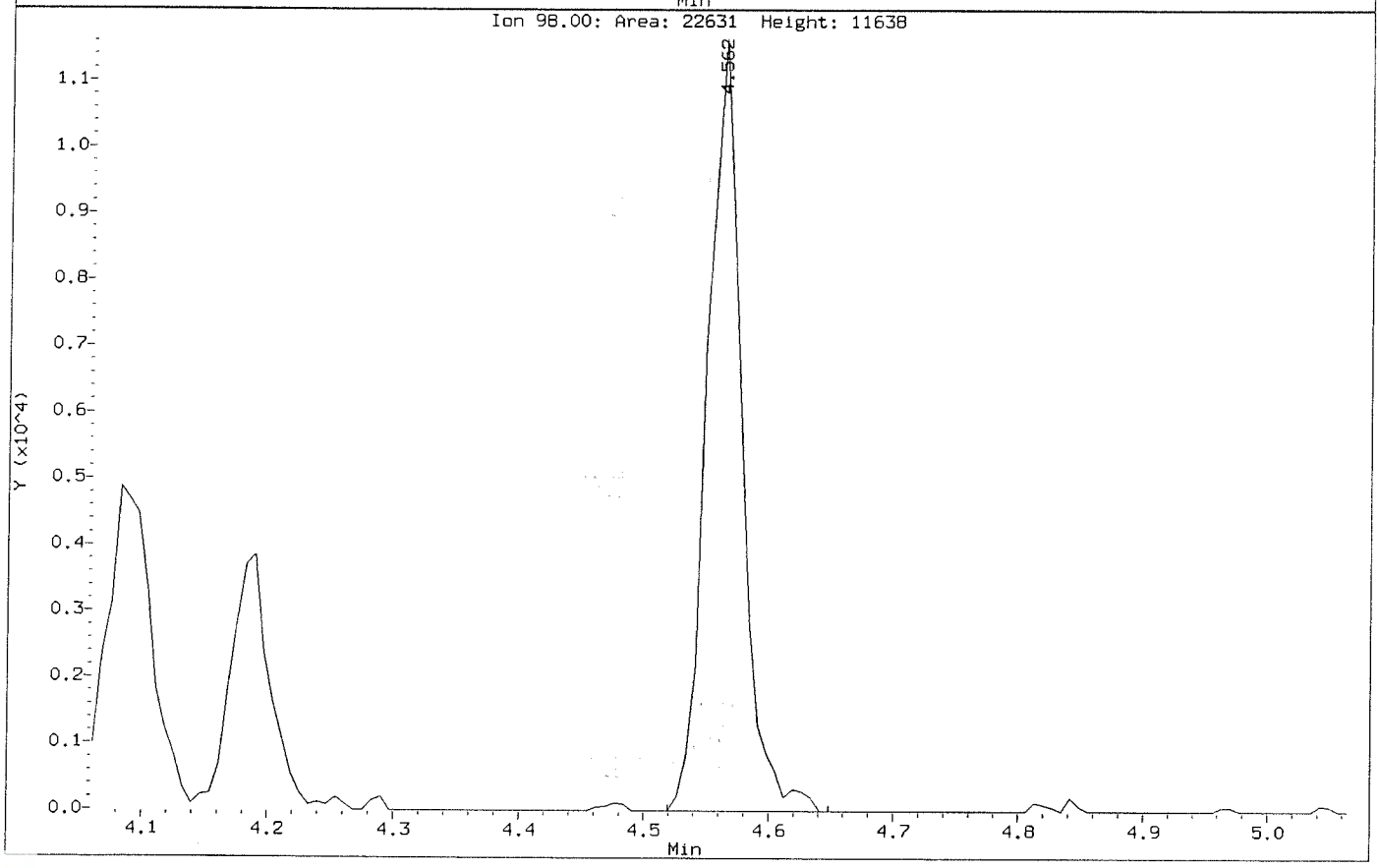
Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110309.D
Date : 03-NOV-2020 14:48
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110309.D
Injection Date: 03-NOV-2020 14:48
Instrument: voa6.i
Client Sample ID: VSTD100

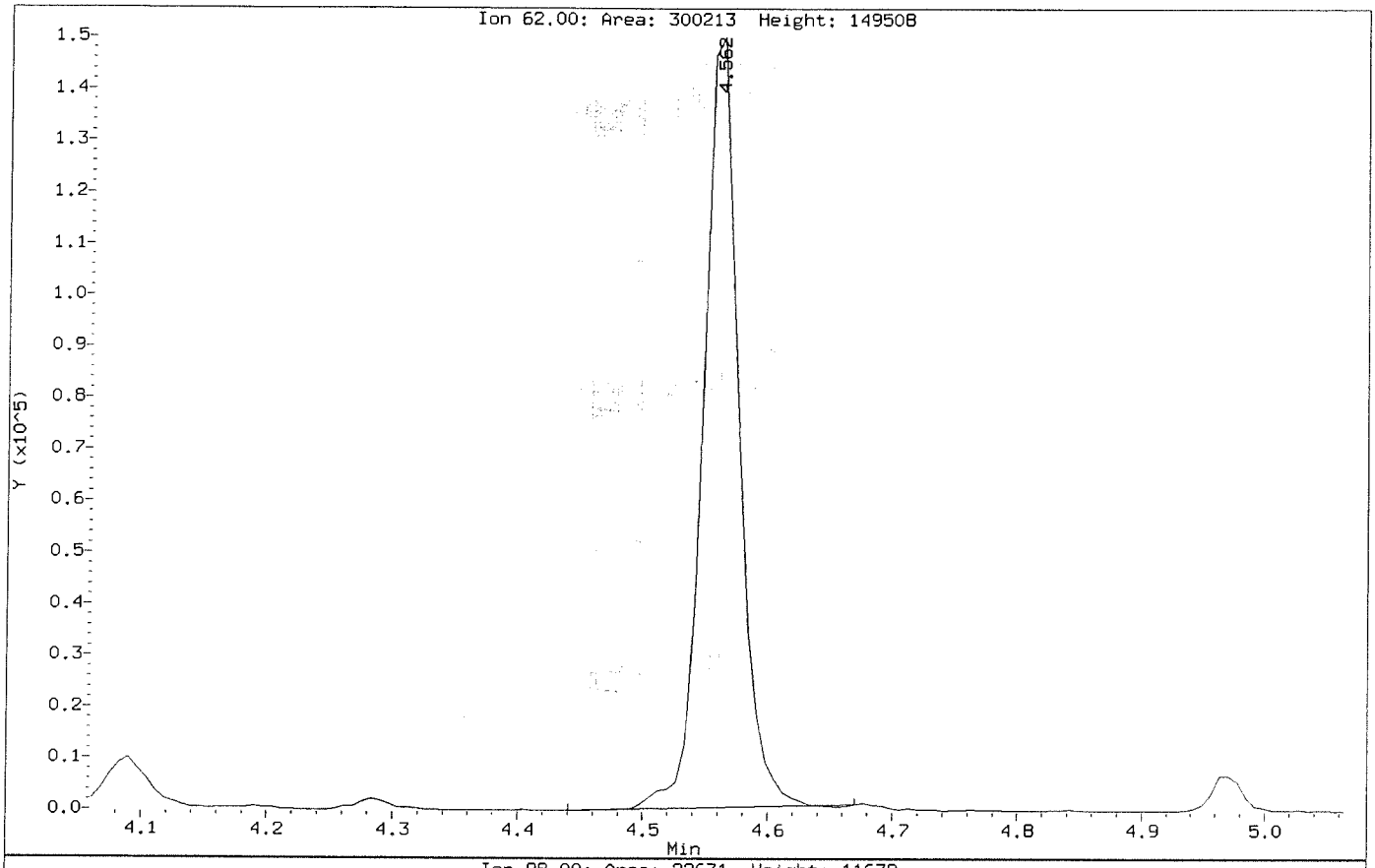
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

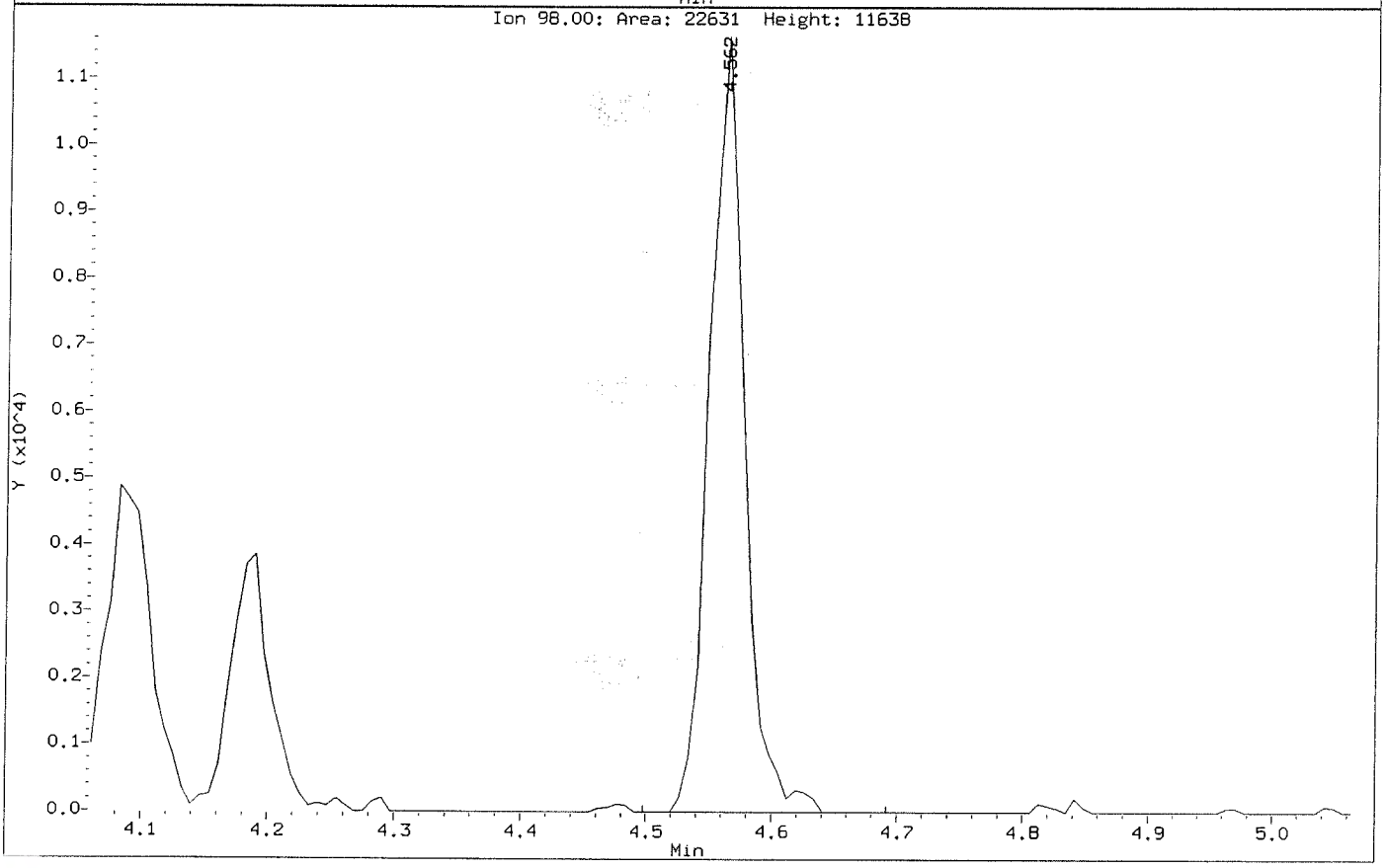




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110309.D
Injection Date: 03-NOV-2020 14:48
Instrument: voa6.i
Client Sample ID: VSTD100

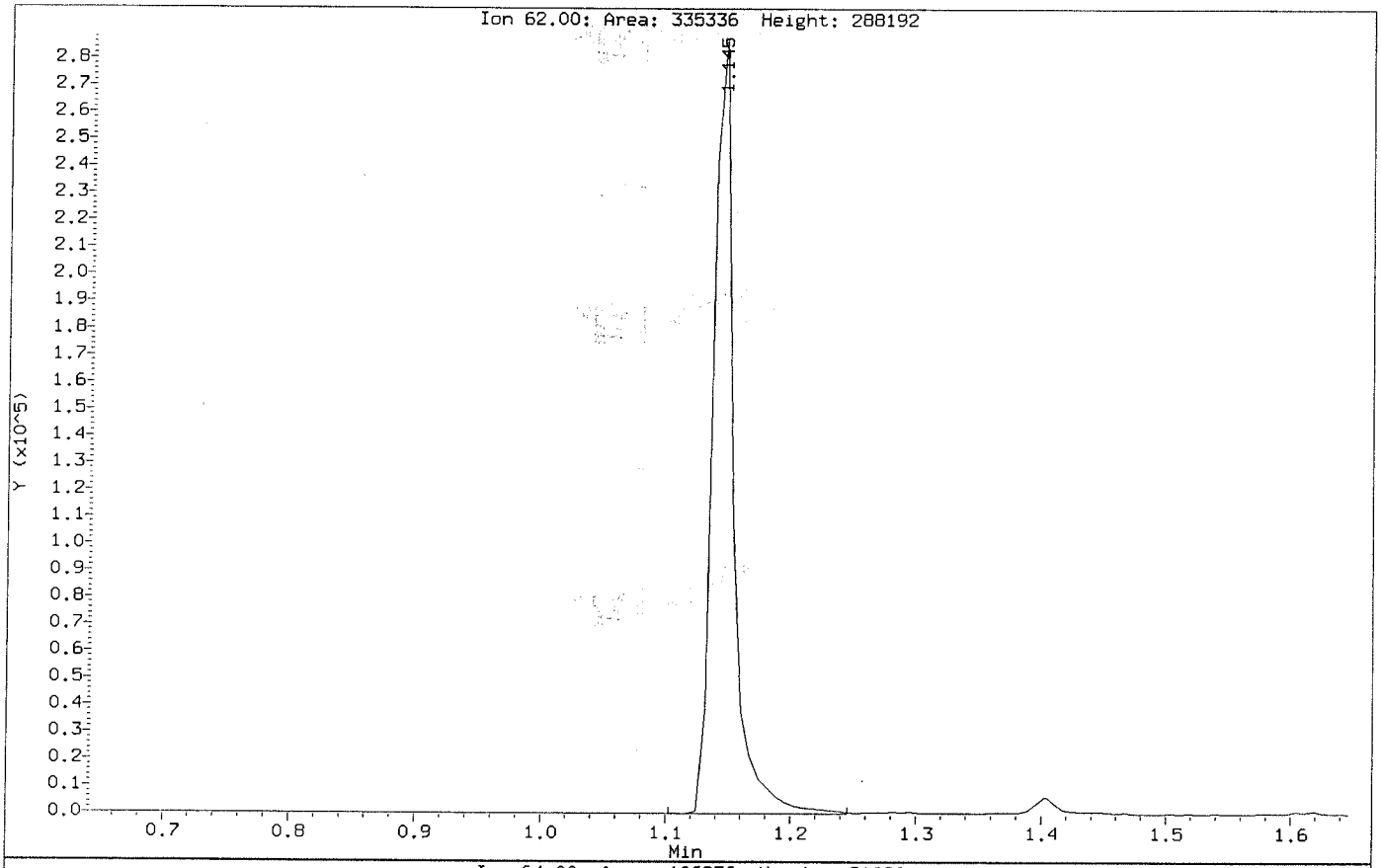
Compound: 1.2-Dichloroethane
CAS Number: 107-06-2

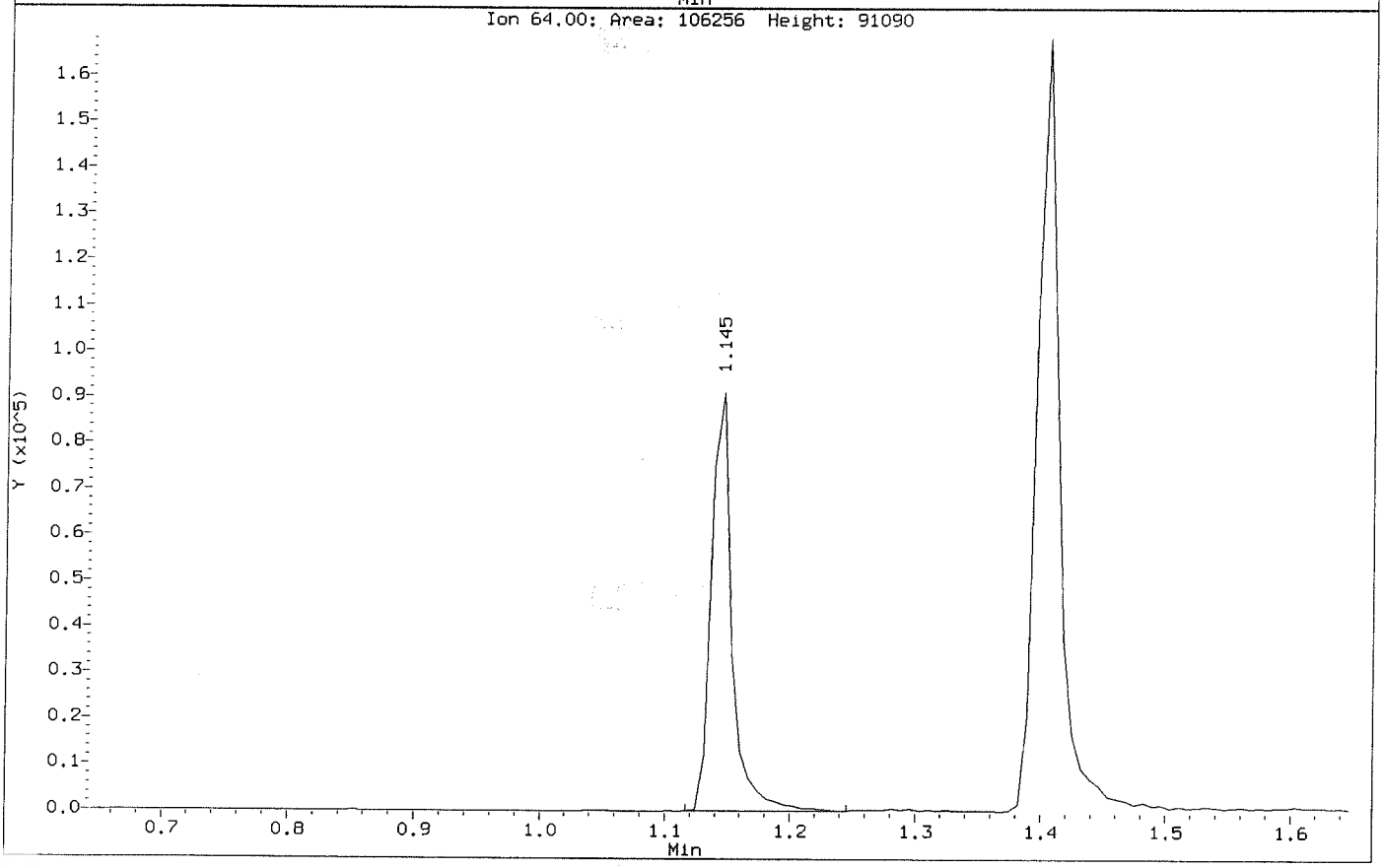




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Before\X110309.D
Injection Date: 03-NOV-2020 14:48
Instrument: voa6.i
Client Sample ID: VSTD100

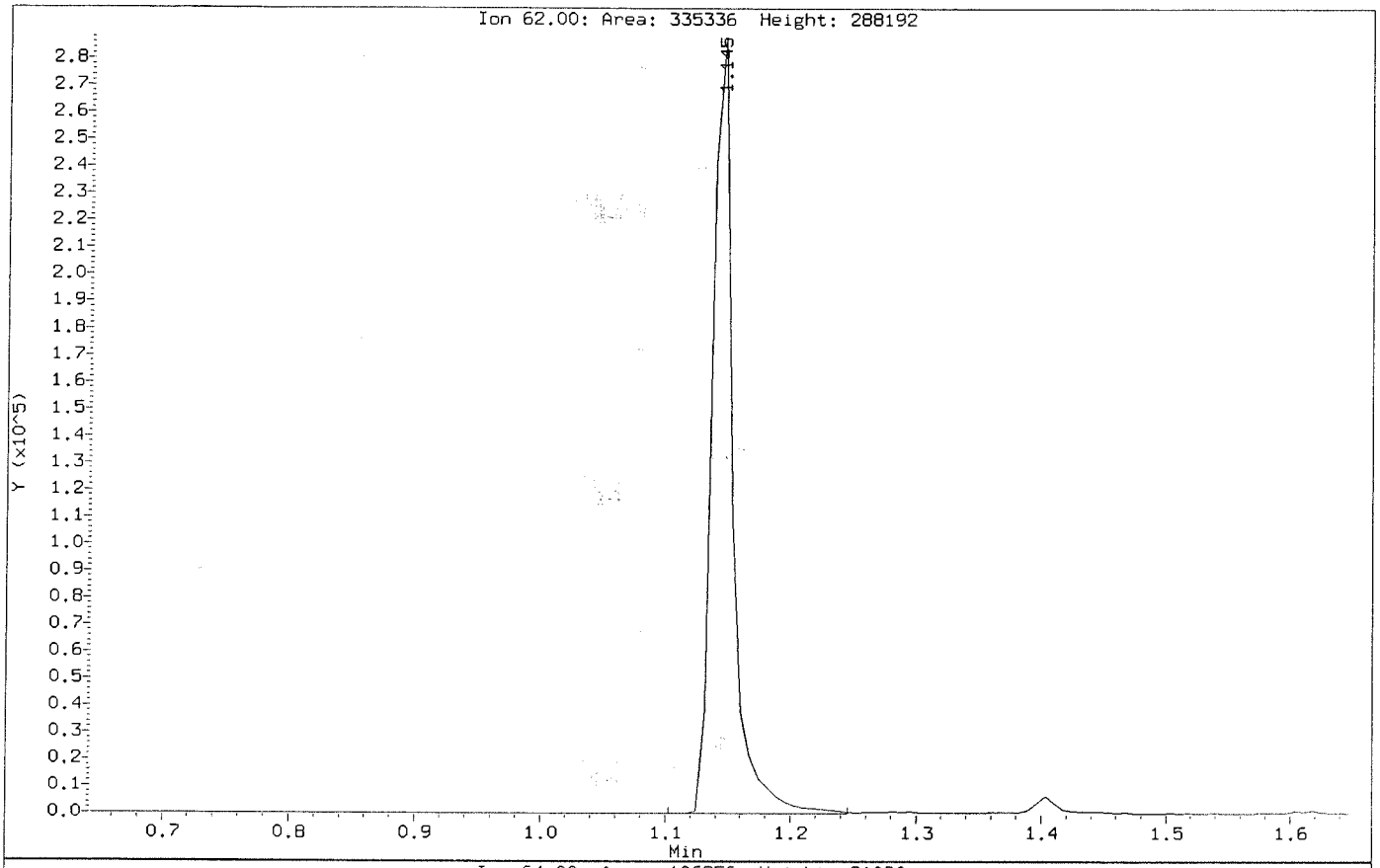
Compound: Vinyl Chloride
CAS Number: 75-01-4

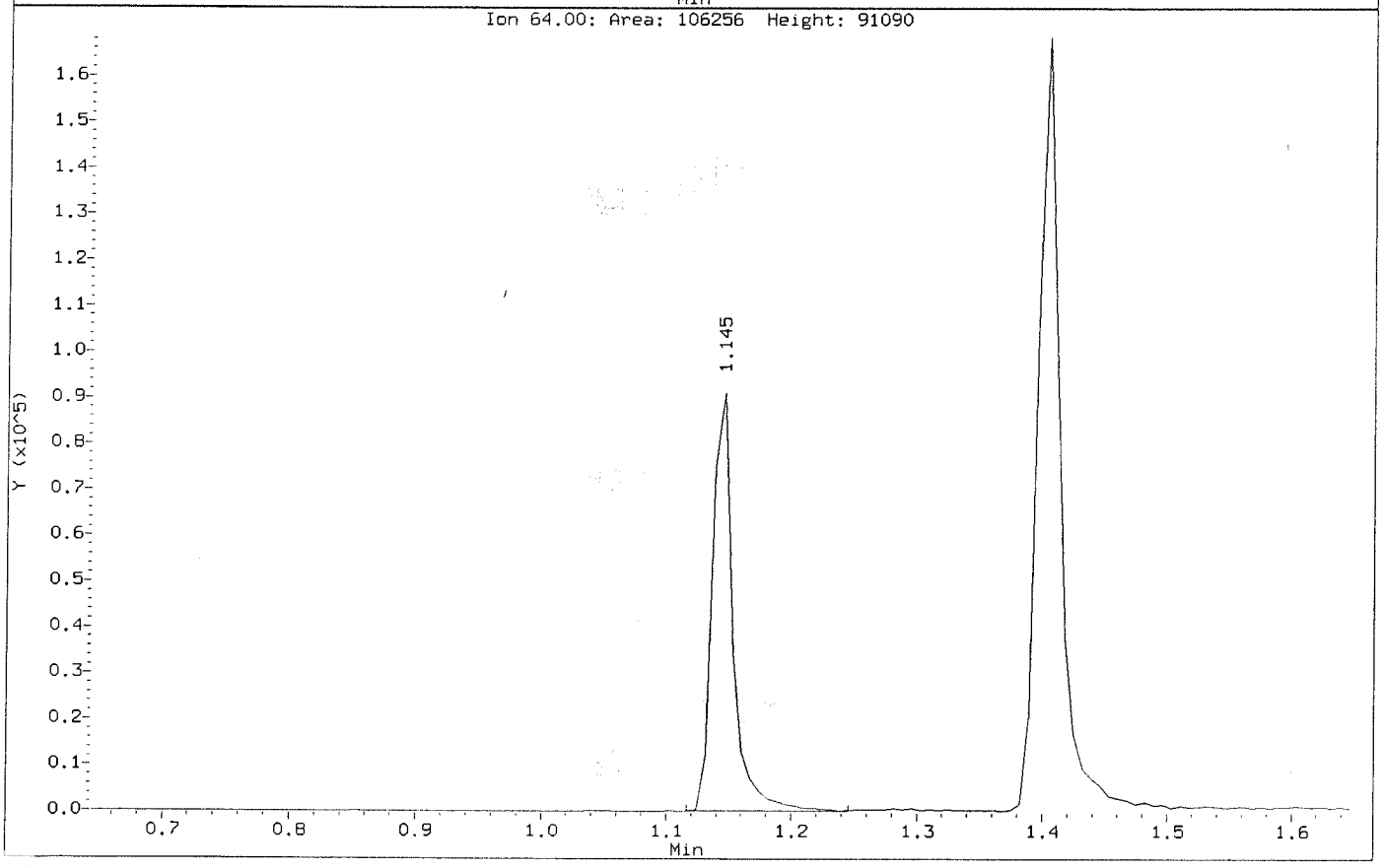




Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110309.D
Injection Date: 03-NOV-2020 14:48
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110310.D Page 1
Report Date: 30-Nov-2020 15:10

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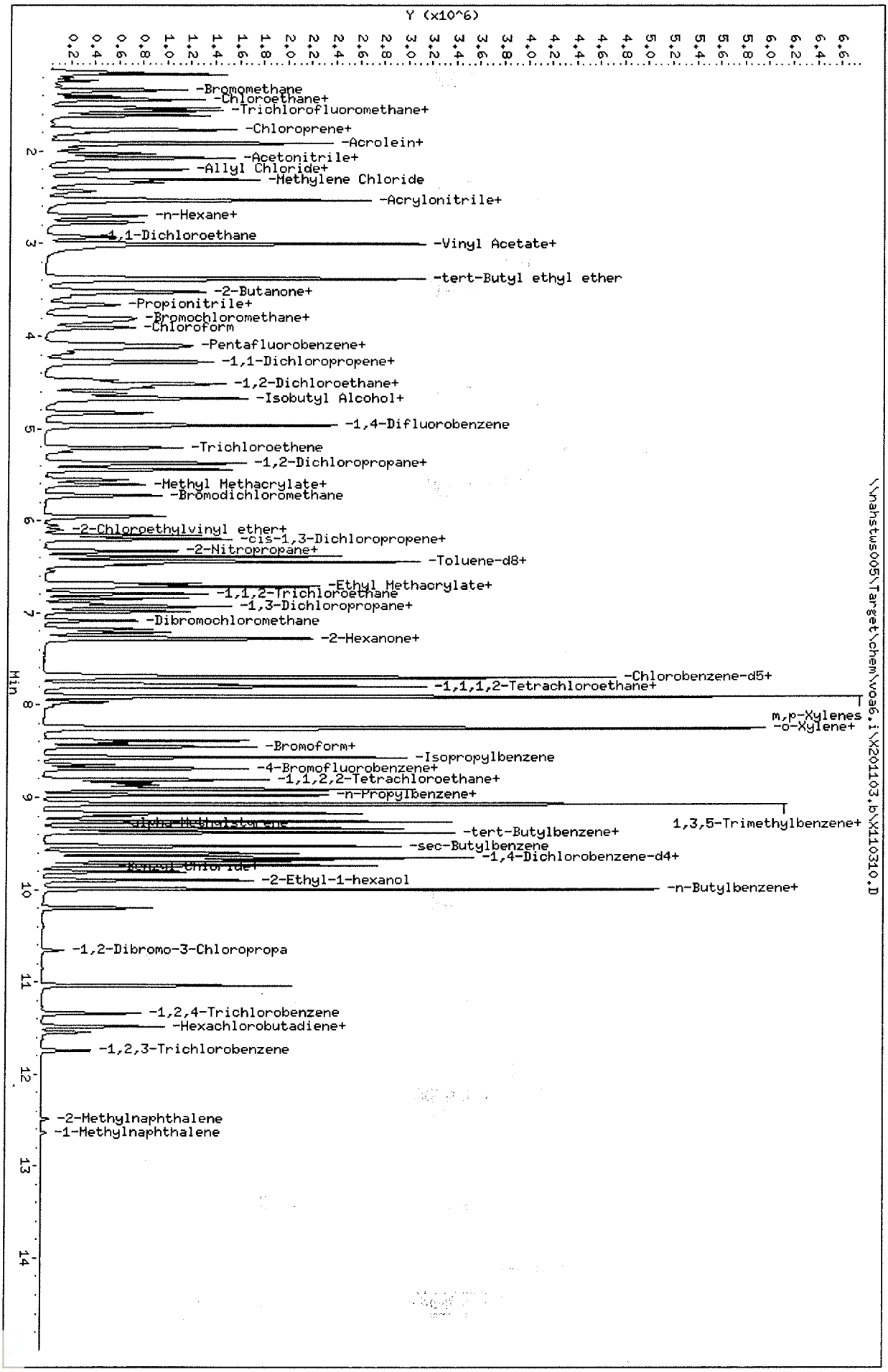
Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110310.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 03-NOV-2020 15:09
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 14:48 Cal File: X110309.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150132	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	319062	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	282514	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	143769	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	404360	150.000	150.41
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	414999	150.000	152.40
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	330895	150.000	163.65
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1195633	150.000	158.44
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	249826	150.000	143.37
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	416396	150.000	147.00
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	479231	150.000	139.29
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	341602	150.000	155.15
17 Methylene Chloride	84	2.305	2.305	(0.550)	313960	150.000	152.31
38 Trichloroethene	130	5.206	5.206	(1.048)	305351	150.000	143.61
5 Vinyl Chloride	62	1.145	1.145	(0.273)	494633	150.000	149.10



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110310.D
Date : 03-NOV-2020 15:09
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110311.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 03-NOV-2020 15:30
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:09 Cal File: X110310.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

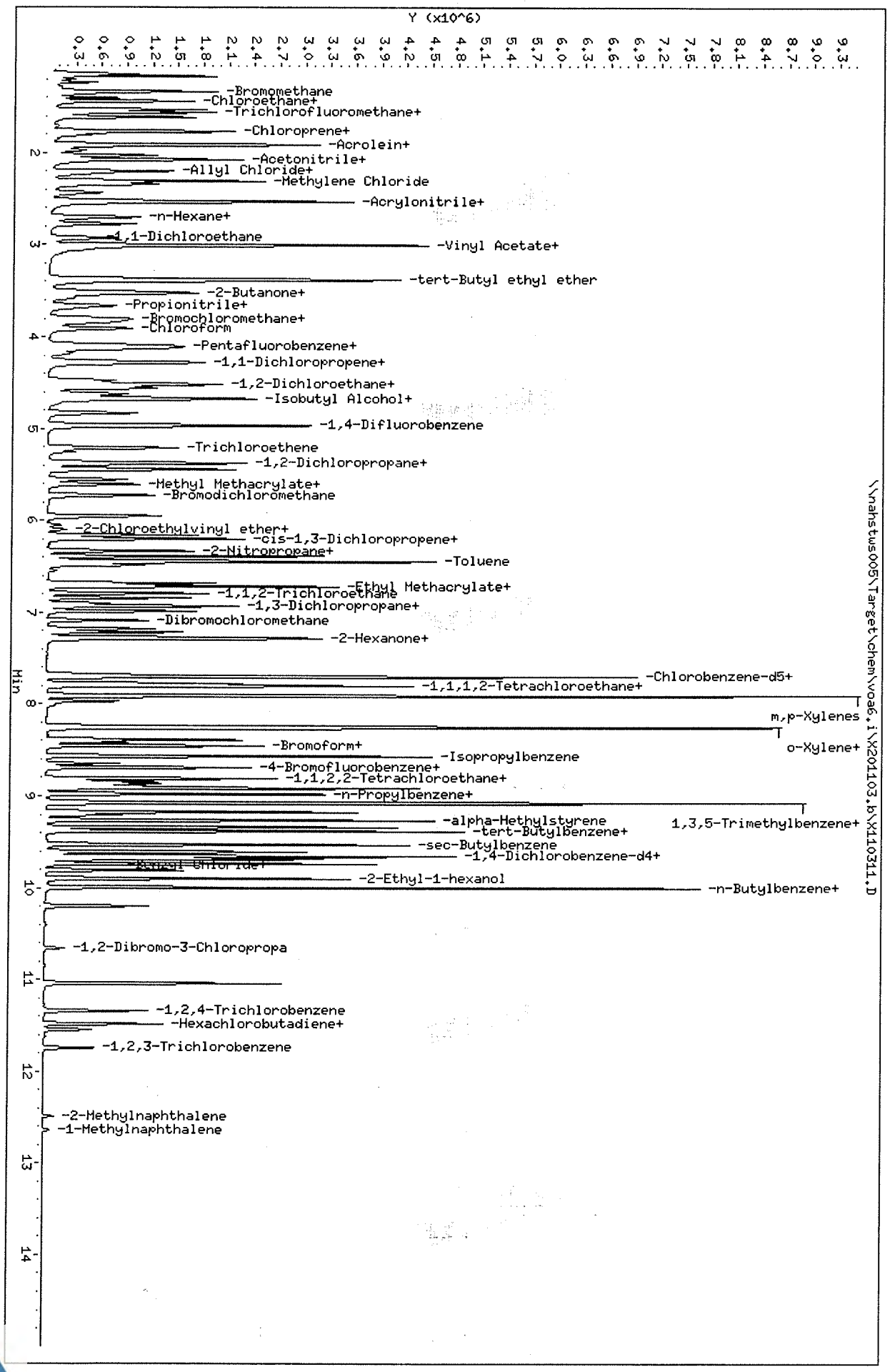
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	153801	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	324078	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	282227	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	147588	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	536735	200.000	183.85
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	565367	200.000	198.95
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	430753	200.000	207.96(A)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1620124	200.000	214.91(A)
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	354012	200.000	203.37(A)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	570411	200.000	196.57
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	635677	200.000	181.91
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	464614	200.000	205.99(A)
17 Methylene Chloride	84	2.305	2.305	(0.551)	433637	200.000	205.35(A)
38 Trichloroethene	130	5.206	5.206	(1.048)	414564	200.000	191.95
5 Vinyl Chloride	62	1.145	1.145	(0.274)	681916	200.000	200.66(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6,i\X201103,b\X110311.D
Date : 03-NOV-2020 15:30
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

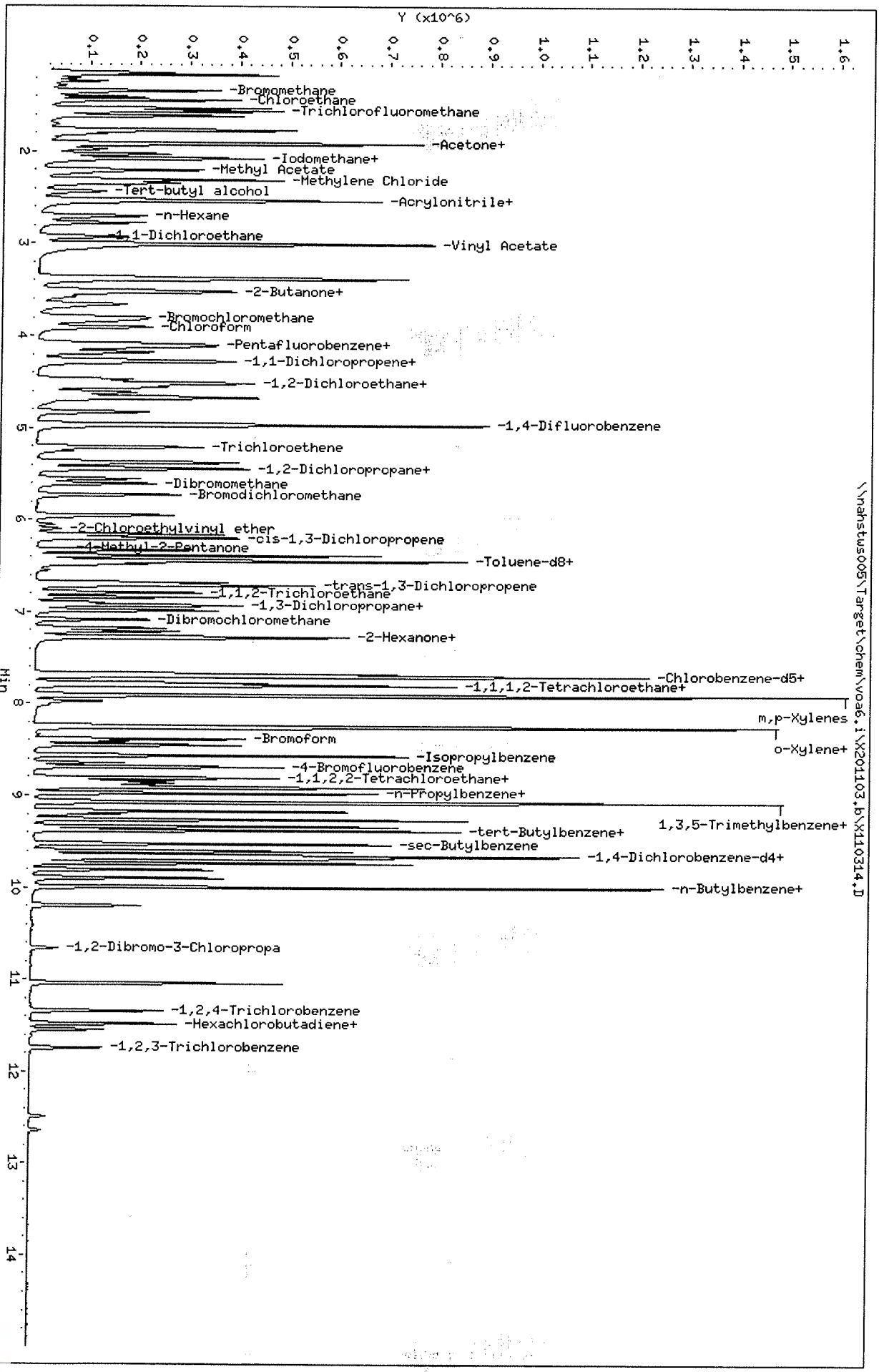
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110314.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 03-NOV-2020 16:33
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:10 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 15 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	154701	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	284123	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	261104	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	123192	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	128673	52.3463	52.34
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	117116	50.4974	50.49
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	103020	49.4485	49.44
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	340698	48.8520	48.85
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	76458	47.4763	47.47
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	137684	47.1720	47.17
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	149514	48.8037	48.80
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	108603	47.8702	47.87
17 Methylene Chloride	84	2.305	2.305	(0.551)	96413	45.3917	45.39
38 Trichloroethene	130	5.206	5.206	(1.048)	94335	49.8231	49.82
5 Vinyl Chloride	62	1.145	1.145	(0.274)	169292	49.5266	49.52



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110314.D
Date : 03-NOV-2020 16:33
Client ID: ICV
Sample Info: CCV;CCV;2;;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110316.D Page 1
Report Date: 30-Nov-2020 15:20

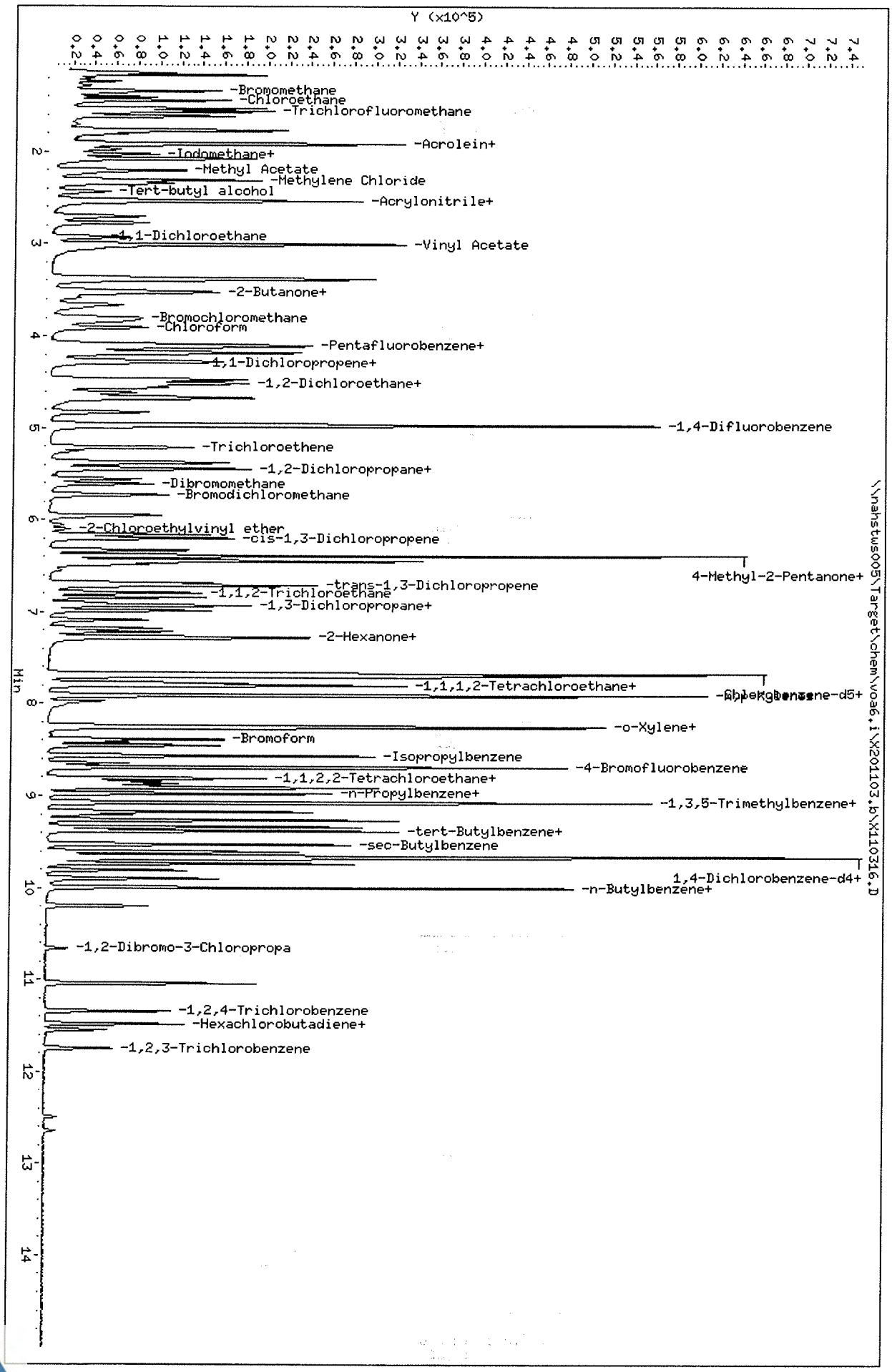
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110316.D
Lab Smp Id: VLCSW-201103 Client Smp ID: VLCSW-201103
Inj Date : 03-NOV-2020 17:15
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-201103;VLCSW-201103;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:18 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 17 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	157990	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	286594	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	260133	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	116761	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	125526	50.1001	50.10
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	115212	49.8862	49.88
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	100119	47.0557	47.05
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	331714	47.7414	47.74
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	30796	19.1940	19.19
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	56739	19.0347	19.03
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	60212	19.4847	19.48
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	41364	17.8529	17.85
17 Methylene Chloride	84	2.305	2.305	(0.551)	37582	17.3255	17.32
38 Trichloroethene	130	5.214	5.206	(1.049)	38026	19.9103	19.91
5 Vinyl Chloride	62	1.145	1.145	(0.274)	68013	19.4831	19.48



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110316.D
Date : 03-NOV-2020 17:15
Client ID: VLCSW-201103
Sample Info: VLCSW-201103;VLCSW-201103;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110319.D
Lab Smp Id: VBLKW-201103 Client Smp ID: VBLKW-201103
Inj Date : 03-NOV-2020 18:18
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-201103;VBLKW-201103;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:18 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 20 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

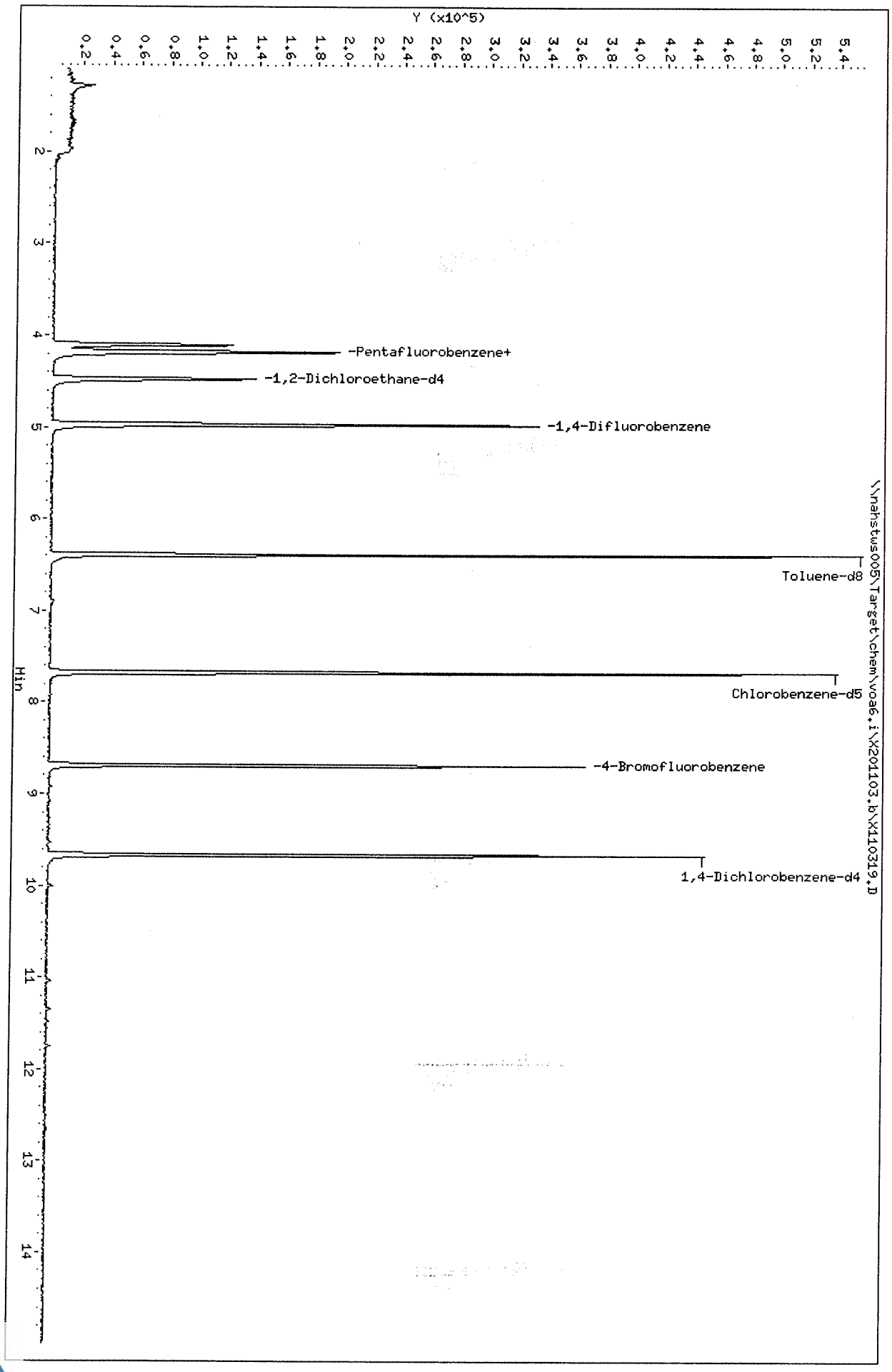
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	141172	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	242423	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	217885	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	86038	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	95947	43.1002	43.10
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	86917	45.1058	45.10
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	79503	41.8177	41.81
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	292040	50.1812	50.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110319.D
Date : 03-NOV-2020 18:18
Client ID: VBLKW-201103
Sample Info: VBLKW-201103;VBLKW-201103;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110322.D Page 1
Report Date: 30-Nov-2020 15:17

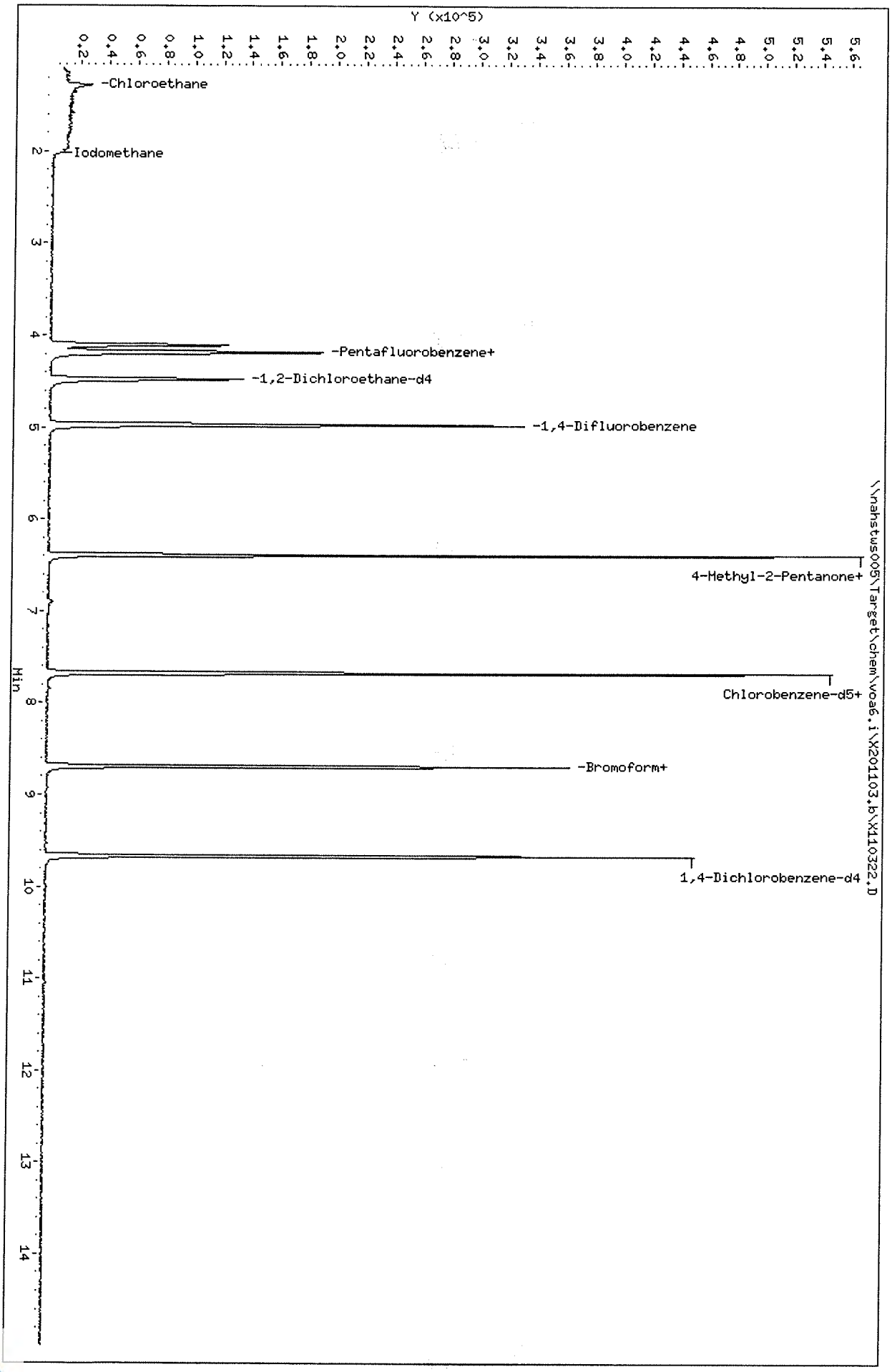
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110322.D
Lab Smp Id: HS20101123-12 Client Smp ID: HS20101123-12
Inj Date : 03-NOV-2020 19:21
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-12;HS20101123-12;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:13 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 23
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	135160	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	236362	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	217352	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	88198	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	92729	43.4943	43.49
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	91664	47.5898	47.58
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	77575	42.6185	42.61
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	292434	50.3722	50.37



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110322.D
Date : 03-NOV-2020 19:21
Client ID: HS20101123-12
Sample Info: HS20101123-12;HS20101123-12;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D Page 1
Report Date: 30-Nov-2020 15:17

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D
Lab Smp Id: HS20101123-01 Client Smp ID: HS20101123-01
Inj Date : 03-NOV-2020 19:42
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-01;HS20101123-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:13 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

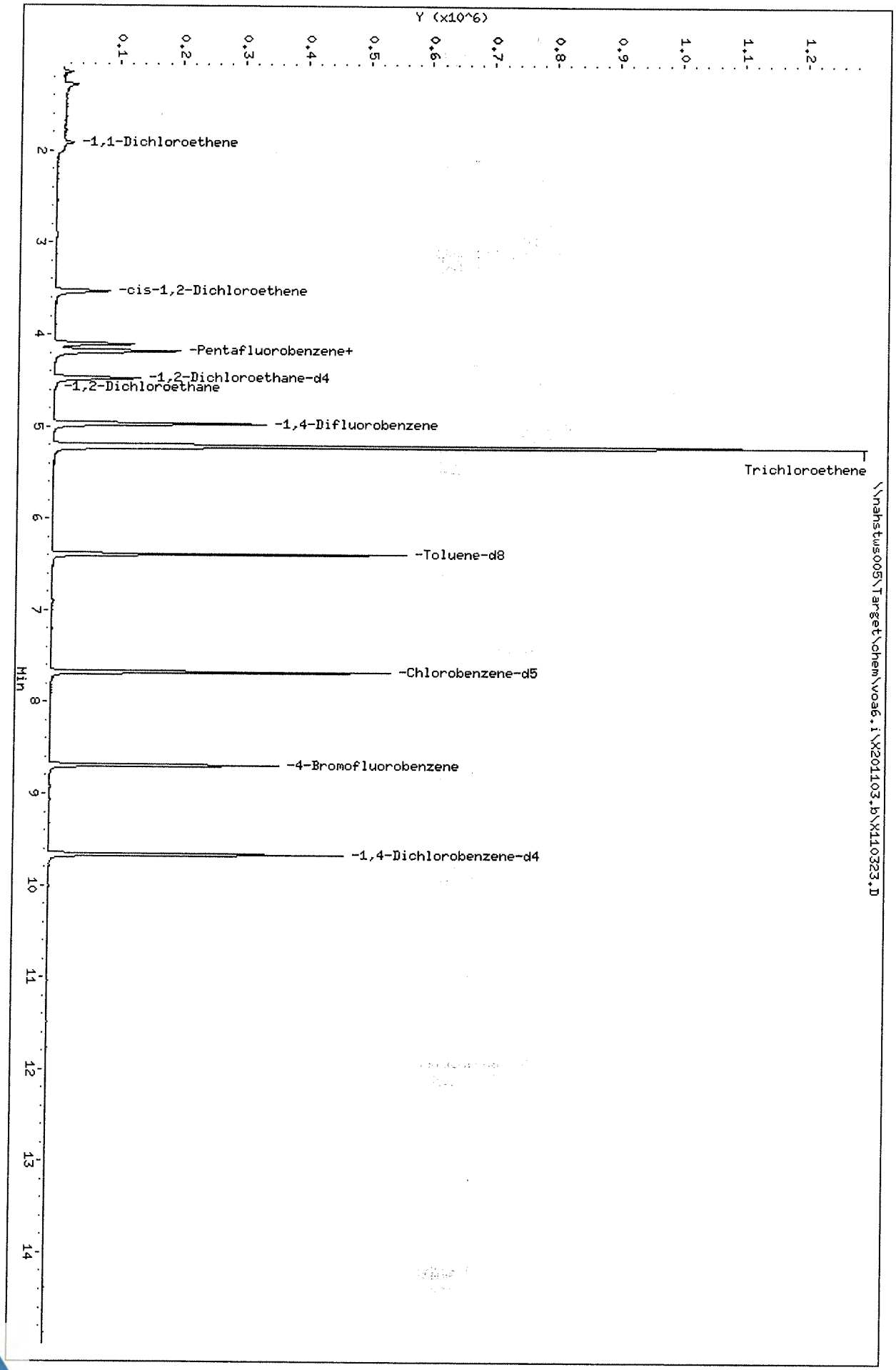
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	137228	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	242556	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	213743	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	91094	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	90087	41.6754	41.67
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	87673	46.3334	46.33
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	77949	42.1787	42.17
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	291220	51.0101	51.01
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	3925	1.51597	1.51(a)
33 1,2-Dichloroethane	62	4.576	4.562	(0.921)	1734	0.66300	0.66(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	39379	19.5676	19.56
38 Trichloroethene	130	5.206	5.206	(1.048)	350675	216.949	216.94(A)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	8550	2.81980	2.81(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D
Date : 03-NOV-2020 19:42
Client ID: HS20101123-01
Sample Info: HS20101123-01;HS20101123-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D

Date : 03-NOV-2020 19:42

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

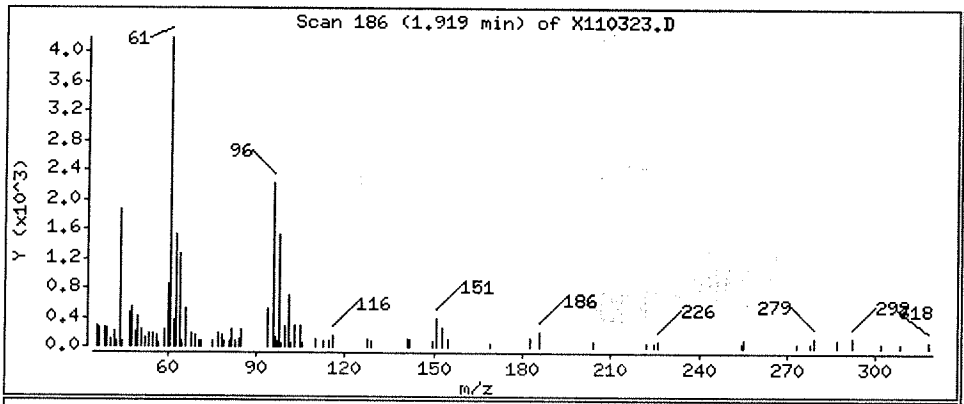
Operator: PC

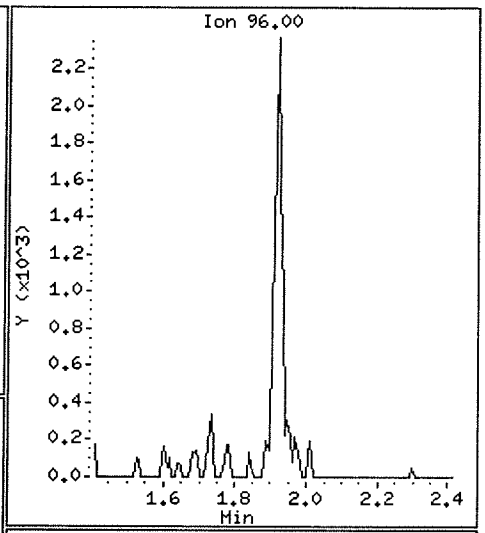
Column phase: DB624

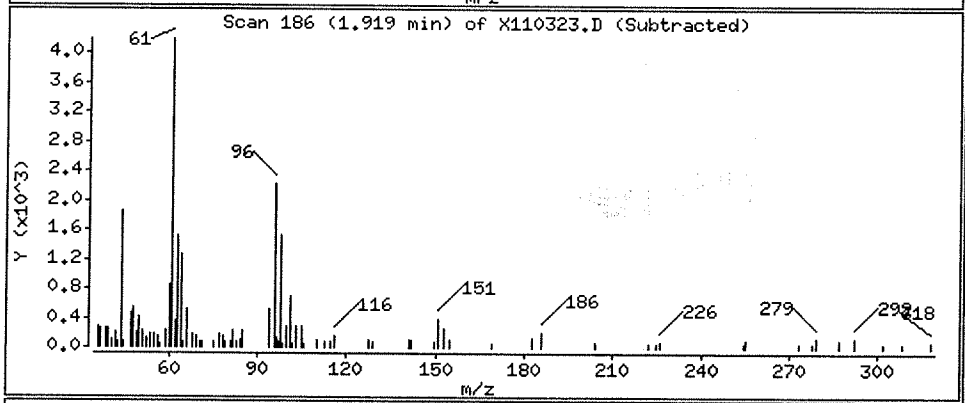
Column diameter: 0.18

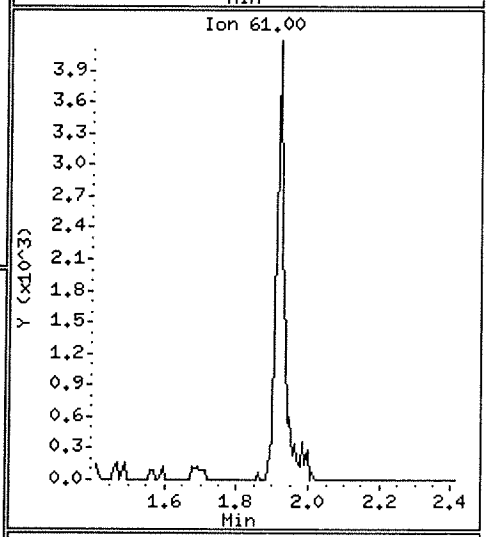
11 1,1-Dichloroethene

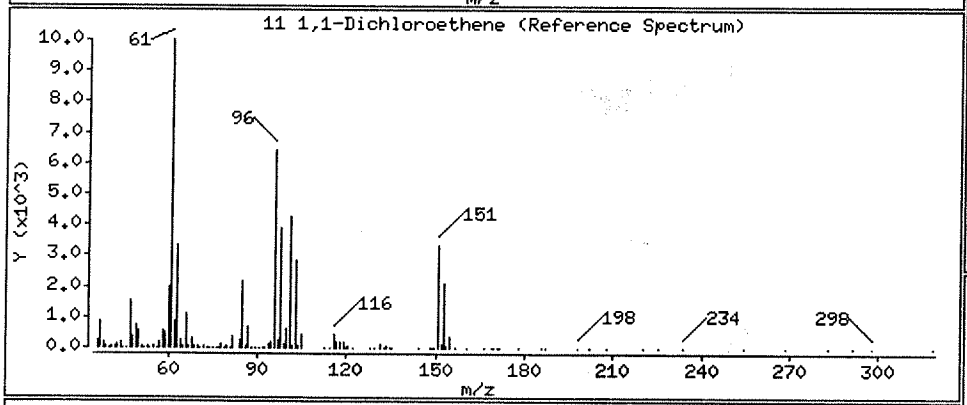
Concentration: 1.51 ug/l

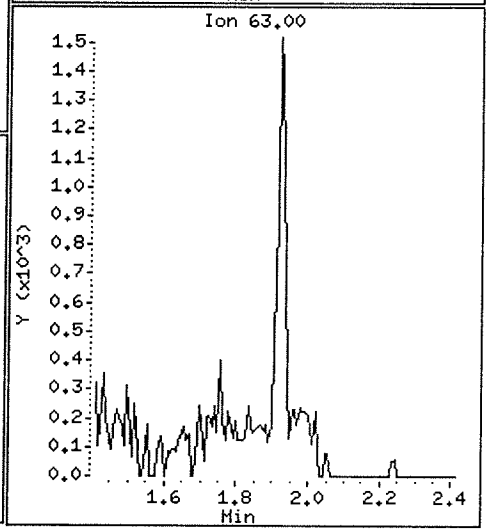


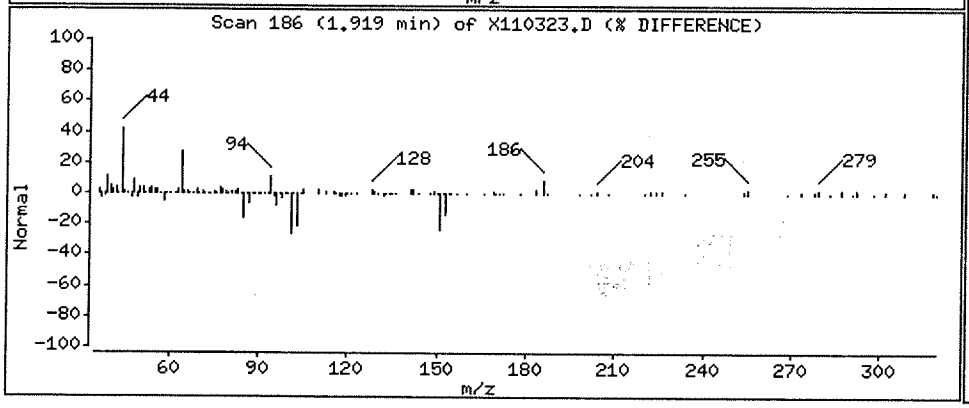












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D

Date : 03-NOV-2020 19:42

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

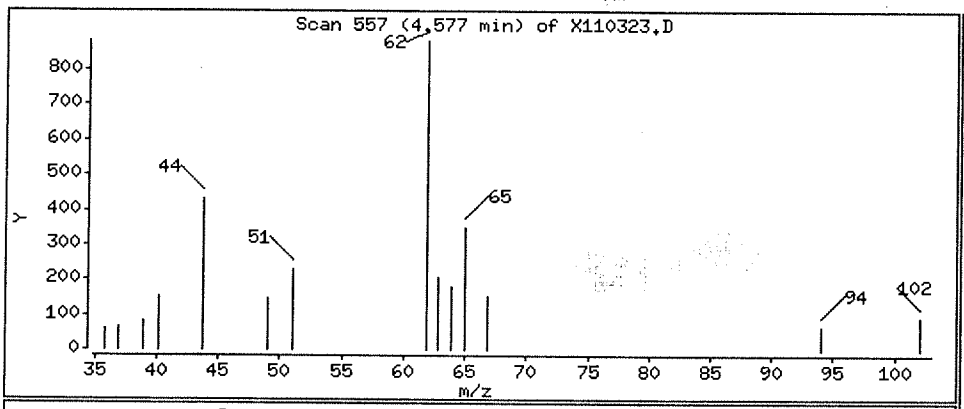
Operator: PC

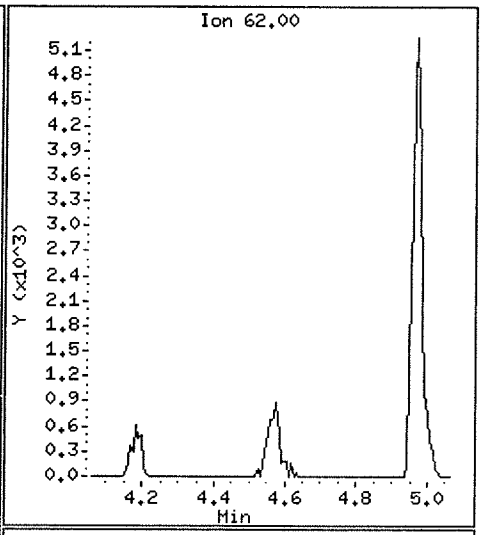
Column phase: DB624

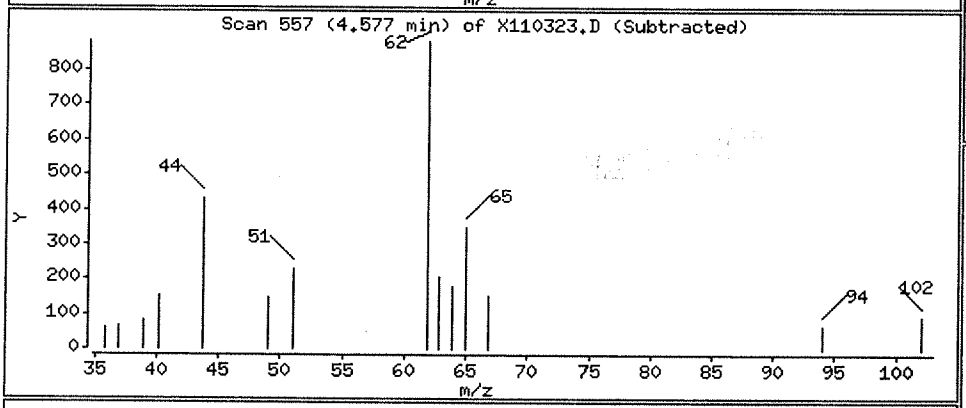
Column diameter: 0.18

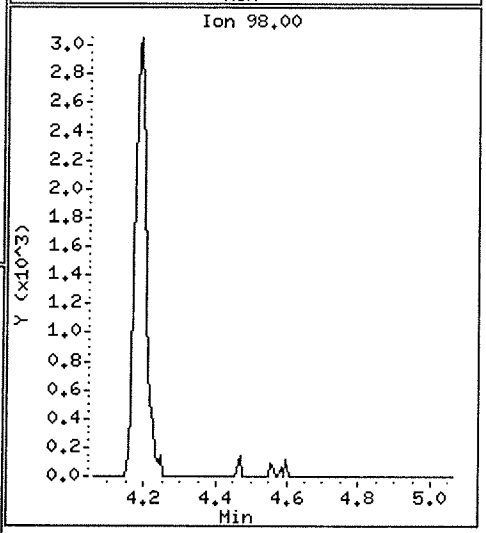
33 1,2-Dichloroethane

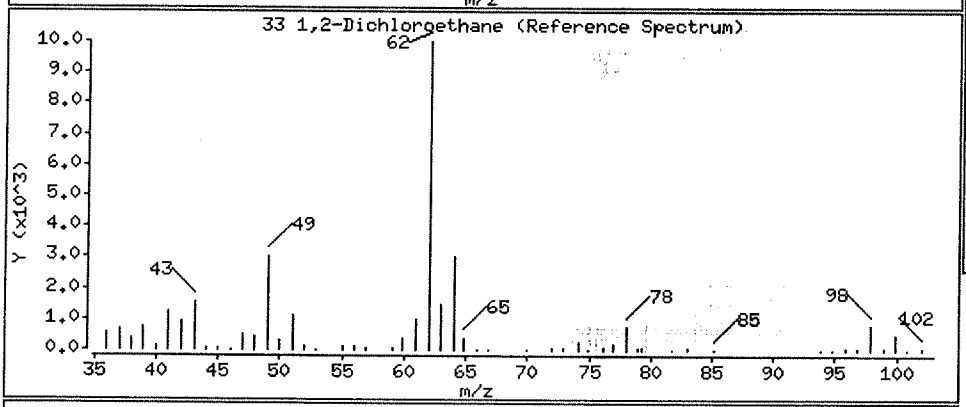
Concentration: 0.66 ug/l

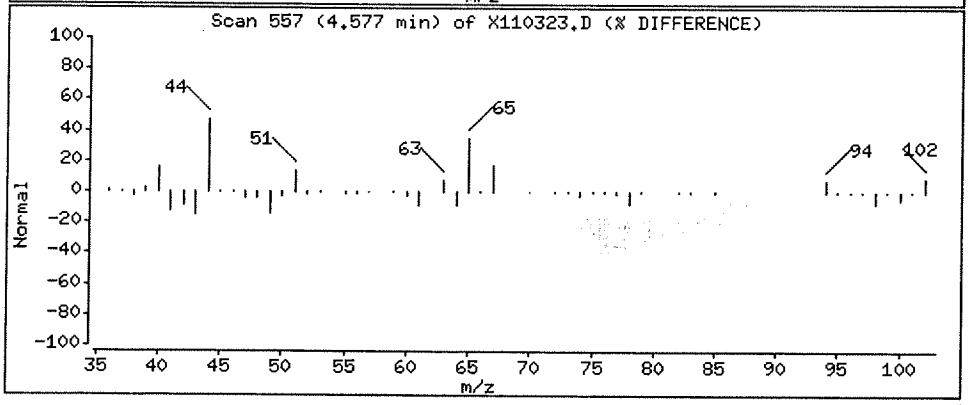












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D

Date : 03-NOV-2020 19:42

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

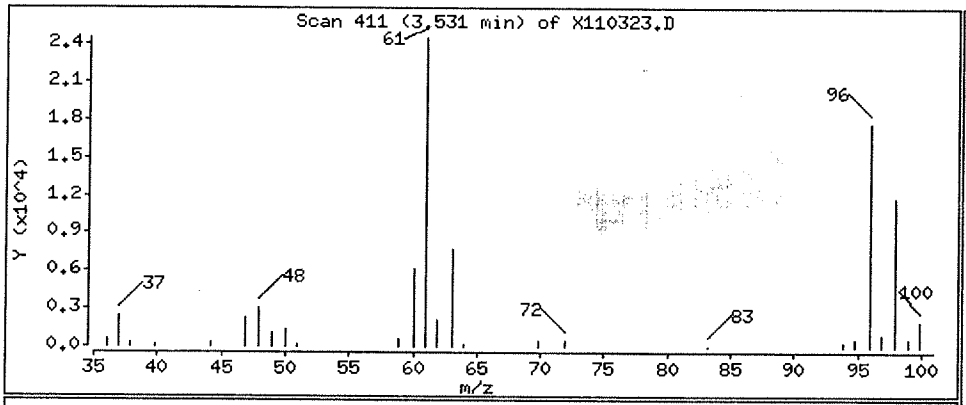
Operator: PC

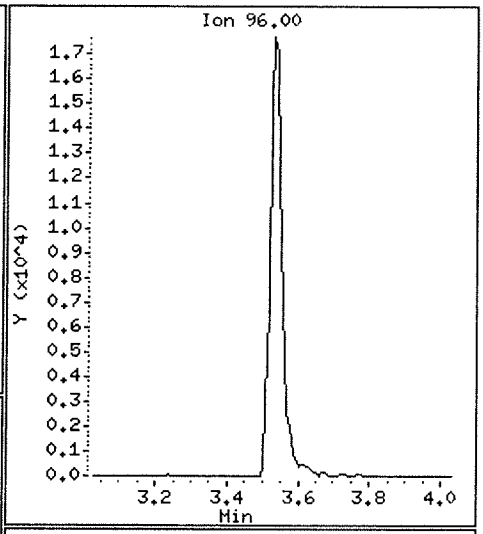
Column phase: DB624

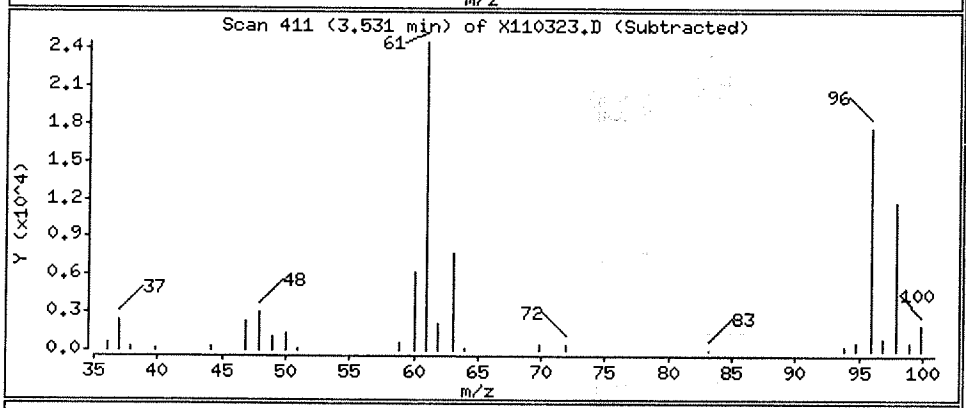
Column diameter: 0.18

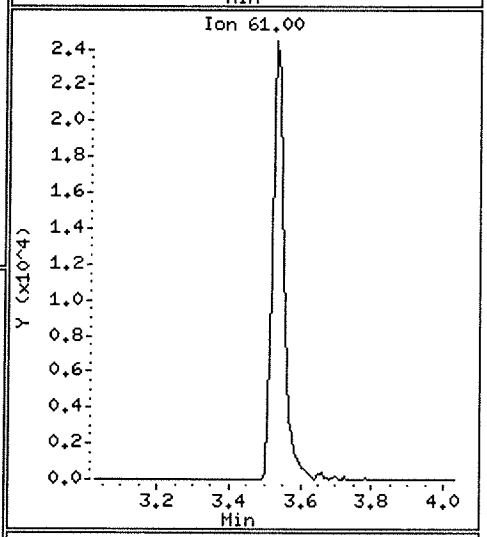
27 cis-1,2-Dichloroethene

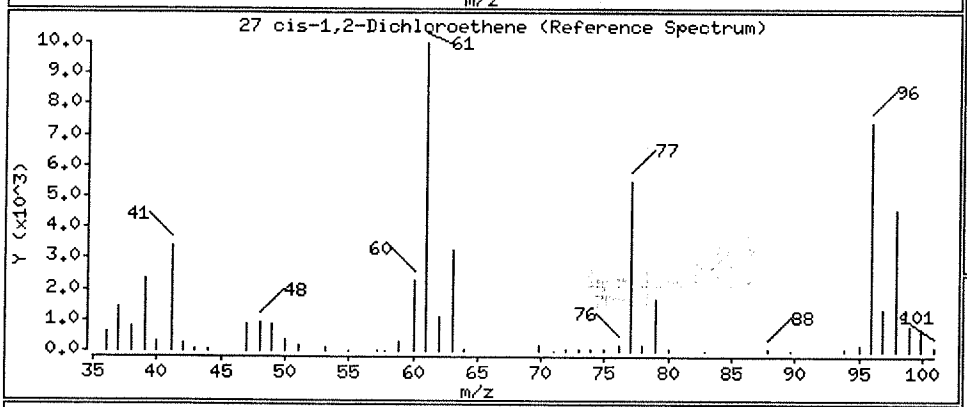
Concentration: 19.56 ug/l

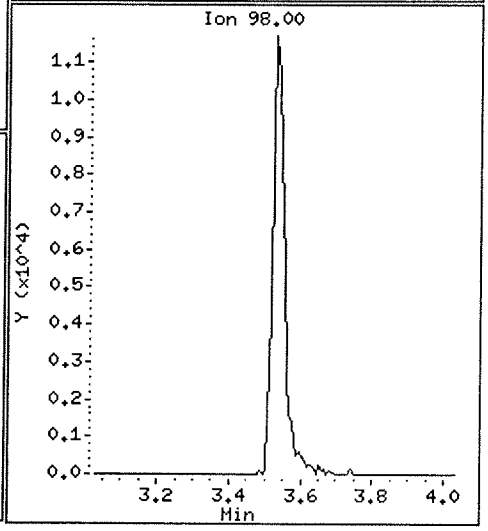


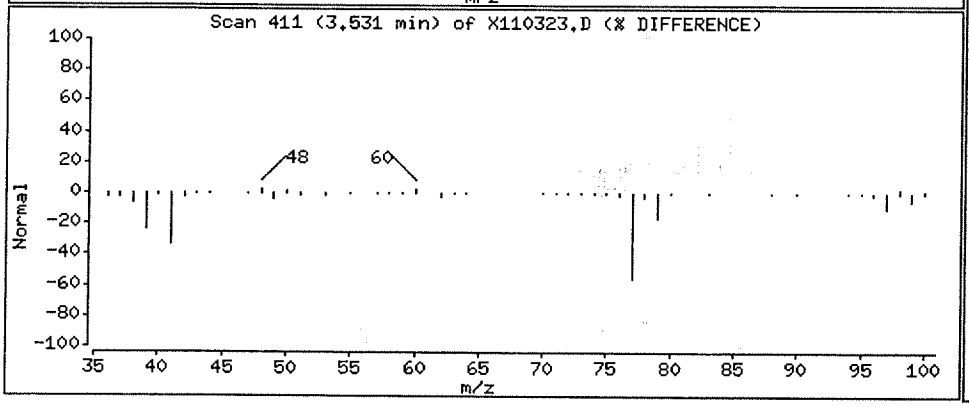












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D

Date : 03-NOV-2020 19:42

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

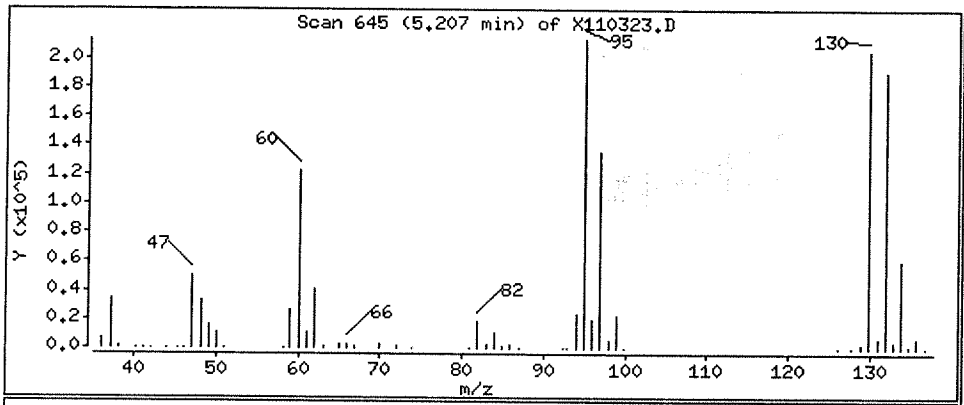
Operator: PC

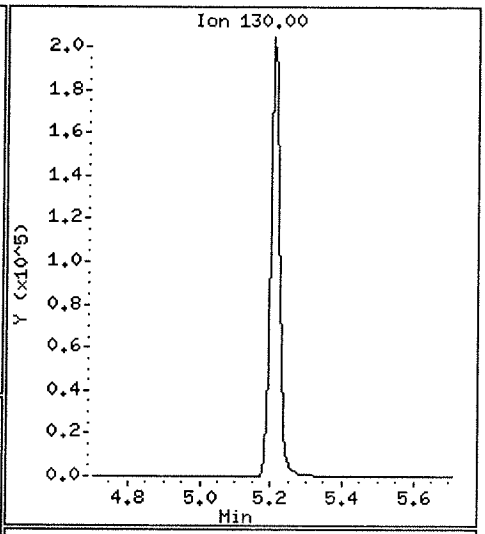
Column phase: DB624

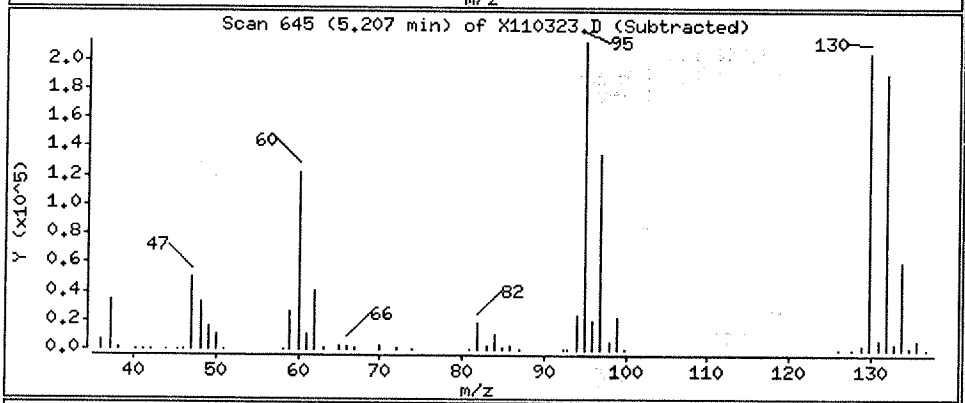
Column diameter: 0.18

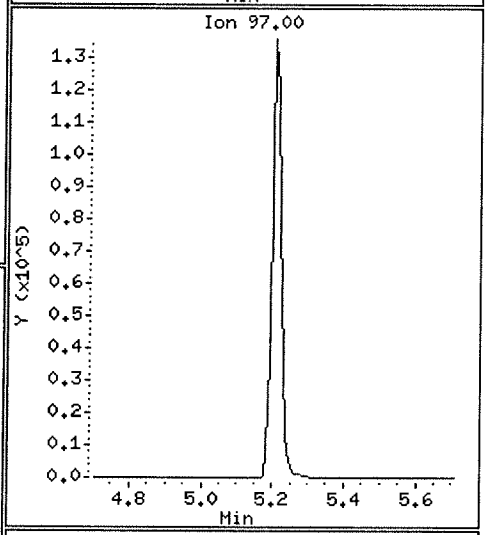
38 Trichloroethene

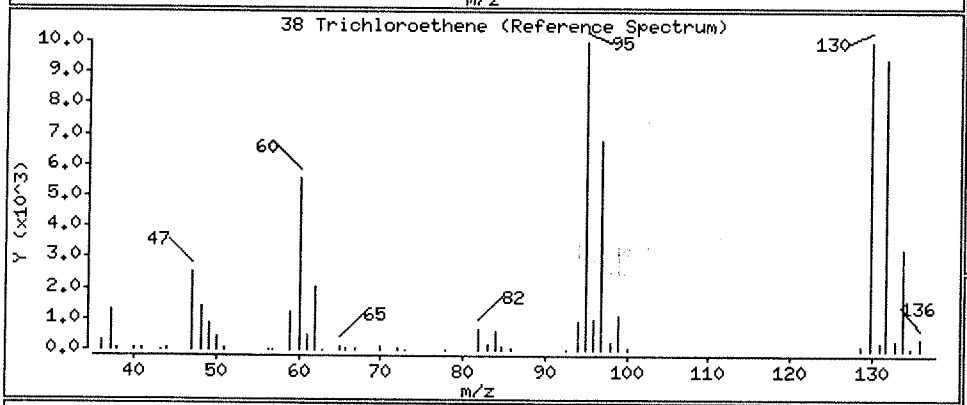
Concentration: 216.94 ug/l

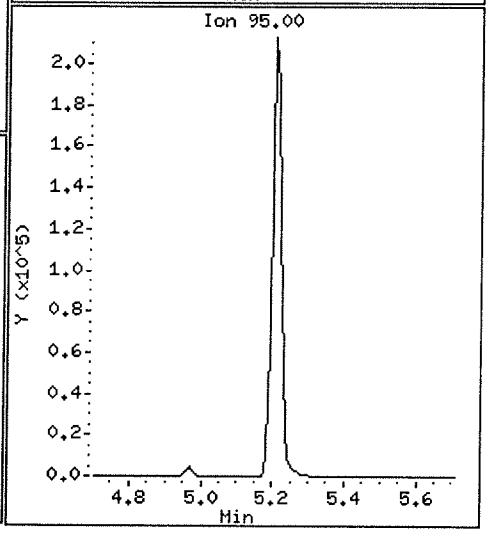


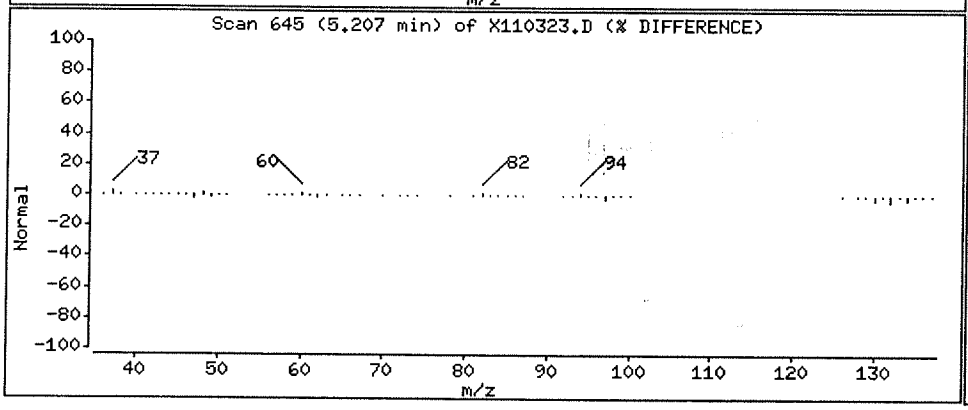












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110323.D

Date : 03-NOV-2020 19:42

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

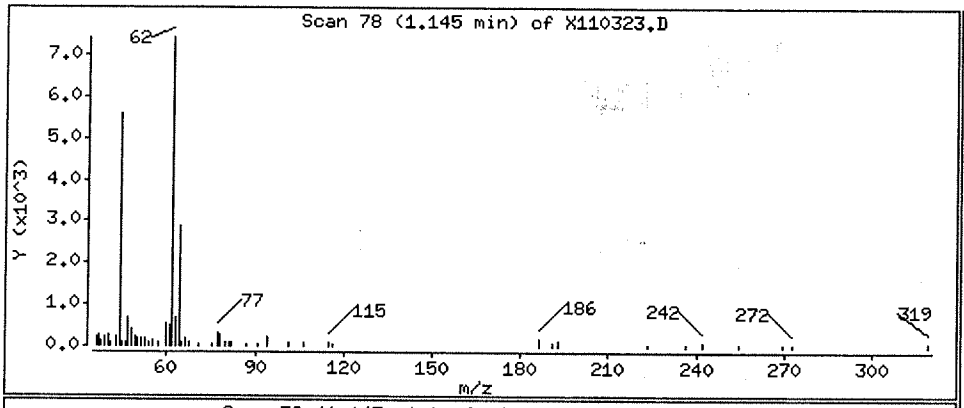
Operator: PC

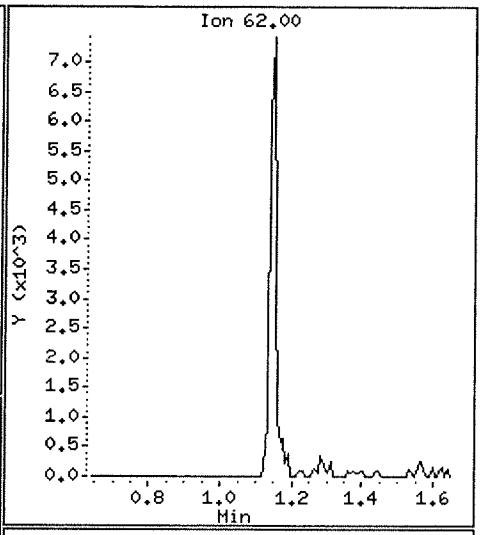
Column phase: DB624

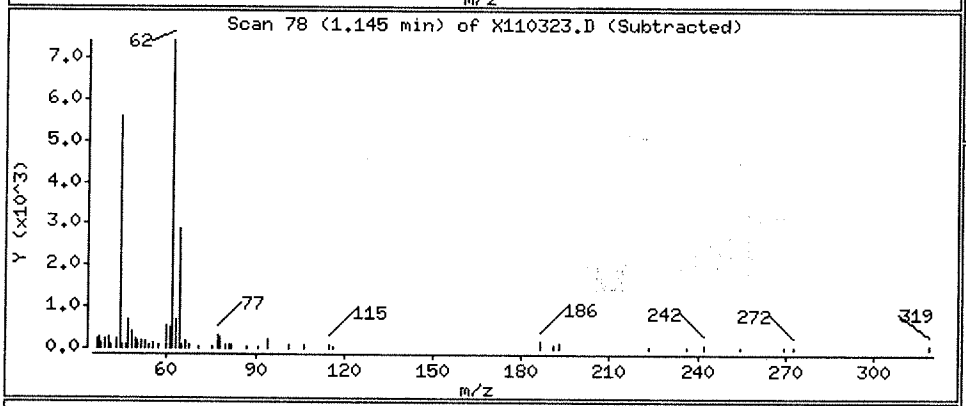
Column diameter: 0.18

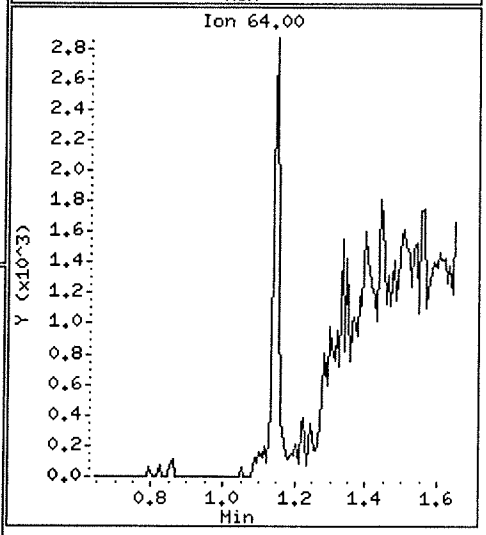
5 Vinyl Chloride

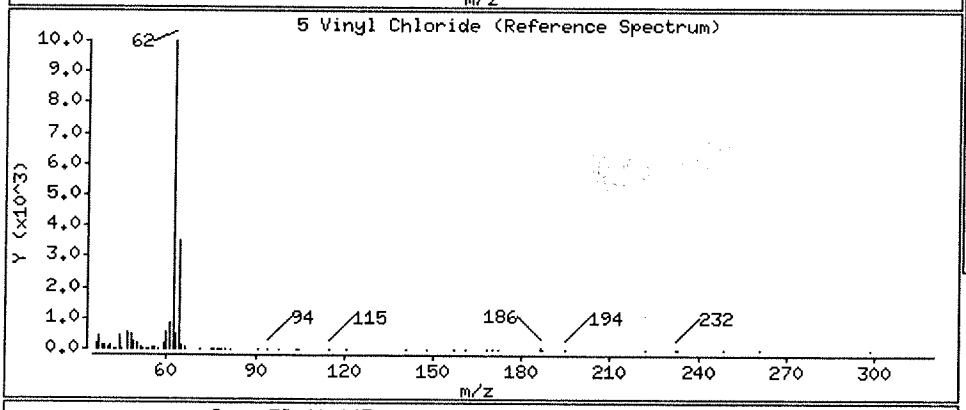
Concentration: 2.81 ug/l

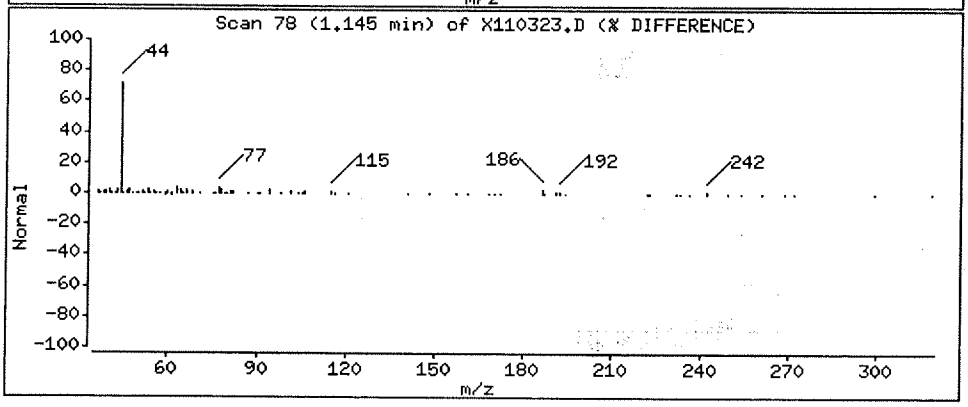












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110324.D Page 1
Report Date: 30-Nov-2020 15:20

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110324.D
Lab Smp Id: HS20101123-01MS Client Smp ID: HS20101123-01MS
Inj Date : 03-NOV-2020 20:04
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-01MS;HS20101123-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:18 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 25 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

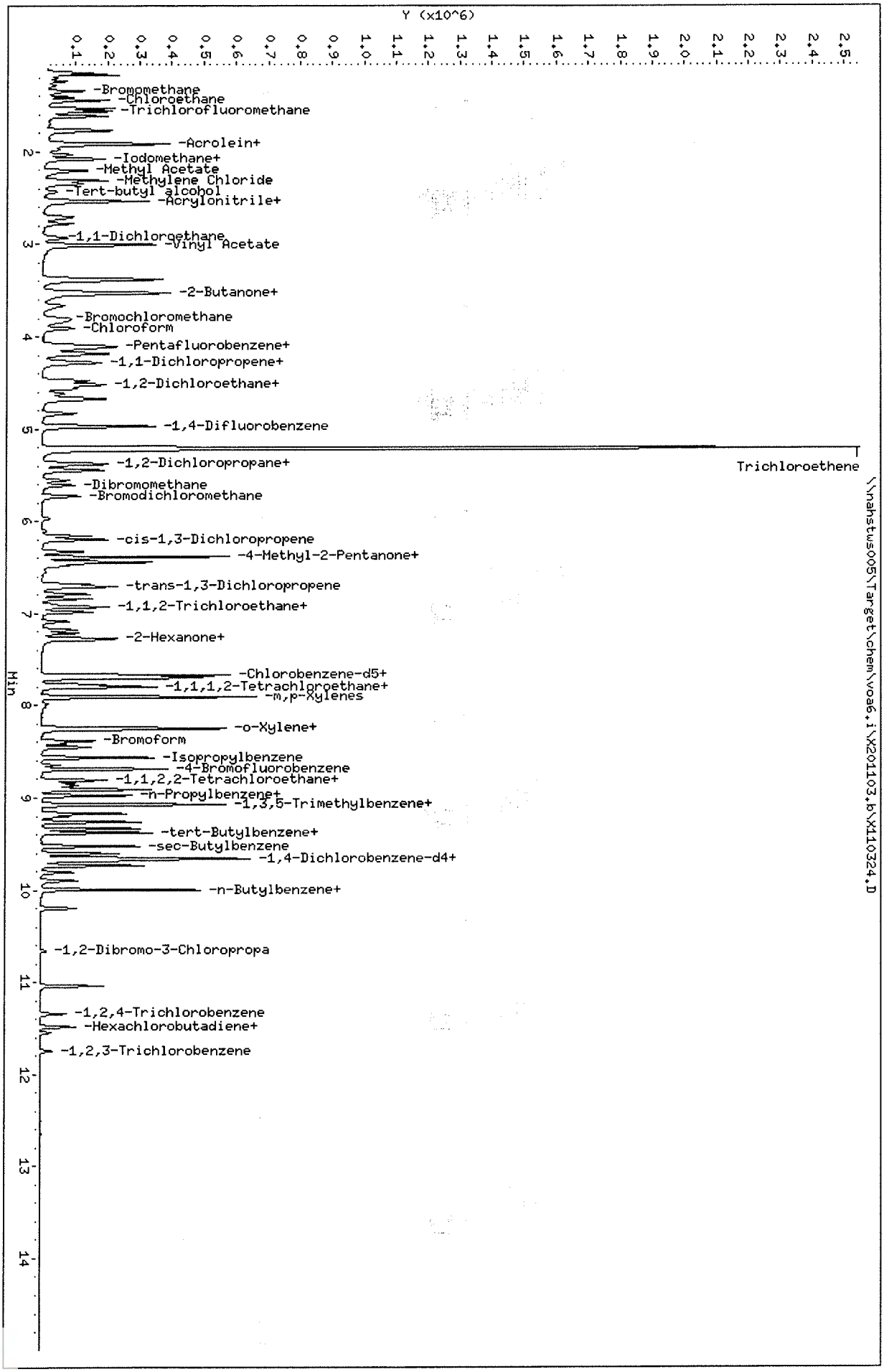
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	142531	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	246577	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	223589	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	94097	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	102842	45.6654	45.66
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	93666	47.2843	47.28
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	84726	44.1400	44.13
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	300432	50.3063	50.30
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	34992	25.3738	25.37
11 1,1-Dichloroethene	96	1.919	1.911	(0.458)	67182	24.9826	24.98
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	63861	24.0193	24.01
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	149152	71.3569	71.35
17 Methylene Chloride	84	2.305	2.305	(0.550)	39419	20.1433	20.14
38 Trichloroethene	130	5.206	5.206	(1.048)	665536	405.026	405.02(A)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	93169	29.5841	29.58

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110324.D
Date : 03-NOV-2020 20:04
Client ID: HS20101123-01MS
Sample Info: HS20101123-01MS;HS20101123-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110325.D Page 1
Report Date: 30-Nov-2020 15:20

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110325.D
Lab Smp Id: HS20101123-01MSD Client Smp ID: HS20101123-01MSD
Inj Date : 03-NOV-2020 20:25
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-01MSD;HS20101123-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:18 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 25 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

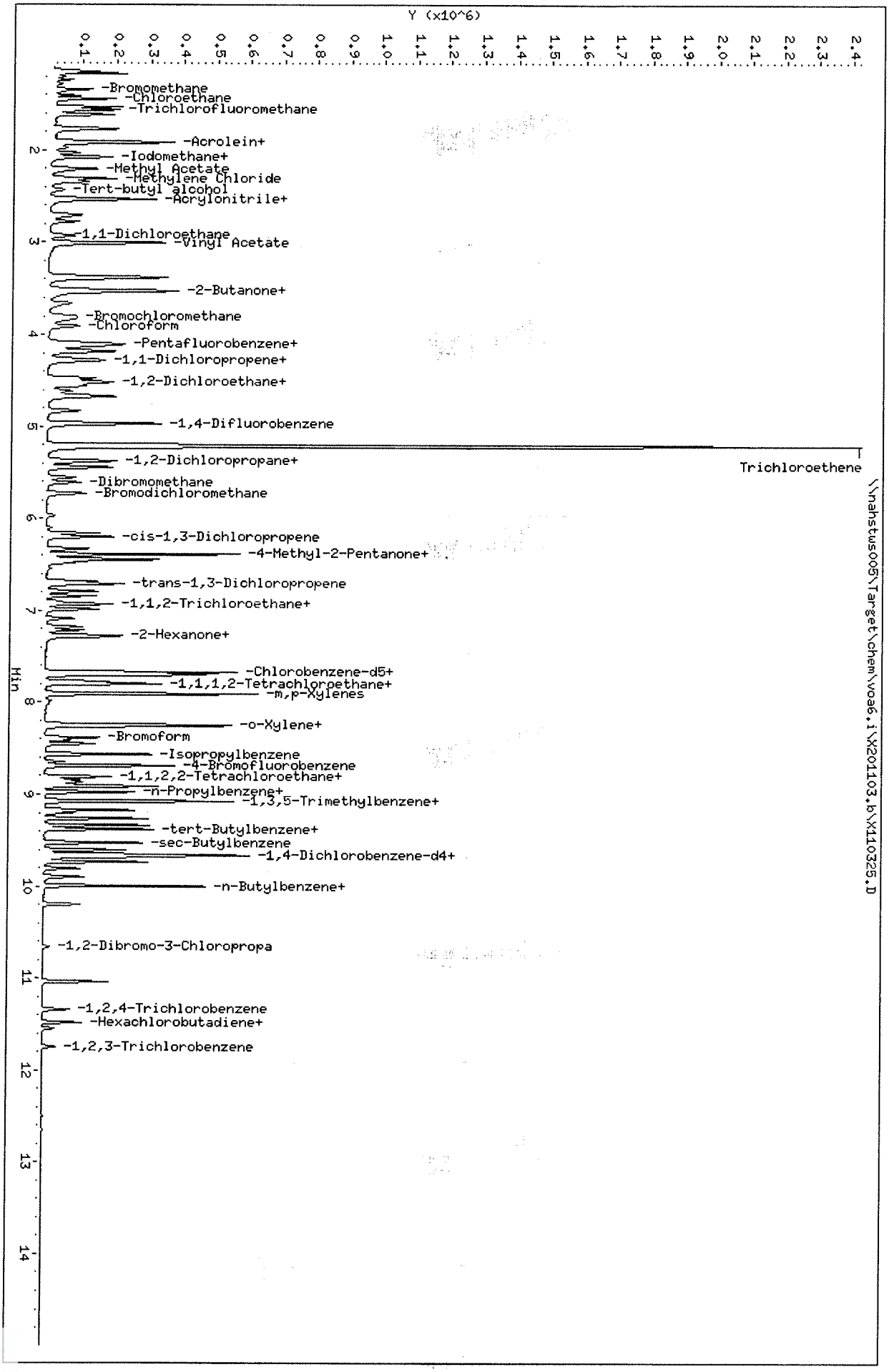
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	136956	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	245407	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	217279	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	90157	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	97791	45.2067	45.20
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	92380	47.9632	47.96
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	83379	45.2065	45.20
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	289225	49.8362	49.83
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	31755	23.6953	23.69
11 1,1-Dichloroethene	96	1.919	1.911	(0.458)	61773	23.9063	23.90
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	63735	24.0862	24.08
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	146297	72.8401	72.84
17 Methylene Chloride	84	2.305	2.305	(0.550)	38080	20.2512	20.25
38 Trichloroethene	130	5.206	5.206	(1.048)	627829	383.900	383.90(A)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	88463	29.2332	29.23

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110325.D
Date : 03-NOV-2020 20:25
Client ID: HS20101123-01HSD
Sample Info: HS20101123-01HSD;HS20101123-01HSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D Page 1
Report Date: 30-Nov-2020 15:17

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D
Lab Smp Id: HS20101123-01 Client Smp ID: HS20101123-01
Inj Date : 03-NOV-2020 20:46
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-01;HS20101123-01;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:13 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 26
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

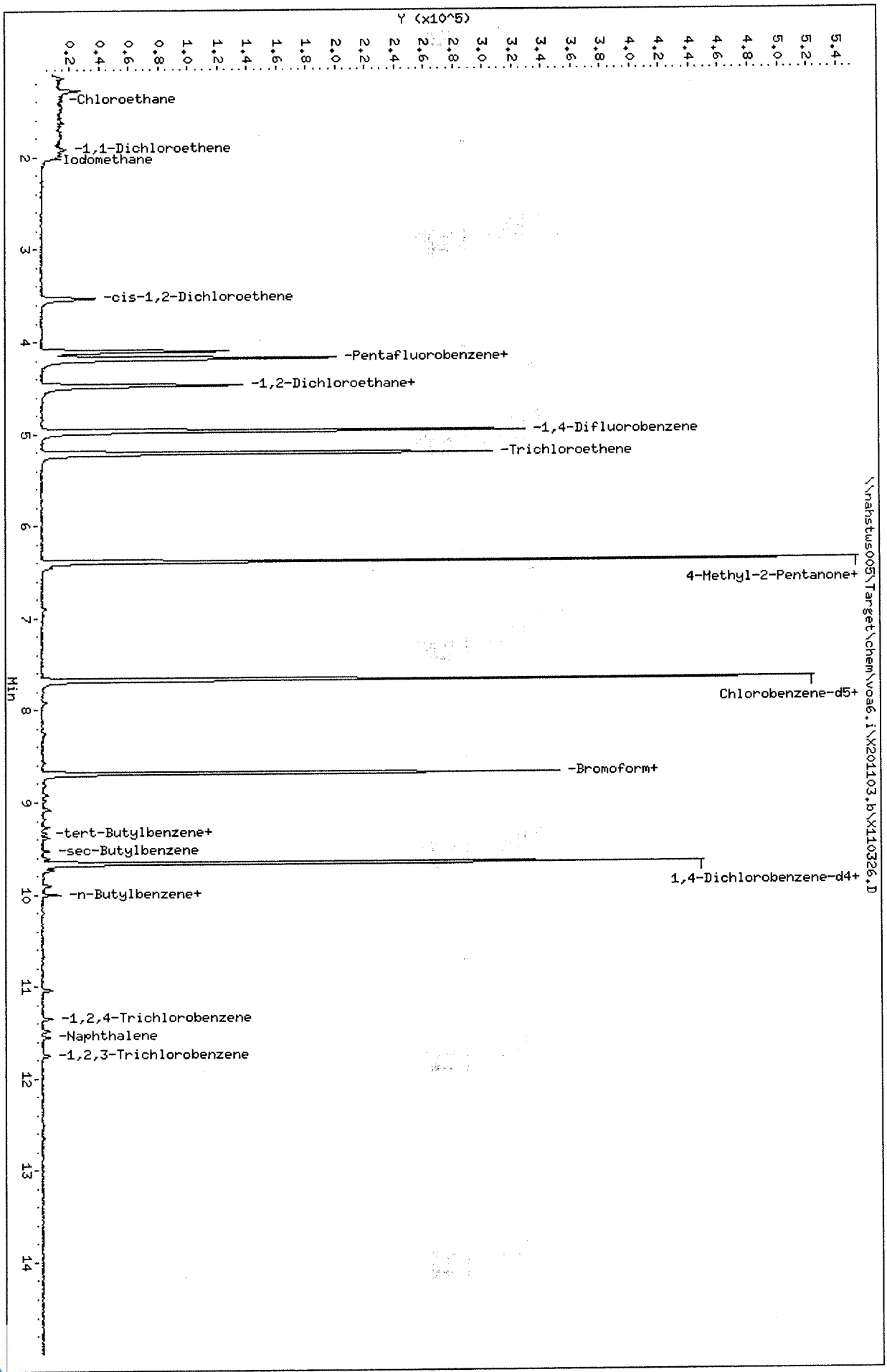
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	137278	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	239065	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	212462	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	83438	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	92787	42.8704	42.87
$	69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	86266	45.8816	45.88
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	77882	42.1270	42.12
$	48 Toluene-d8	98	6.388	6.388	(0.833)	287212	50.6113	50.61
	11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	1675	0.64671	3.23(a)
	33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	1340	0.51984	2.59(a)
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	17802	8.84268	44.21
	38 Trichloroethene	130	5.214	5.206	(1.049)	85370	53.5862	267.93
	5 Vinyl Chloride	62	1.145	1.145	(0.274)	2967	0.97817	4.89(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\X110326.D
Date : 03-NOV-2020 20:46
Client ID: HS20101123-01
Sample Info: HS20101123-01;HS20101123-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D

Date : 03-NOV-2020 20:46

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

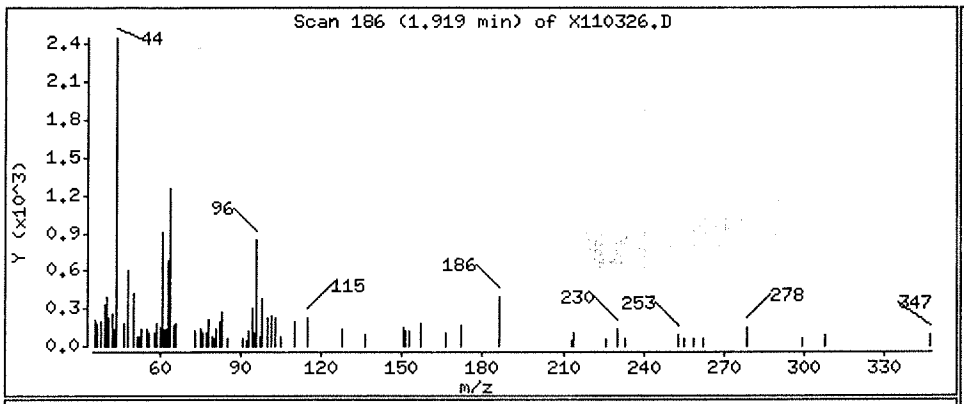
Operator: PC

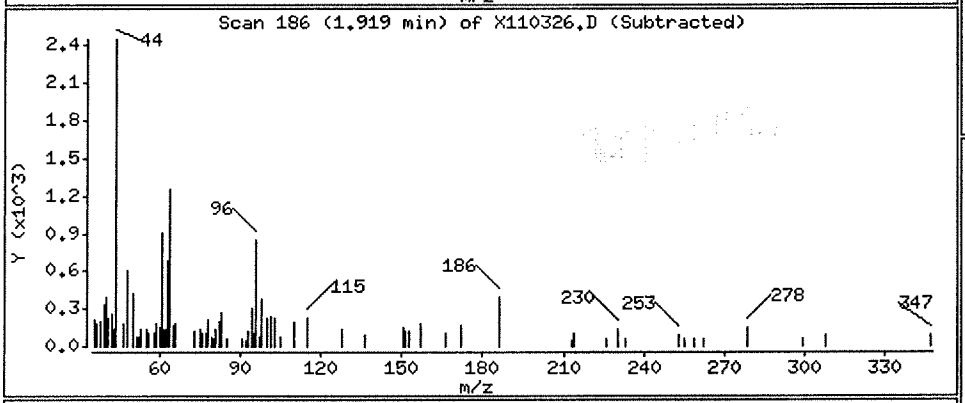
Column phase: DB624

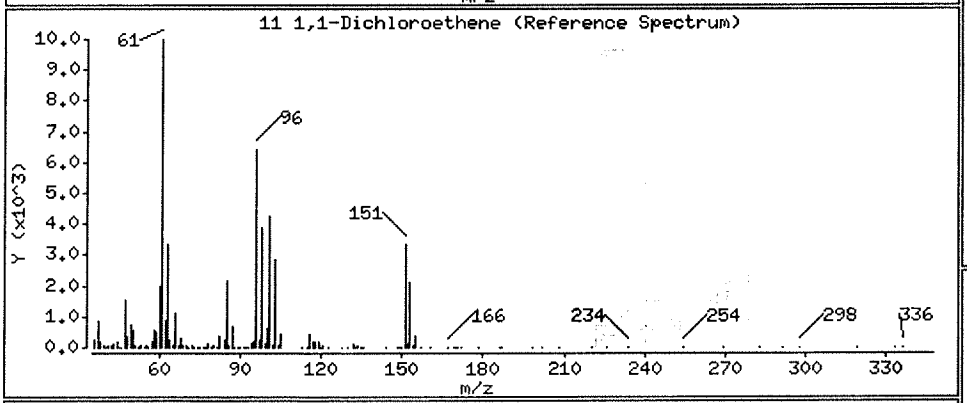
Column diameter: 0.18

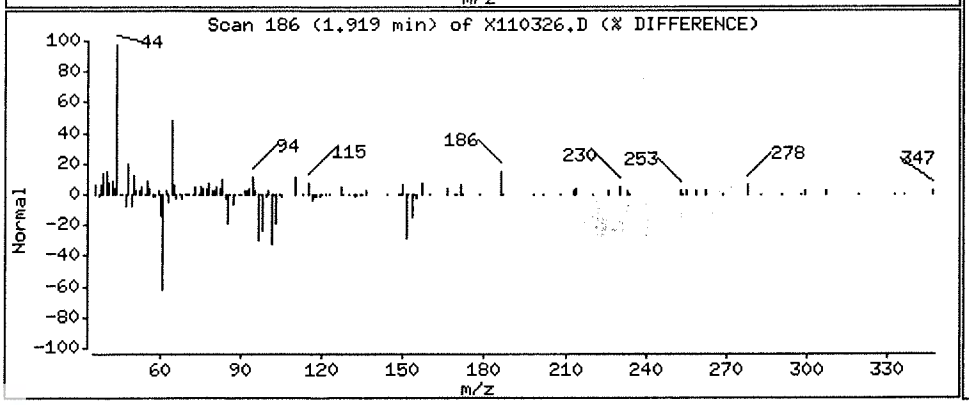
11 1,1-Dichloroethene

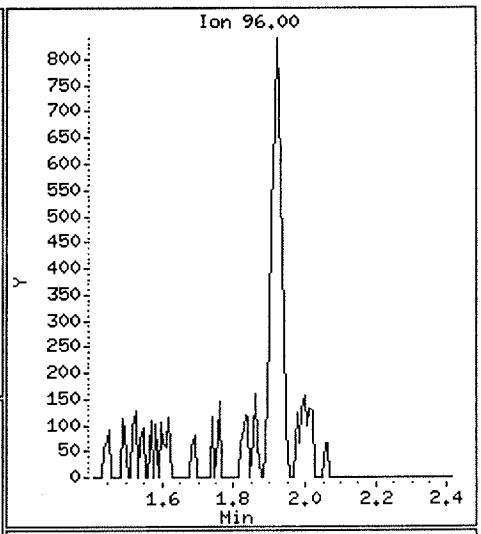
Concentration: 3.23 ug/l

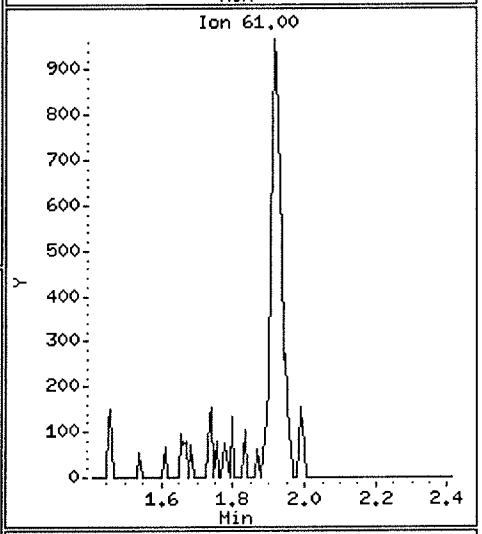


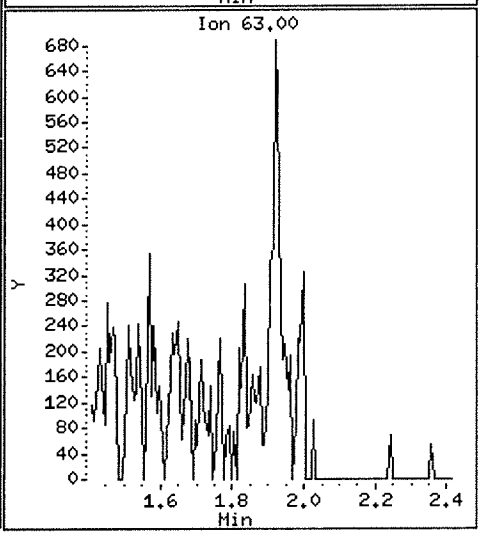












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D

Date : 03-NOV-2020 20:46

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

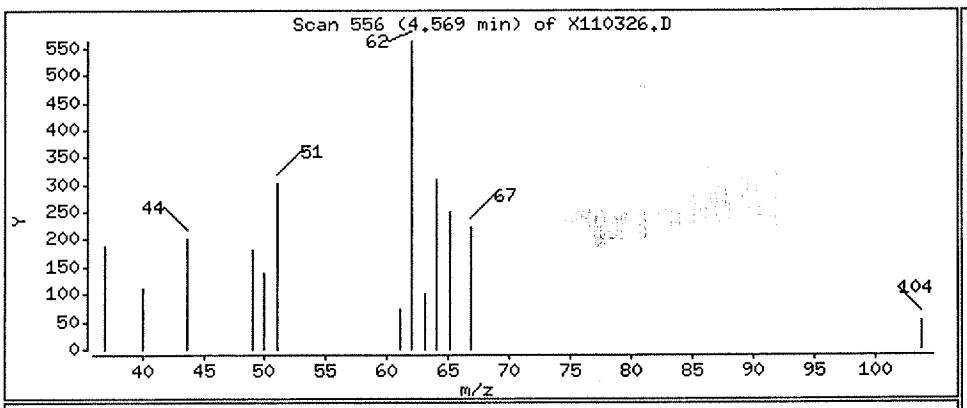
Operator: PC

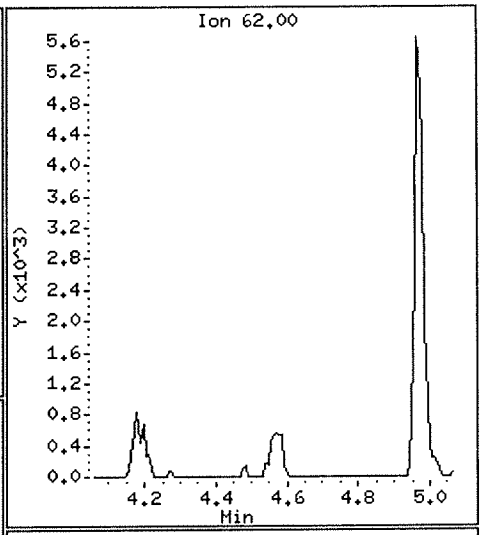
Column phase: DB624

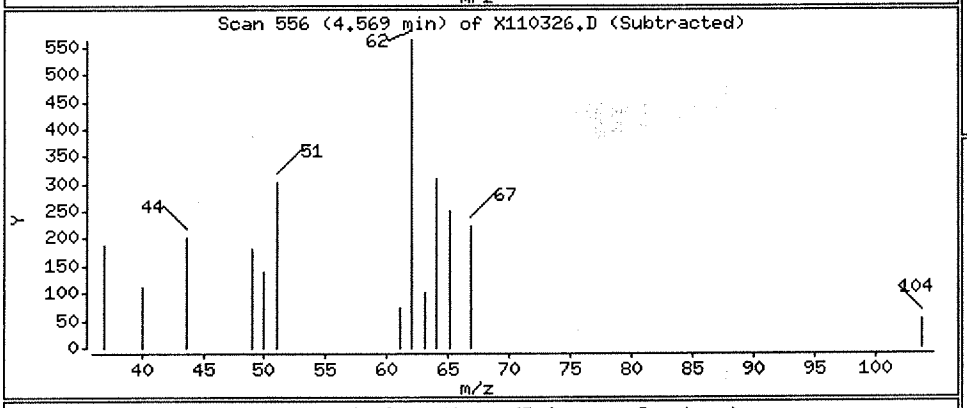
Column diameter: 0.18

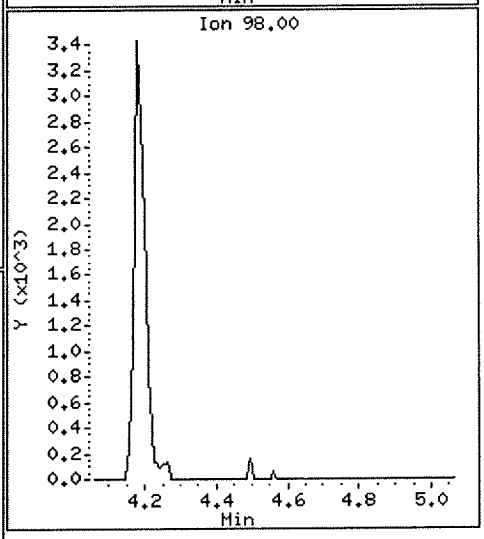
33 1,2-Dichloroethane

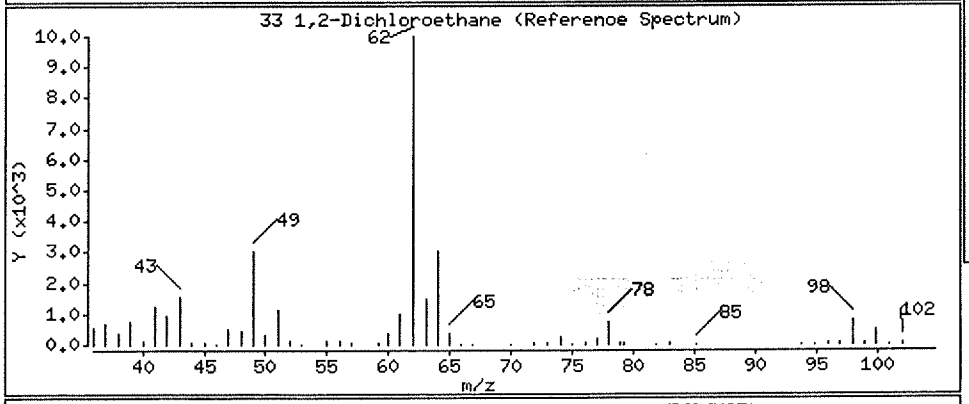
Concentration: 2.59 ug/l

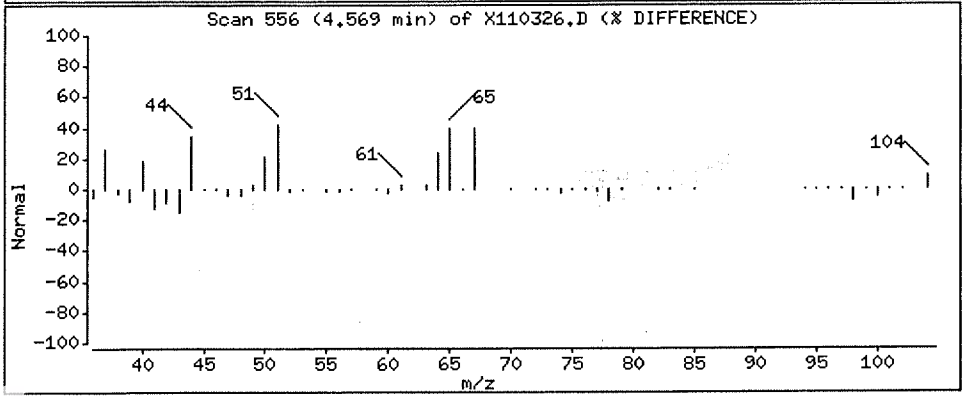












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D

Date : 03-NOV-2020 20:46

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

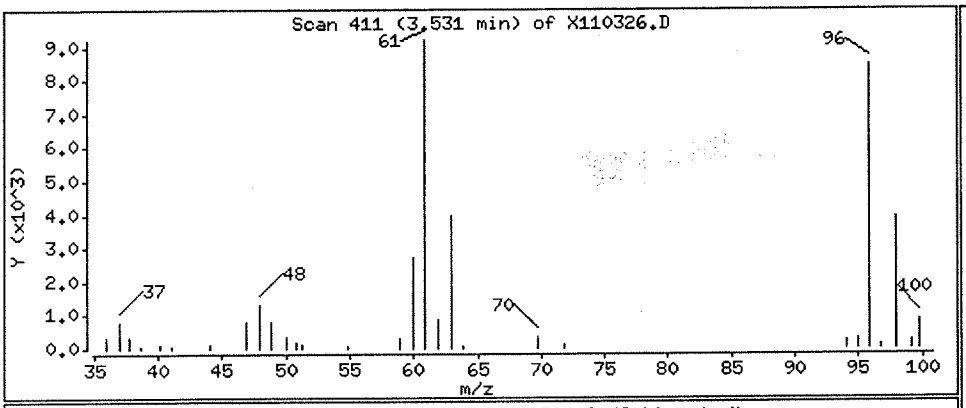
Operator: PC

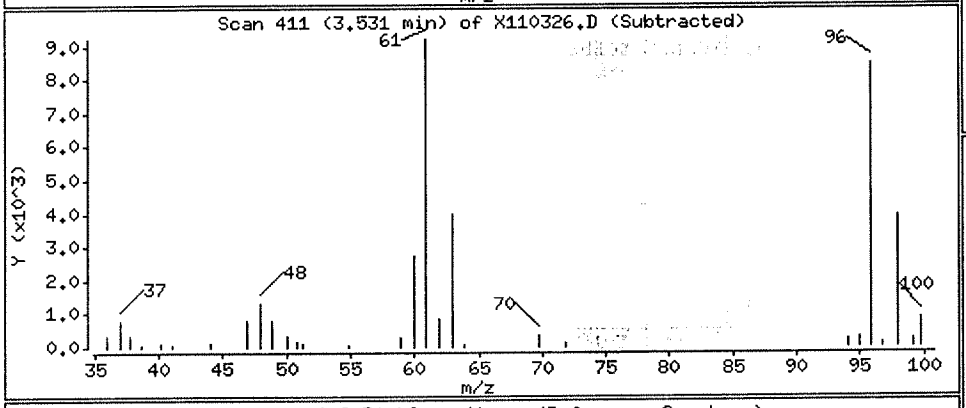
Column phase: DB624

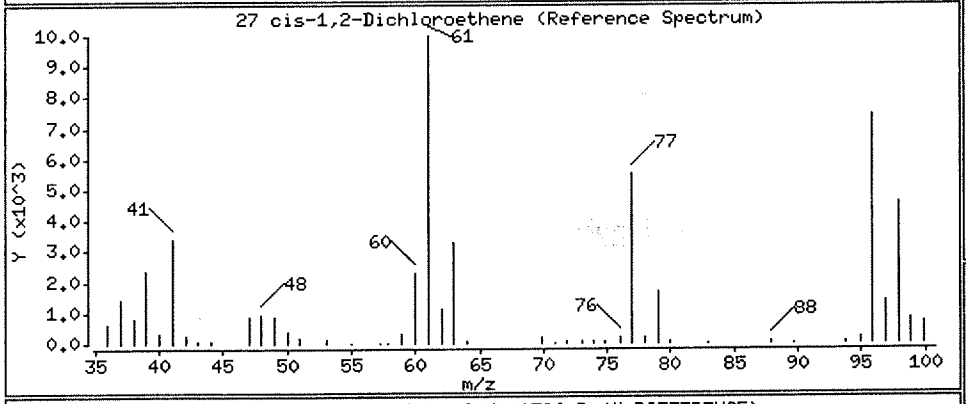
Column diameter: 0.18

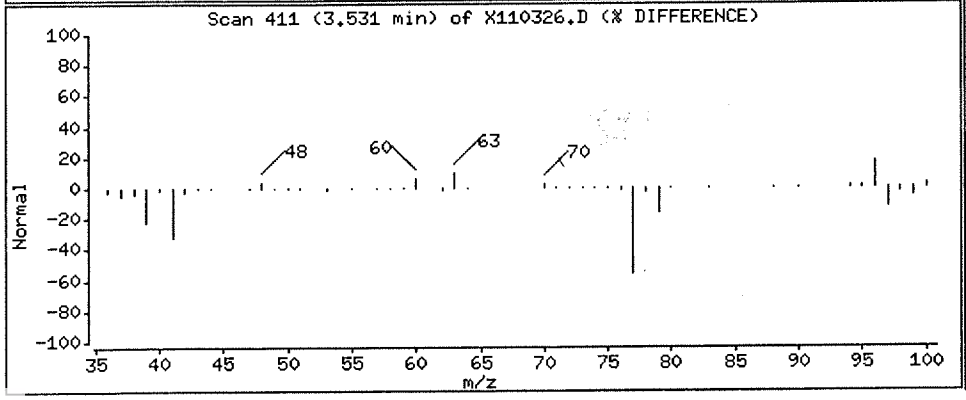
27 cis-1,2-Dichloroethene

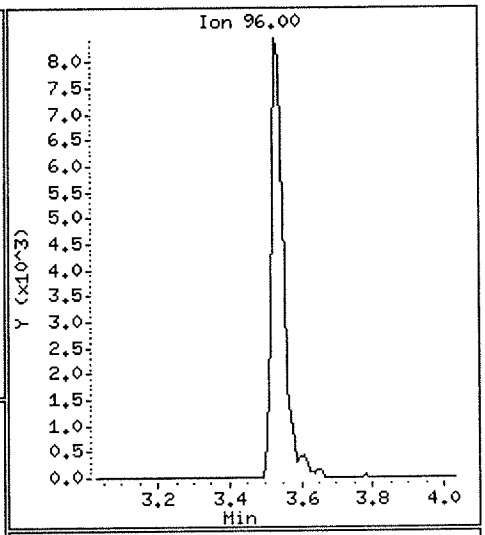
Concentration: 44.21 ug/l

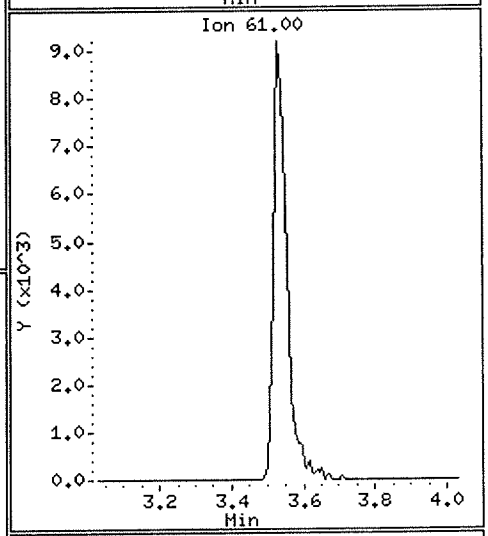


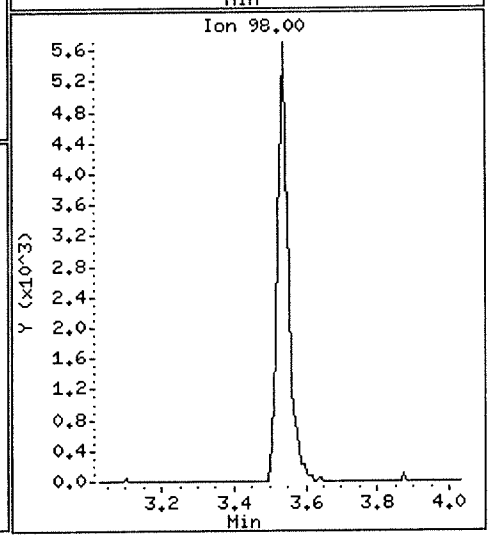












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D

Date : 03-NOV-2020 20:46

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

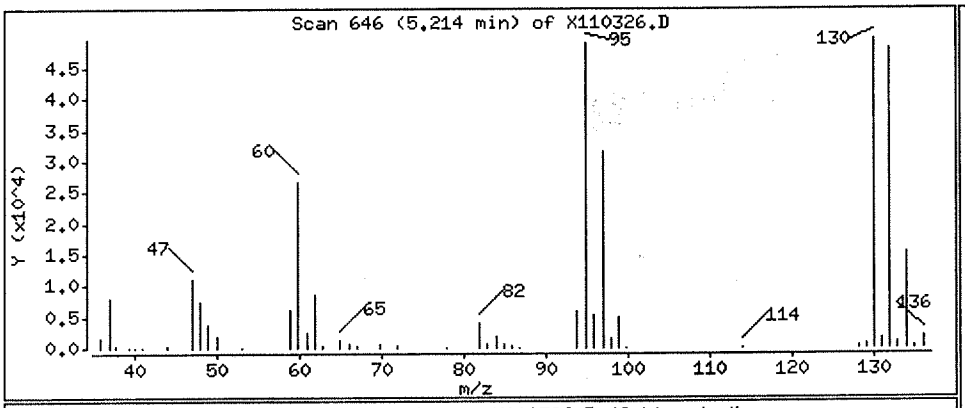
Operator: PC

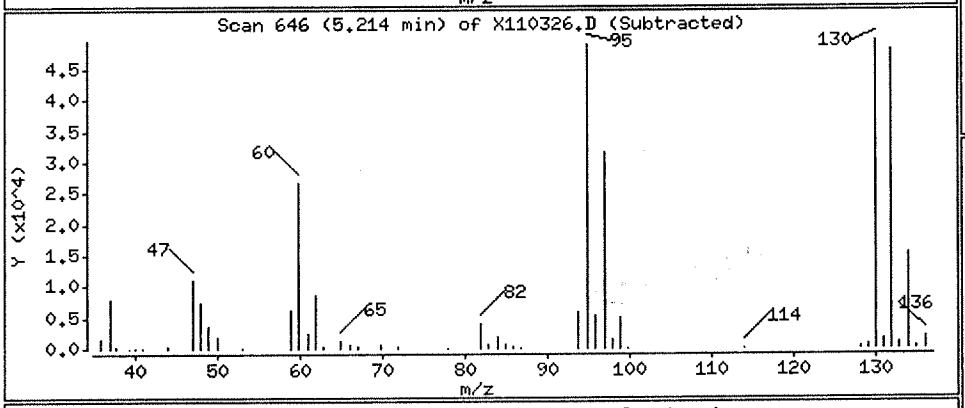
Column phase: DB624

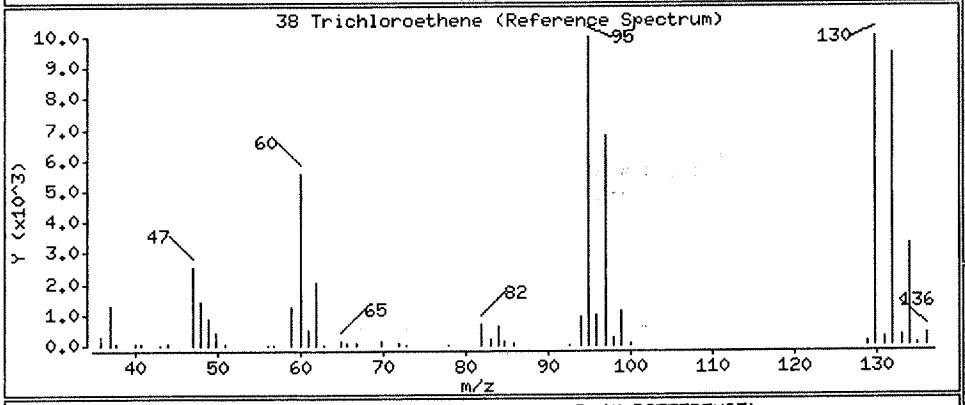
Column diameter: 0.18

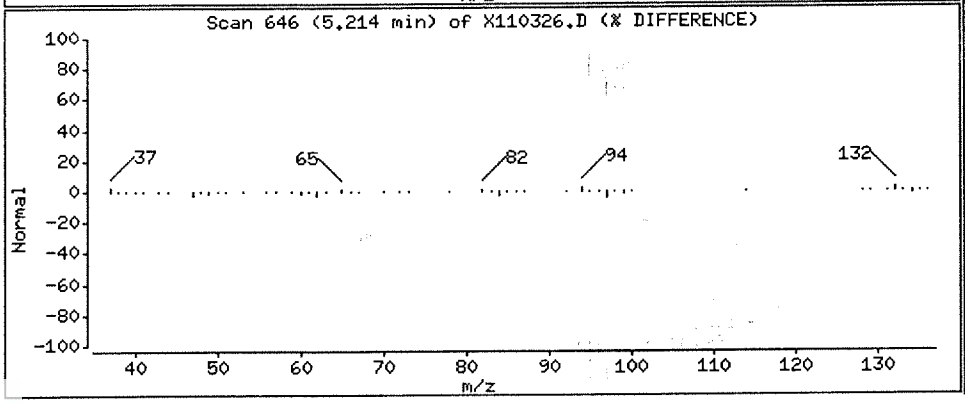
38 Trichloroethene

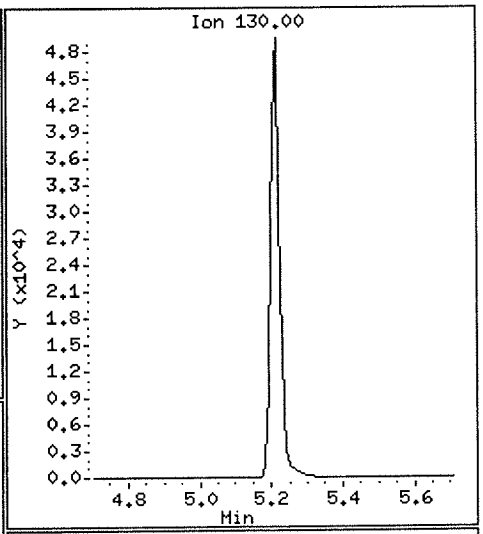
Concentration: 267.93 ug/l

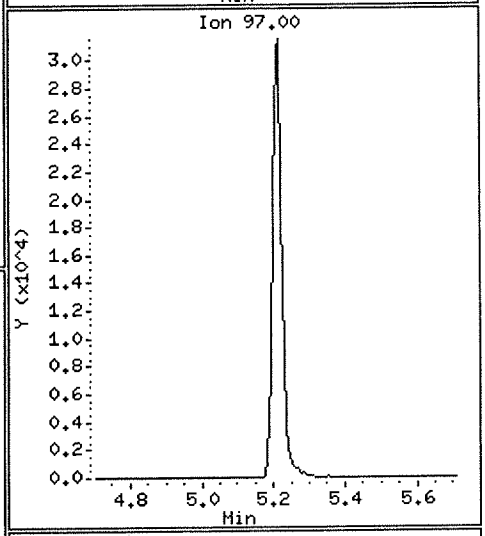


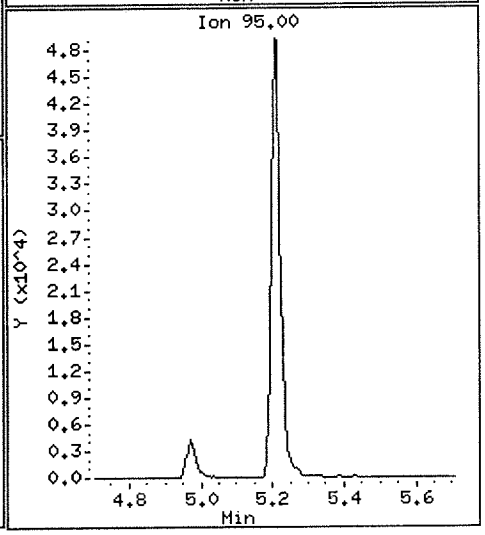












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110326.D

Date : 03-NOV-2020 20:46

Client ID: HS20101123-01

Instrument: voa6.i

Sample Info: HS20101123-01;HS20101123-01;;;

Purge Volume: 5.0

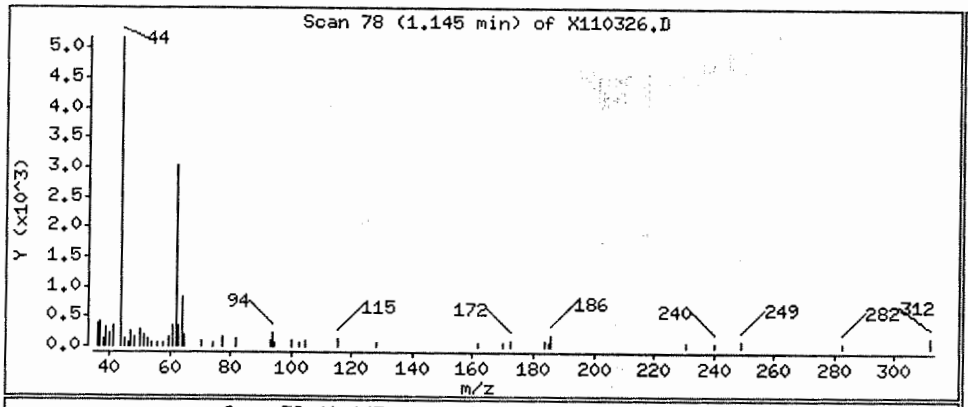
Operator: PC

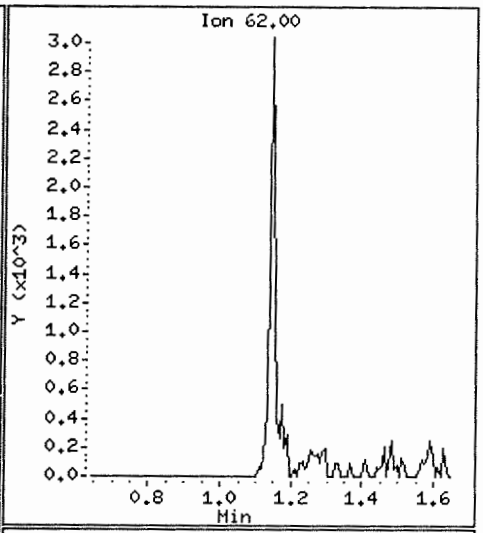
Column phase: DB624

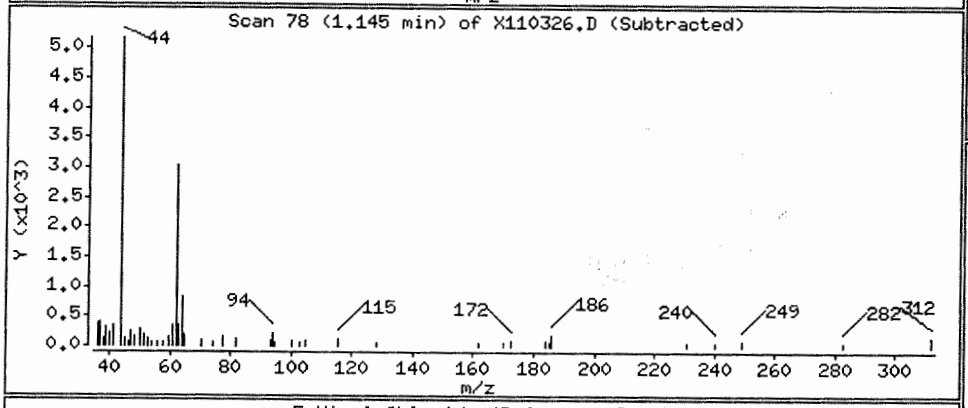
Column diameter: 0.18

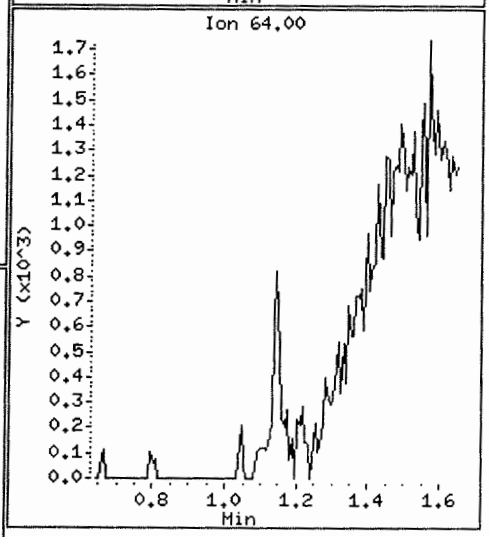
5 Vinyl Chloride

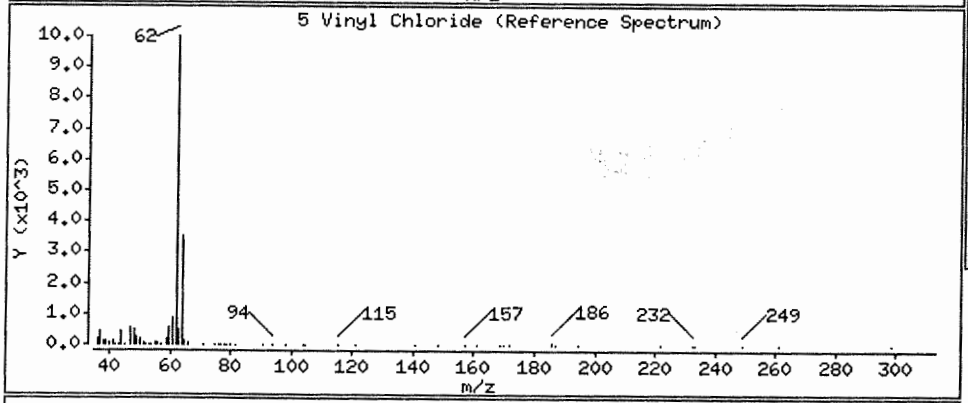
Concentration: 4.89 ug/l

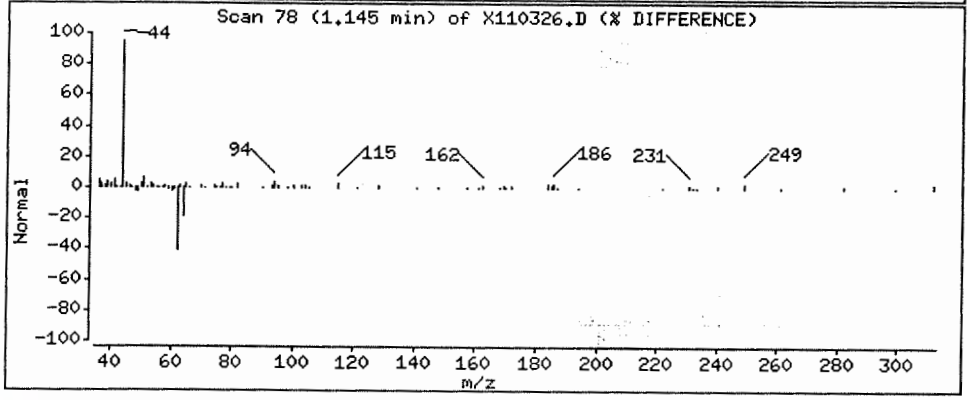


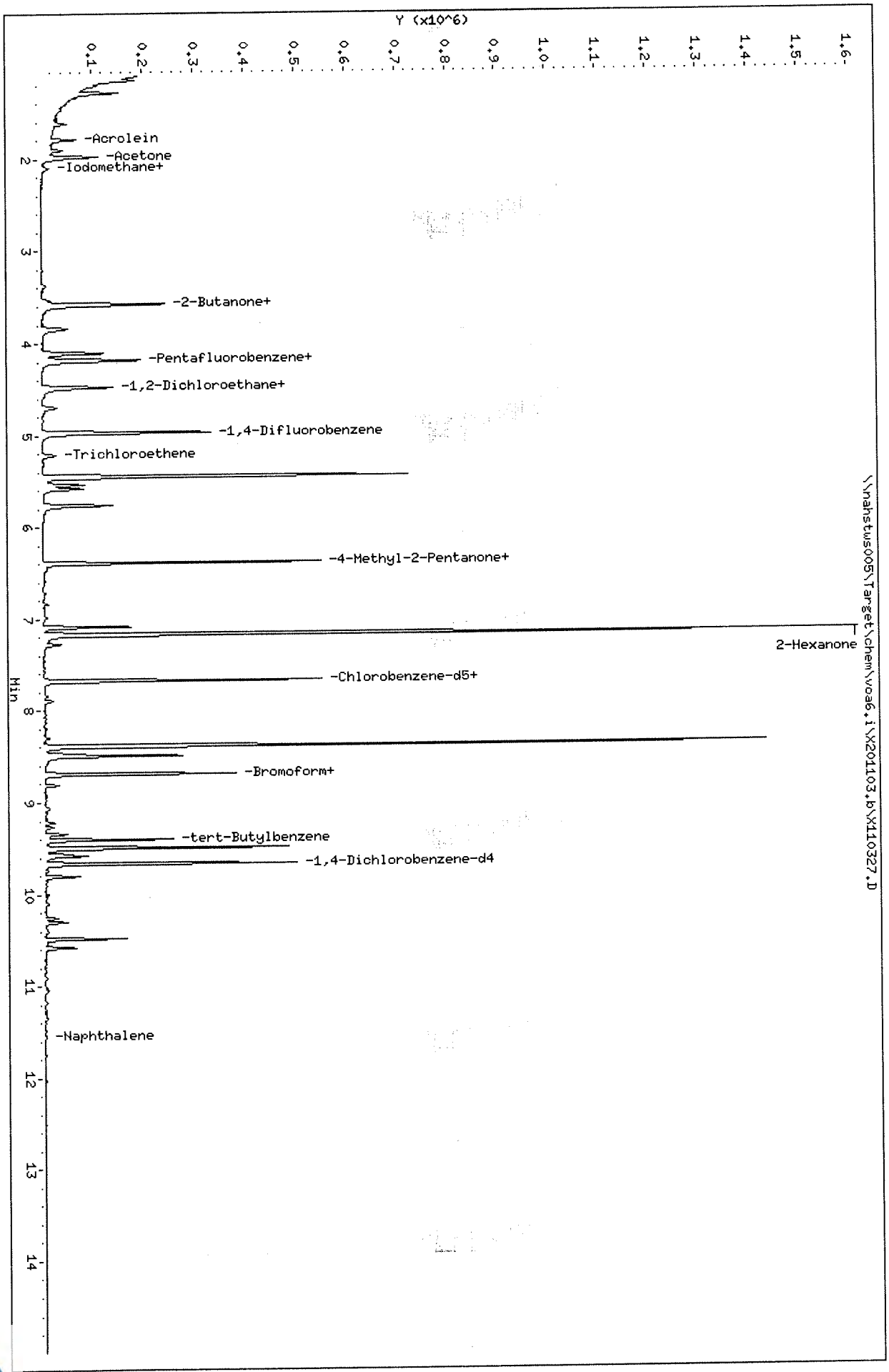












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110327.D
Date : 03-NOV-2020 21:07
Client ID: HS20101123-02
Sample Info: HS20101123-02;HS20101123-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110327.D

Date : 03-NOV-2020 21:07

Client ID: HS20101123-02

Instrument: voa6.i

Sample Info: HS20101123-02;HS20101123-02;;;

Purge Volume: 5.0

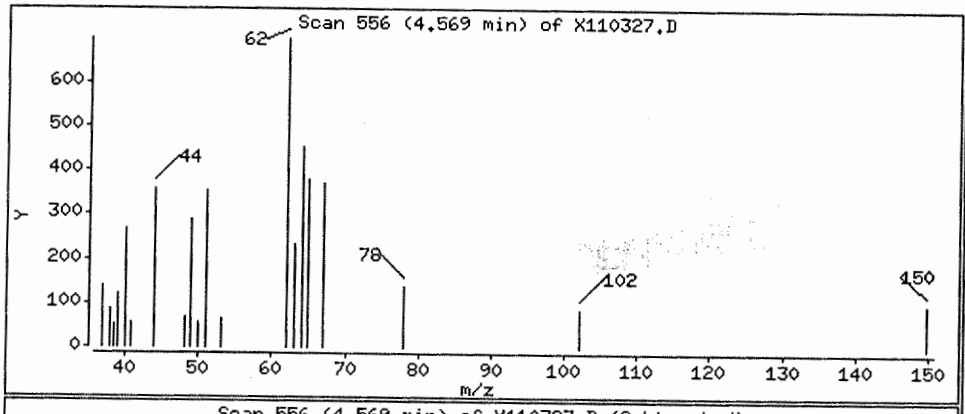
Operator: PC

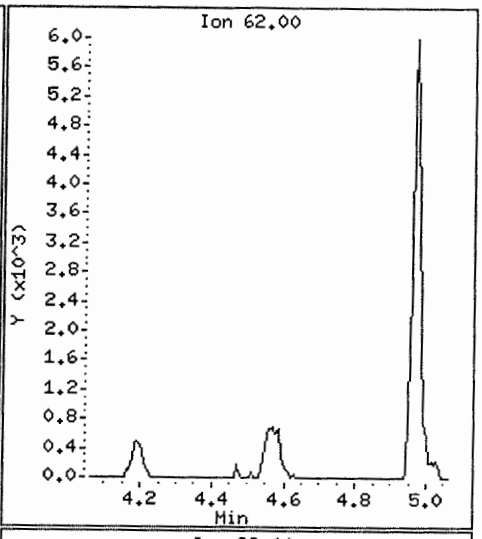
Column phase: DB624

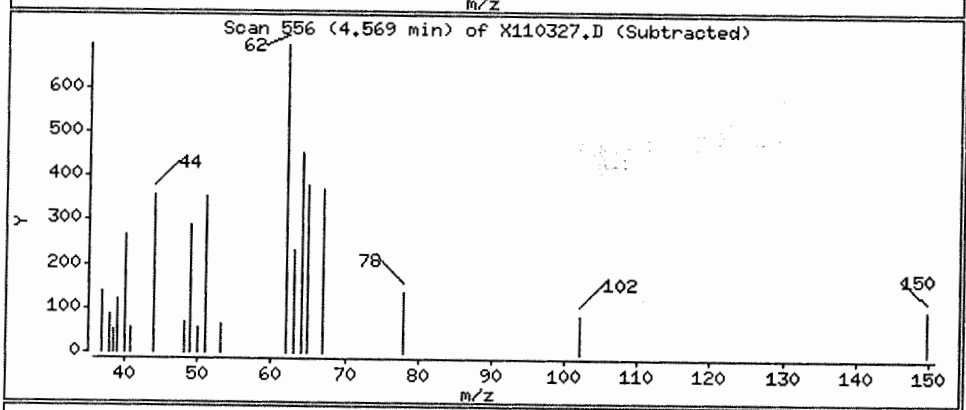
Column diameter: 0.18

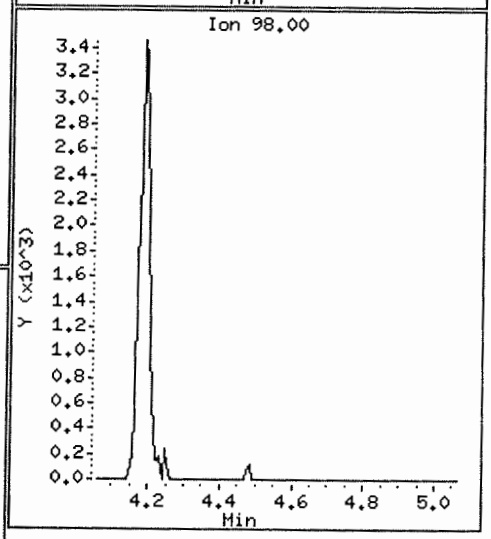
33 1,2-Dichloroethane

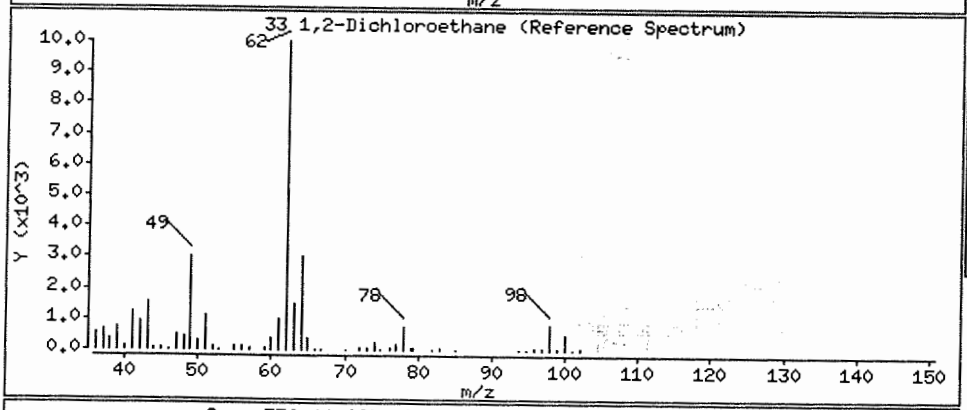
Concentration: 0.73 ug/l

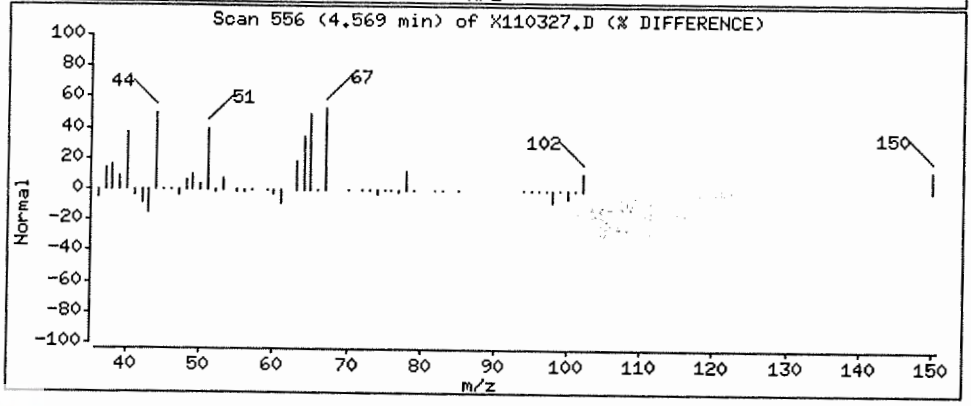












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110327.D

Date : 03-NOV-2020 21:07

Client ID: HS20101123-02

Instrument: voa6.i

Sample Info: HS20101123-02;HS20101123-02;;;

Purge Volume: 5.0

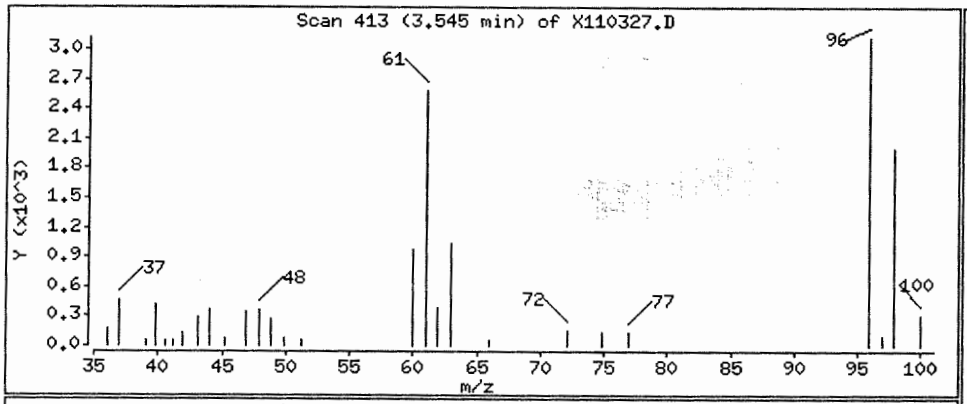
Operator: PC

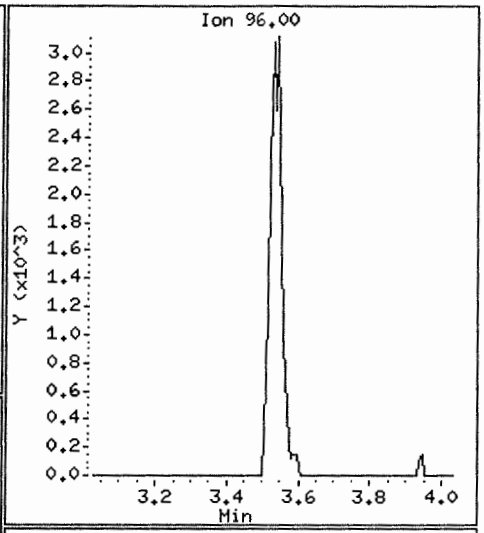
Column phase: DB624

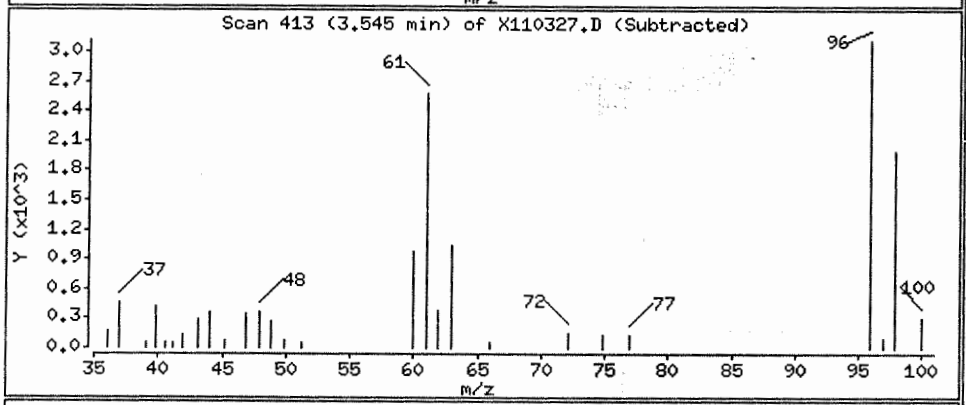
Column diameter: 0.18

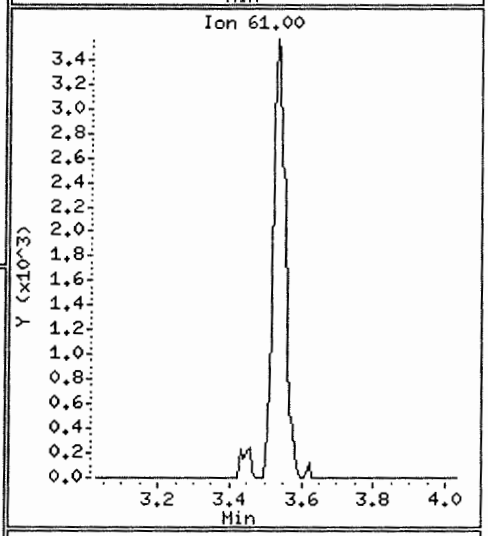
27 cis-1,2-Dichloroethene

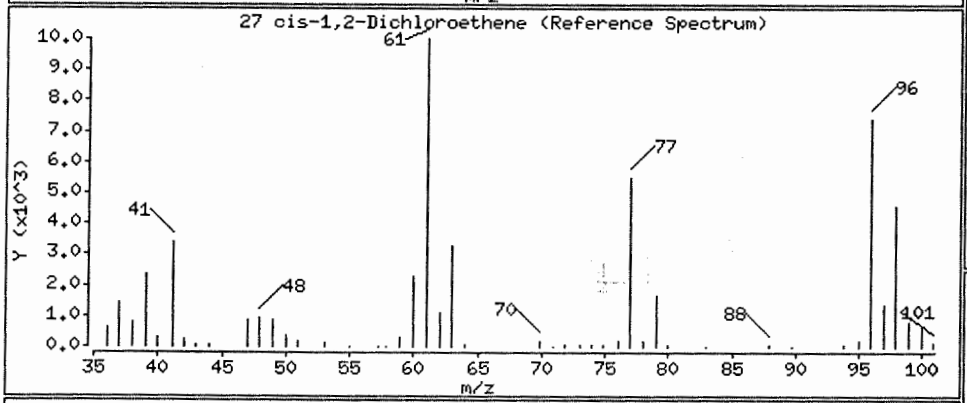
Concentration: 3.53 ug/l

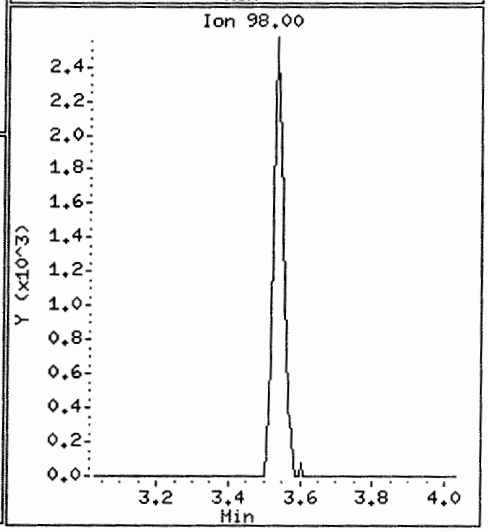


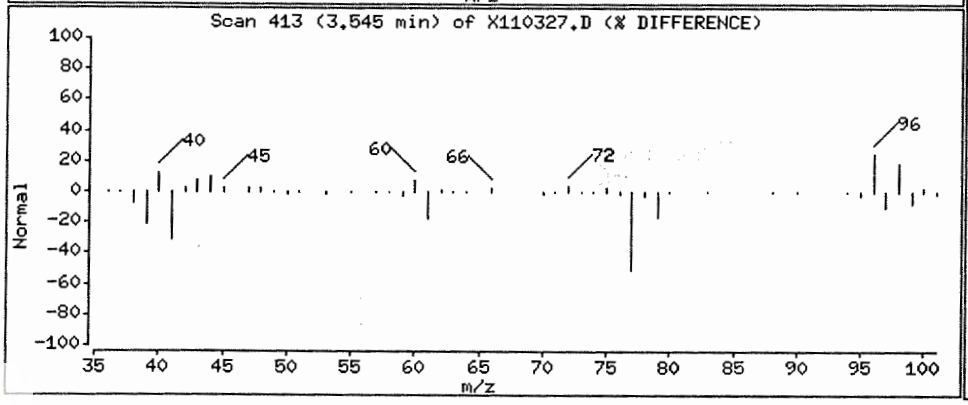












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110327.D

Date : 03-NOV-2020 21:07

Client ID: HS20101123-02

Instrument: voa6.i

Sample Info: HS20101123-02;HS20101123-02;;;

Purge Volume: 5.0

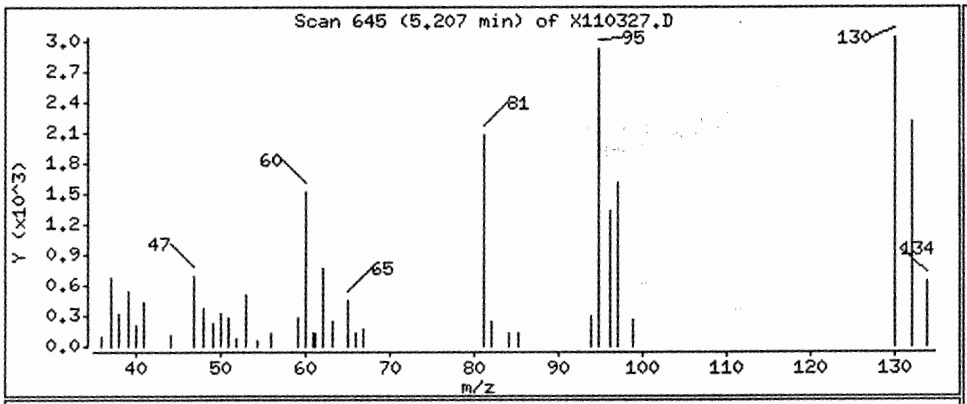
Operator: PC

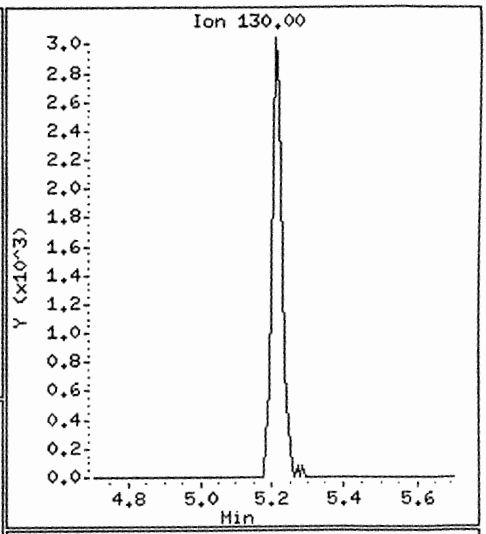
Column phase: DB624

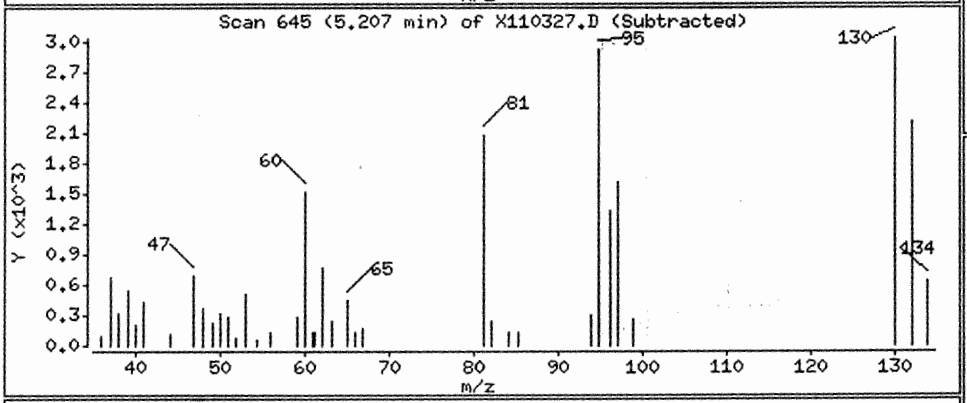
Column diameter: 0.18

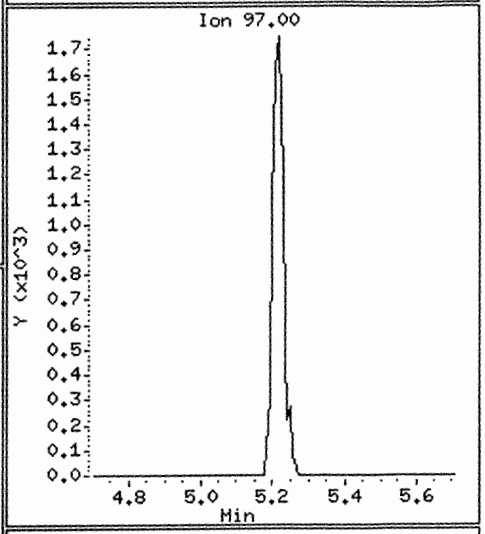
38 Trichloroethene

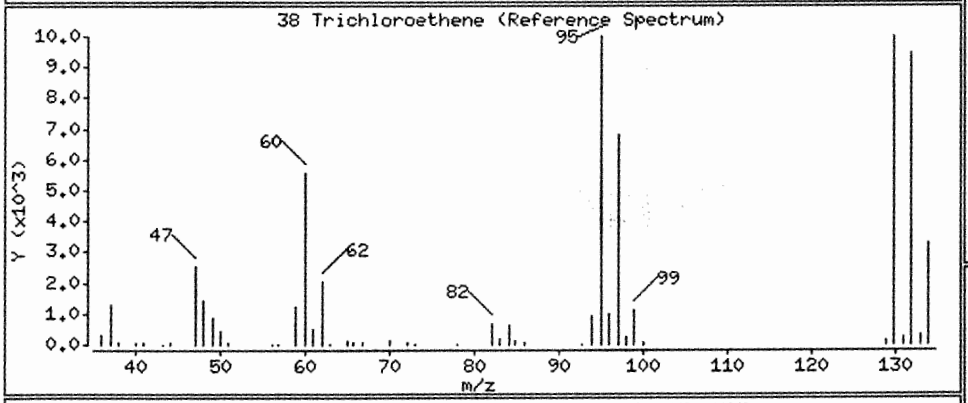
Concentration: 3.73 ug/l

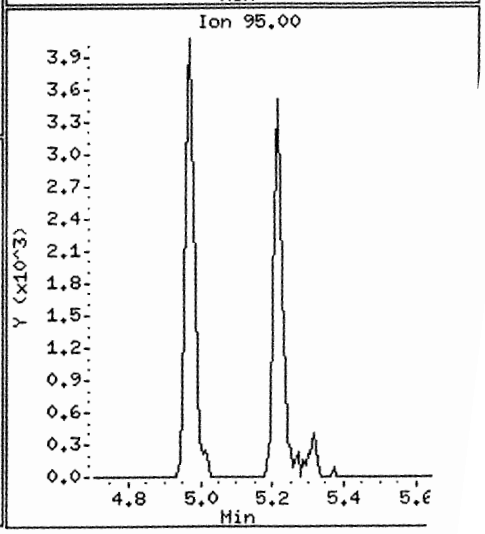


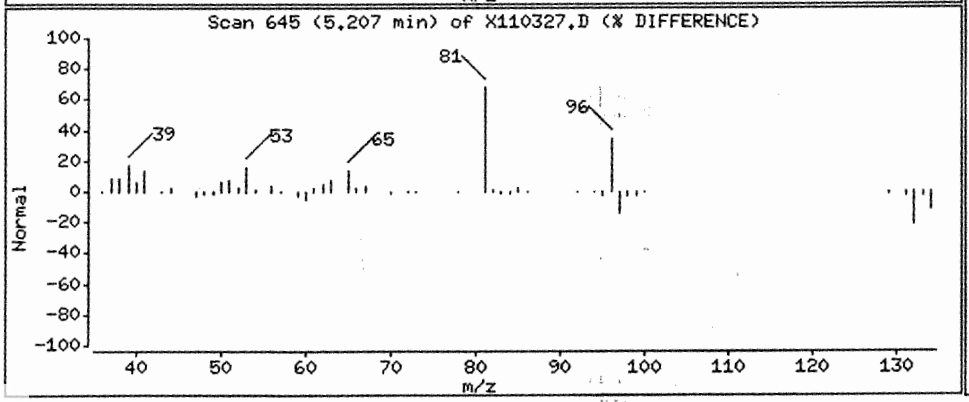












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D Page 1
Report Date: 30-Nov-2020 15:17

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D
Lab Smp Id: HS20101123-03 Client Smp ID: HS20101123-03
Inj Date : 03-NOV-2020 21:28
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-03;HS20101123-03;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:13 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

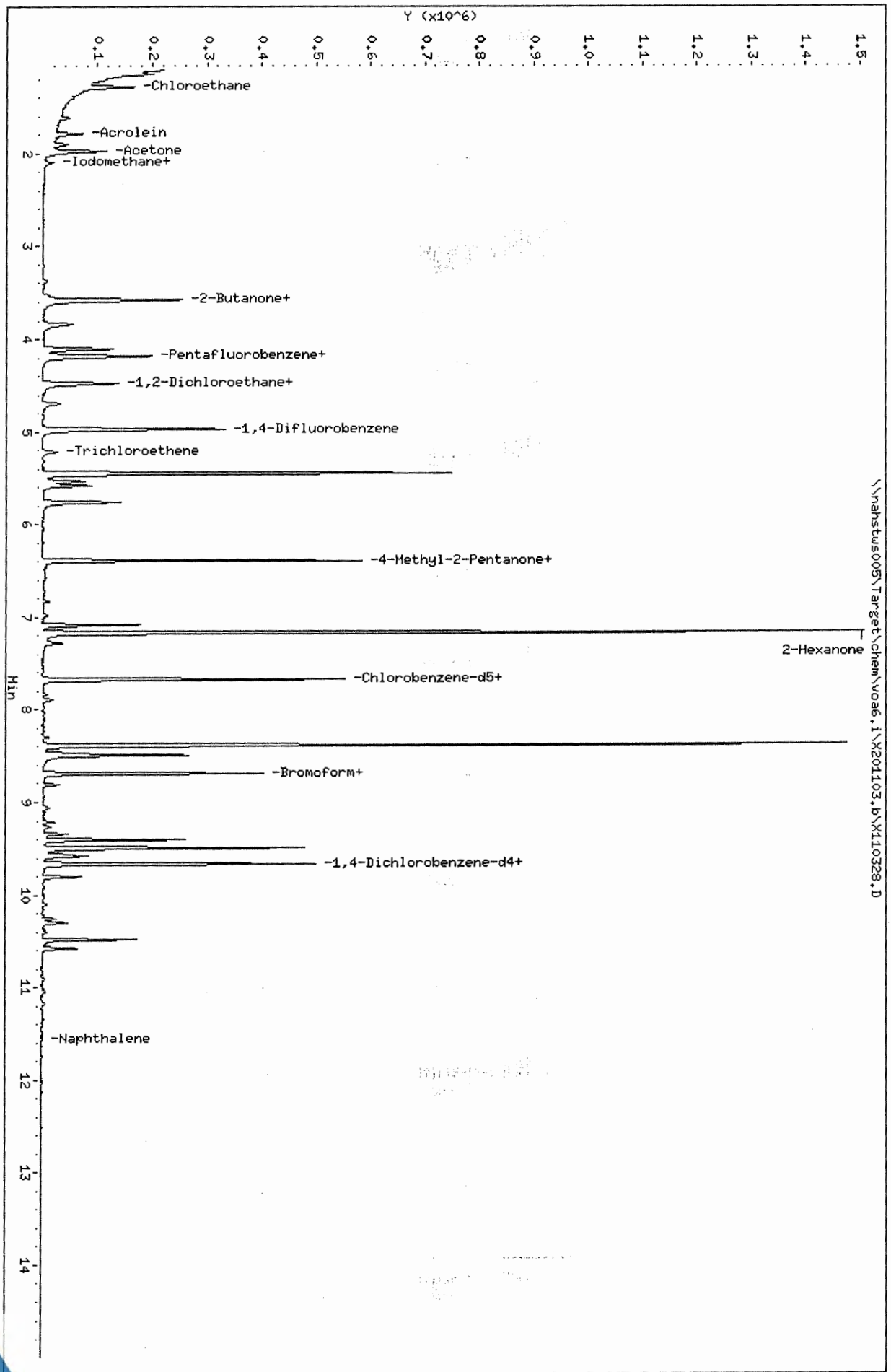
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	136678	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	238650	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	220868	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	92323	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	94991	44.0418	44.04
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	93079	47.5564	47.55
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	80892	43.9473	43.94
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	290700	49.2764	49.27
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	2349	0.91285	0.91(a)
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.844)	6712	3.34865	3.34(a)
38 Trichloroethene	130	5.214	5.206	(1.049)	5255	3.30427	3.30(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D
Date : 03-NOV-2020 21:28
Client ID: HS20101123-03
Sample Info: HS20101123-03;HS20101123-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D

Date : 03-NOV-2020 21:28

Client ID: HS20101123-03

Instrument: voa6.i

Sample Info: HS20101123-03;HS20101123-03;;;

Purge Volume: 5.0

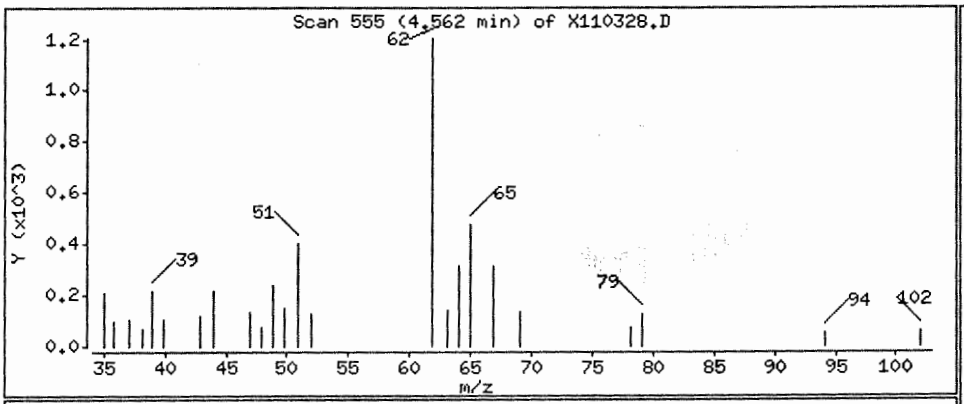
Operator: PC

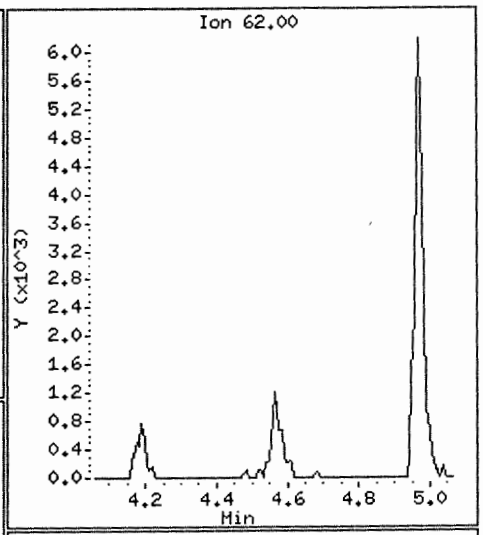
Column phase: DB624

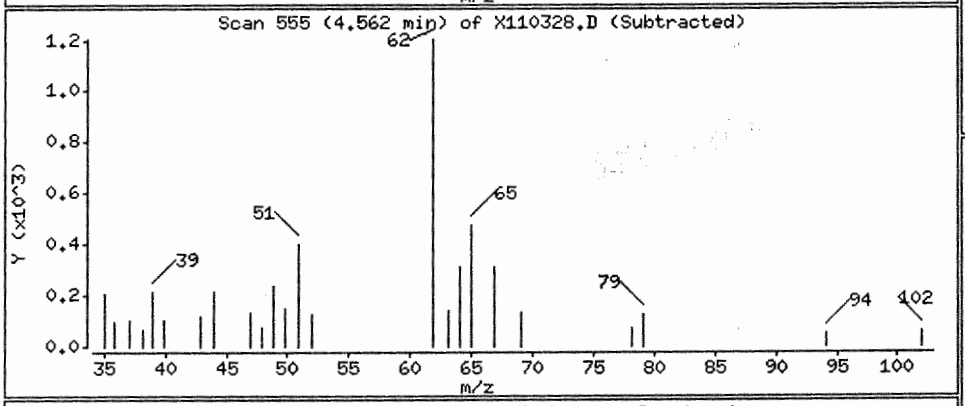
Column diameter: 0.18

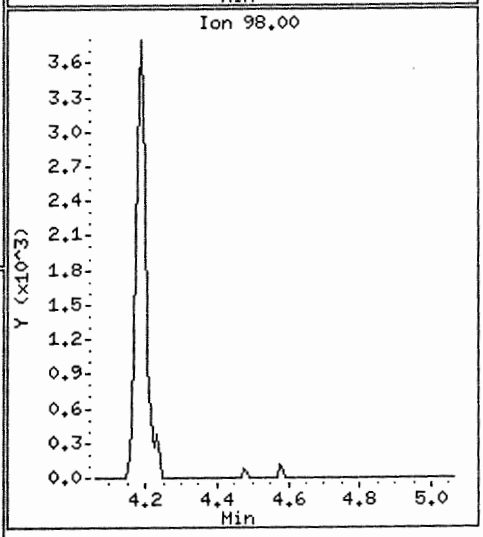
33 1,2-Dichloroethane

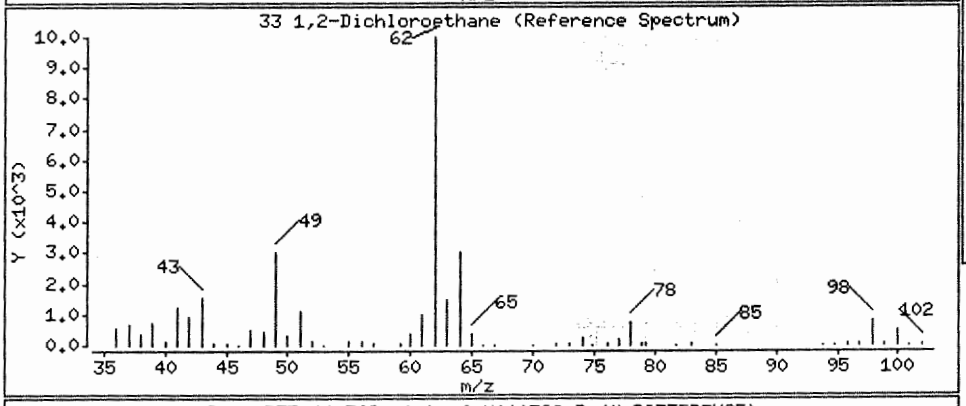
Concentration: 0.91 ug/l

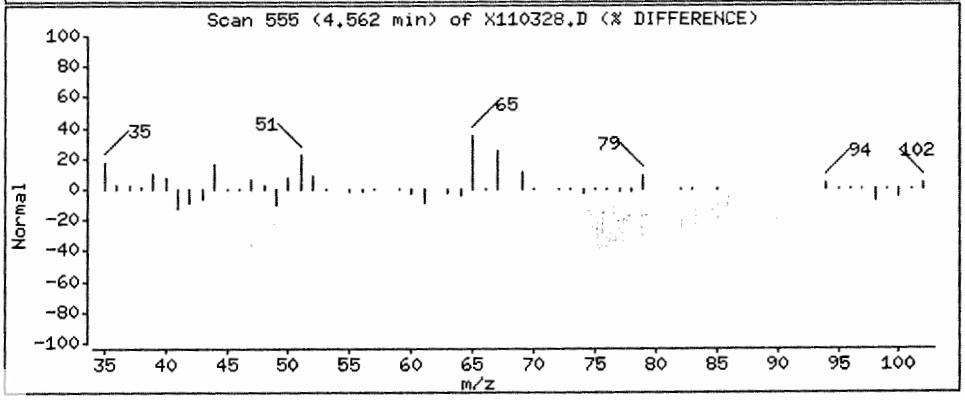












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D

Date : 03-NOV-2020 21:28

Client ID: HS20101123-03

Instrument: voa6.i

Sample Info: HS20101123-03;HS20101123-03;;;

Purge Volume: 5.0

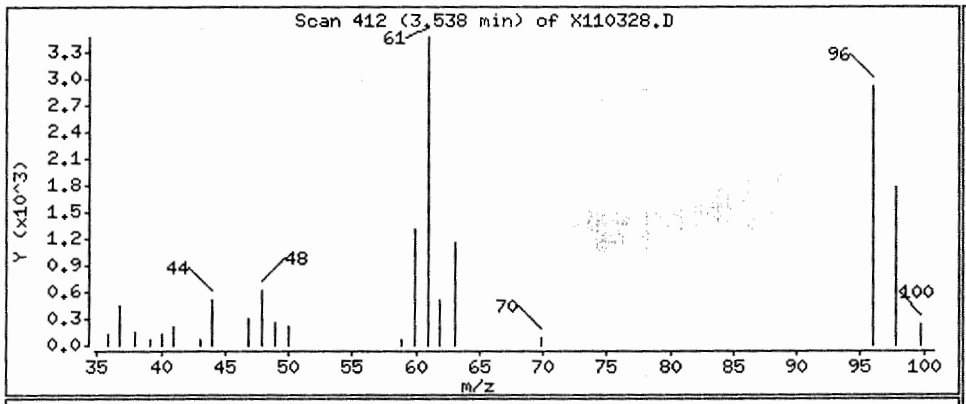
Operator: PC

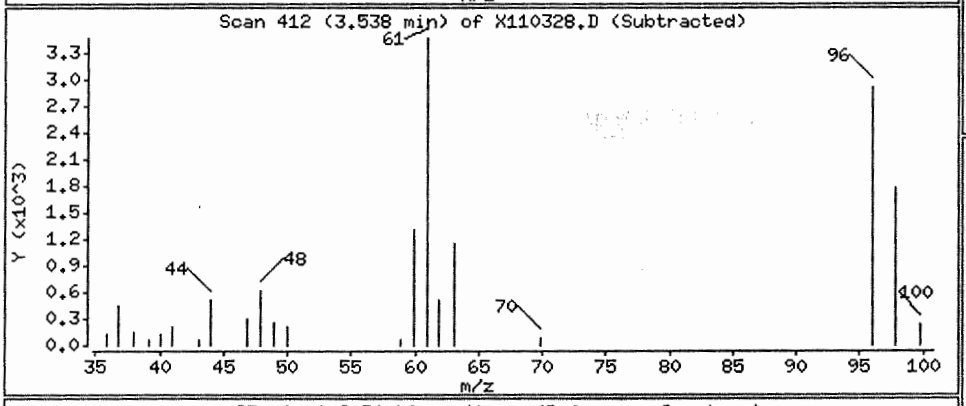
Column phase: DB624

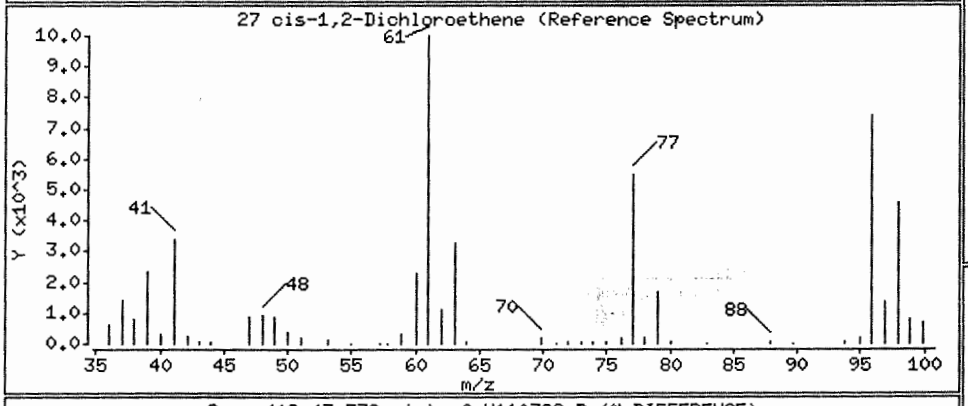
Column diameter: 0.18

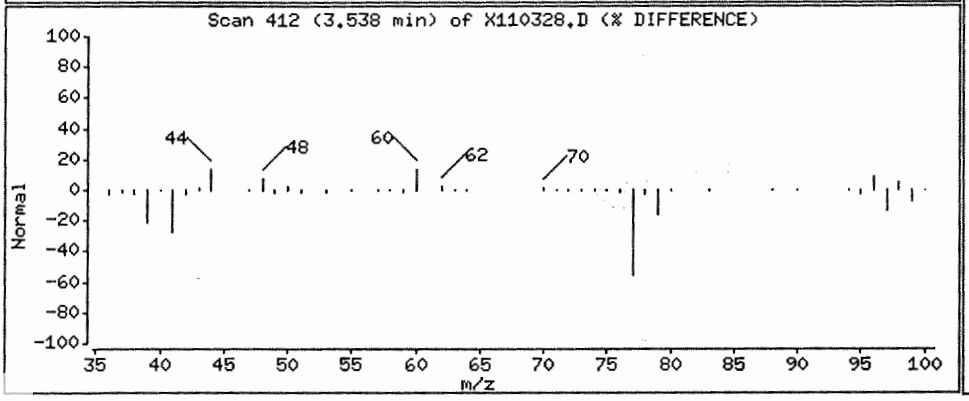
27 cis-1,2-Dichloroethene

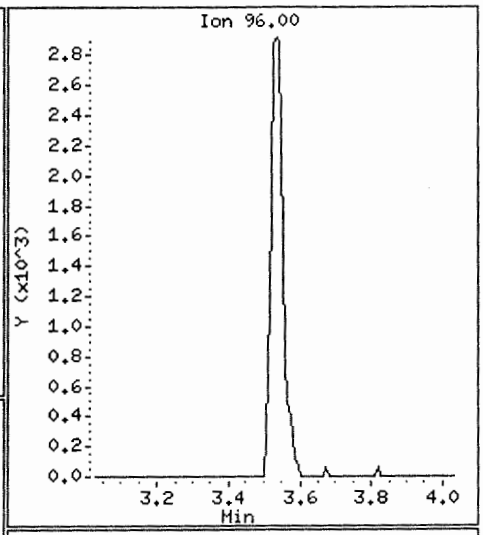
Concentration: 3.34 ug/l

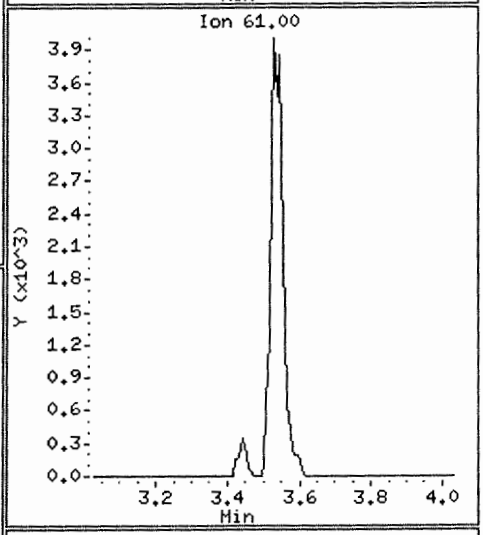


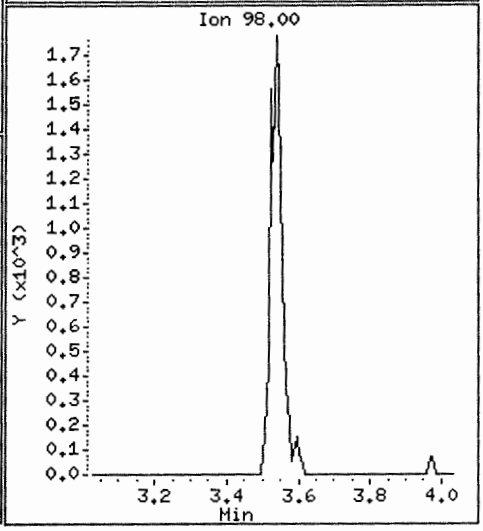












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110328.D

Date : 03-NOV-2020 21:28

Client ID: HS20101123-03

Instrument: voa6.i

Sample Info: HS20101123-03;HS20101123-03;;;

Purge Volume: 5.0

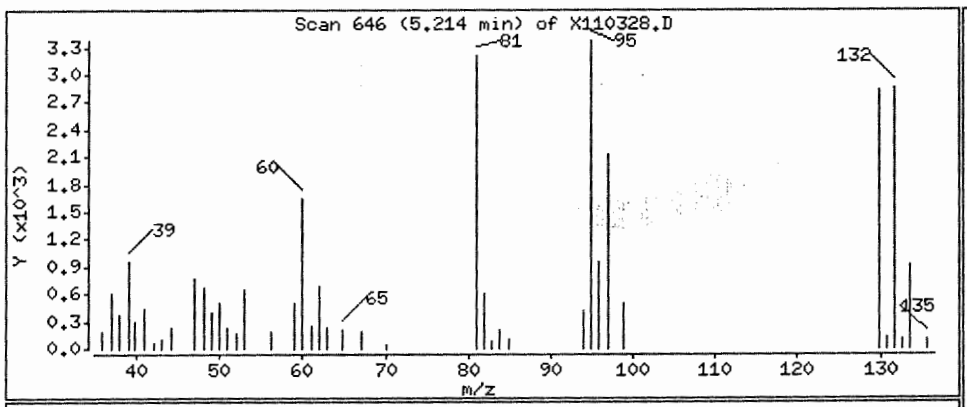
Operator: PC

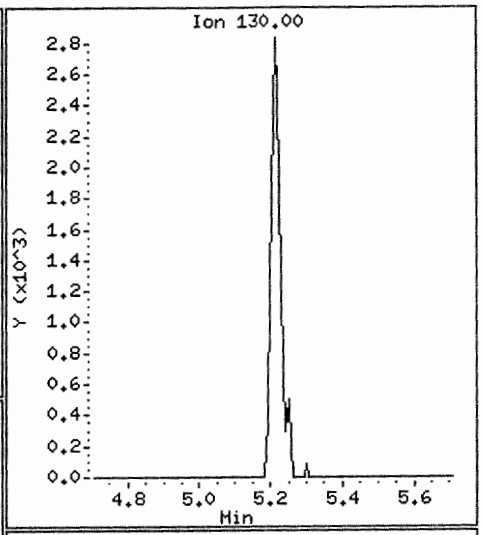
Column phase: DB624

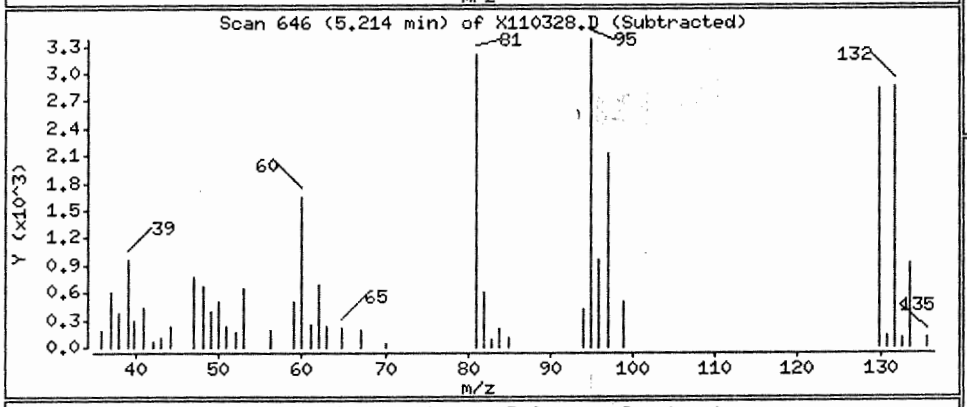
Column diameter: 0.18

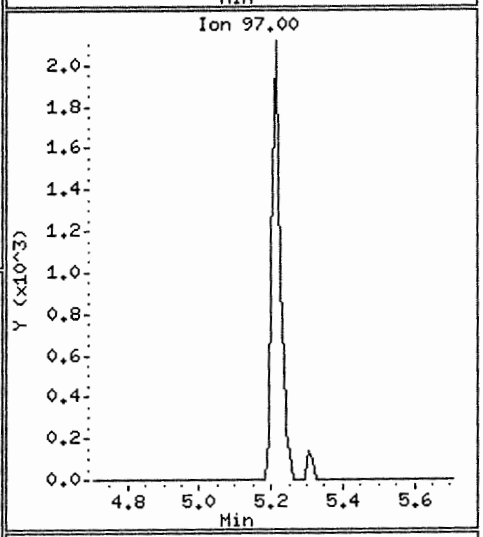
38 Trichloroethene

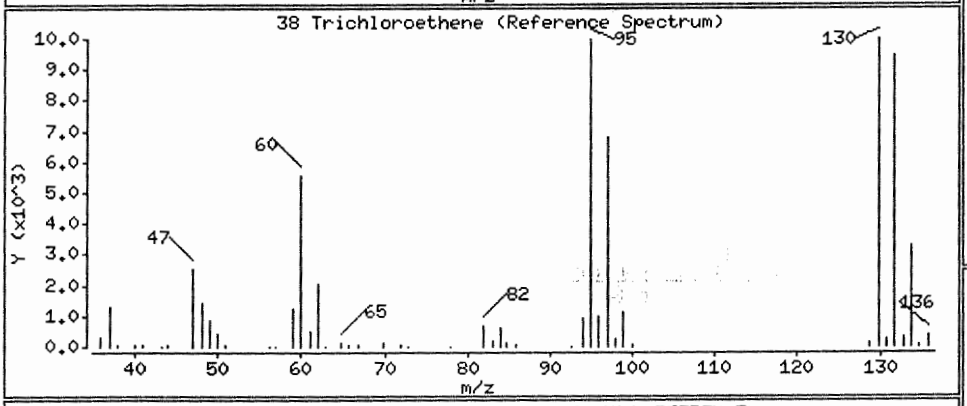
Concentration: 3.30 ug/l

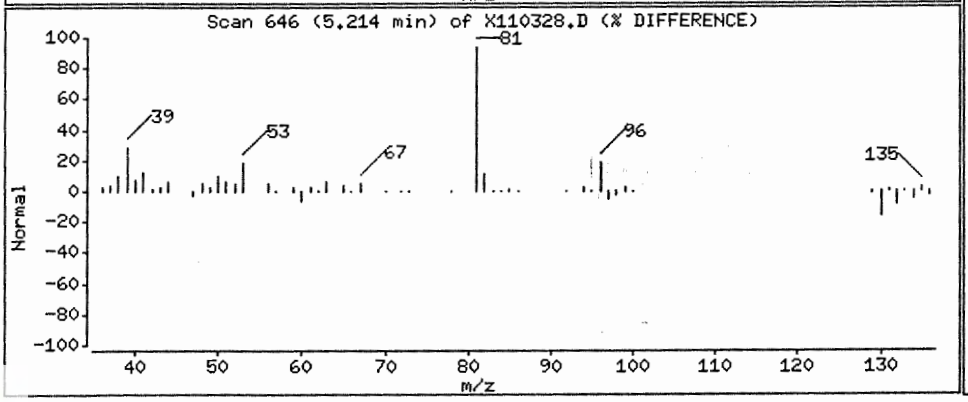


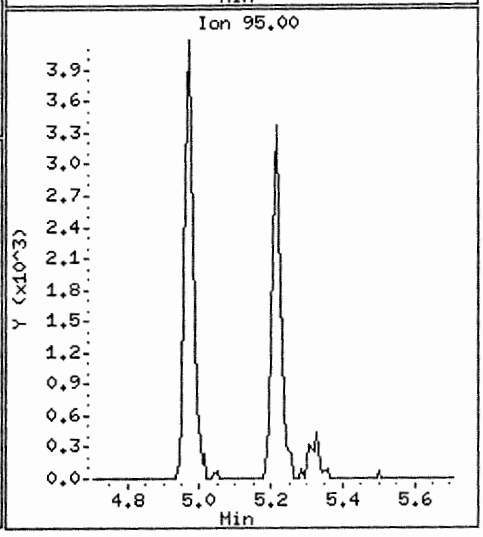












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D Page 1
Report Date: 30-Nov-2020 15:17

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D
Lab Smp Id: HS20101123-04 Client Smp ID: HS20101123-04
Inj Date : 03-NOV-2020 21:49
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-04;HS20101123-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:13 dev.giga Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 29
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

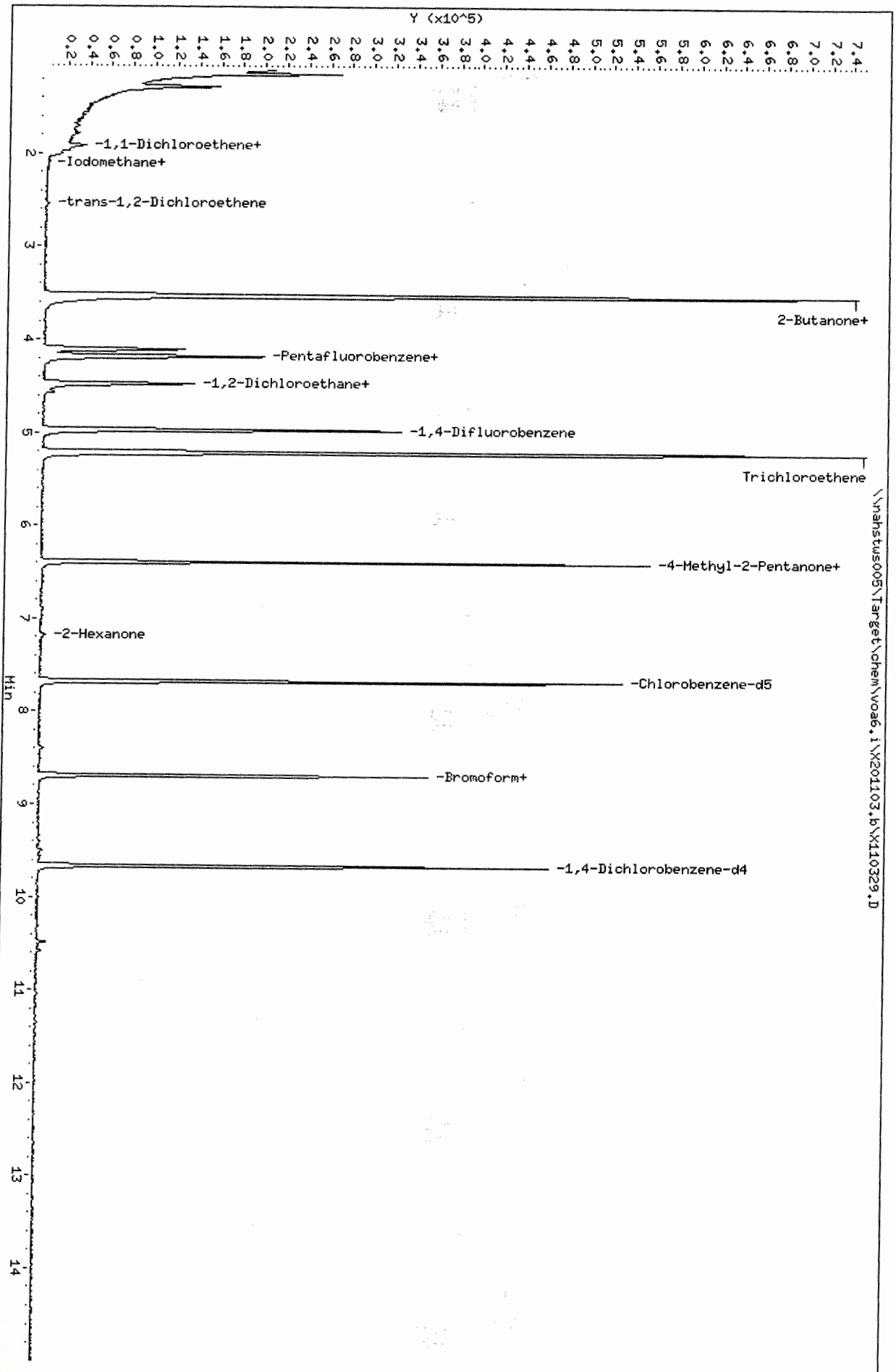
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	138403	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	237263	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	209766	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	88729	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	96573	44.2114	44.21
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	87169	46.9182	46.91
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	79518	42.6624	42.66
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	289578	51.6841	51.68
11 1,1-Dichloroethene	96	1.919	1.911	(0.458)	4190	1.60458	1.60(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	6896	2.69553	2.69(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	341278	168.143	168.14
38 Trichloroethene	130	5.207	5.206	(1.048)	205843	130.188	130.18

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\X110329.D
Date : 03-NOV-2020 21:49
Client ID: HS201011123-04
Sample Info: HS201011123-04;HS201011123-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D

Date : 03-NOV-2020 21:49

Client ID: HS20101123-04

Instrument: voa6.i

Sample Info: HS20101123-04;HS20101123-04;;;

Purge Volume: 5.0

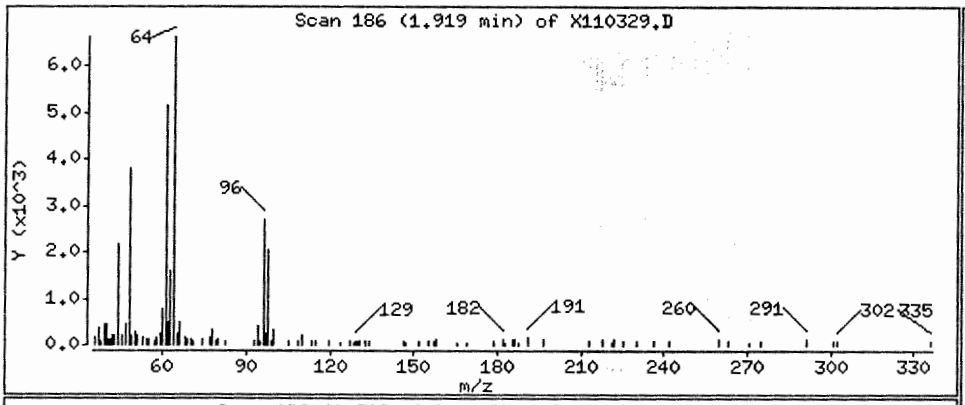
Operator: PC

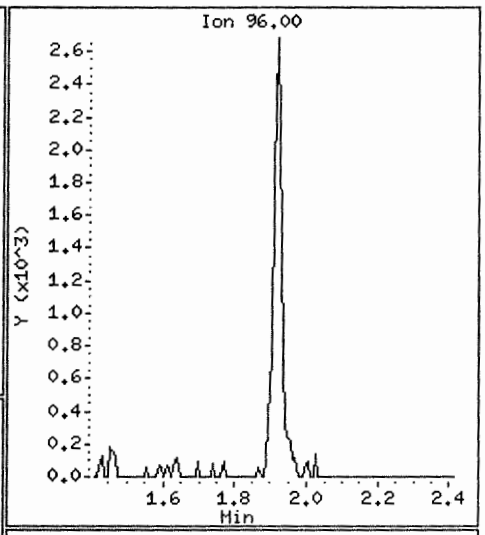
Column phase: DB624

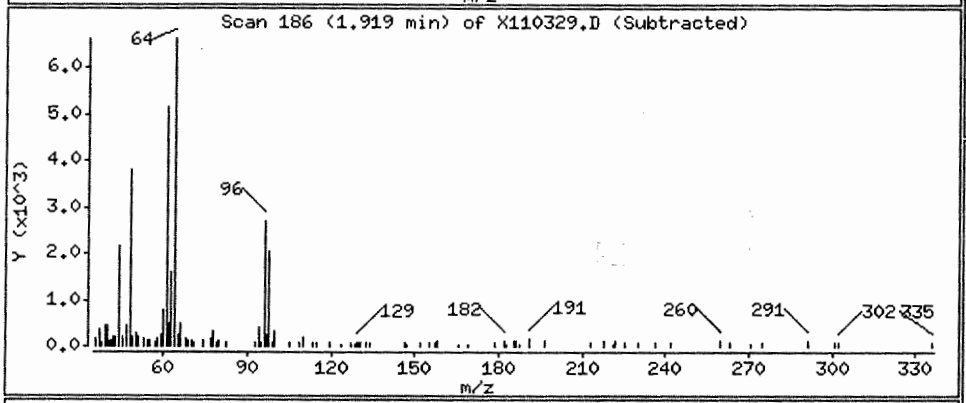
Column diameter: 0.18

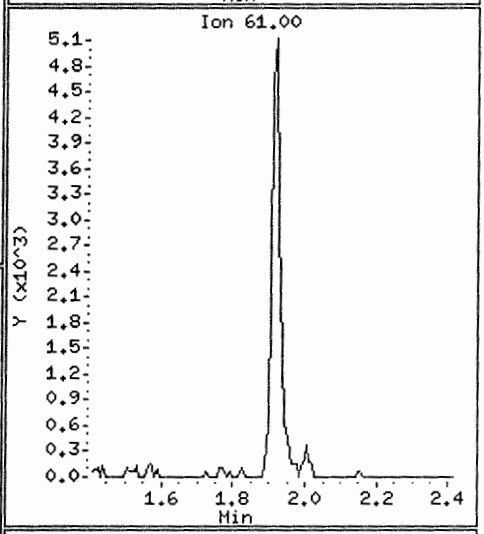
11 1,1-Dichloroethene

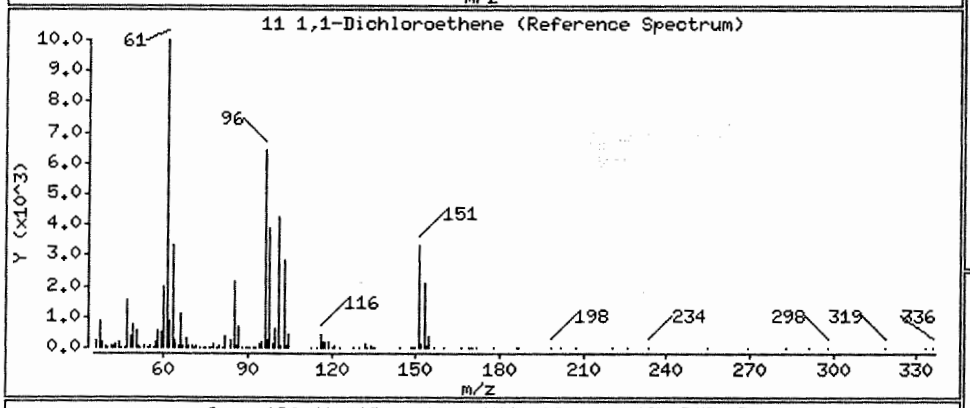
Concentration: 1.60 ug/l

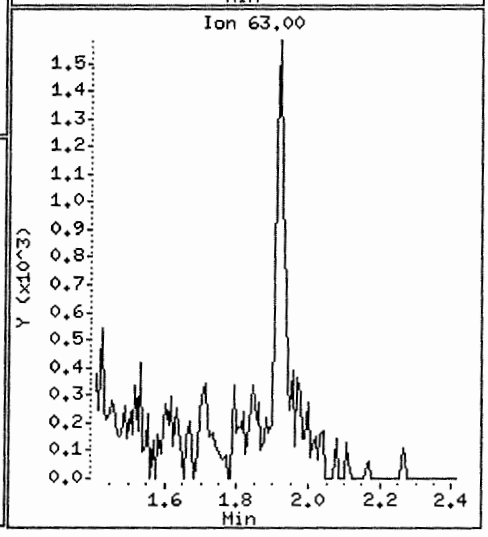


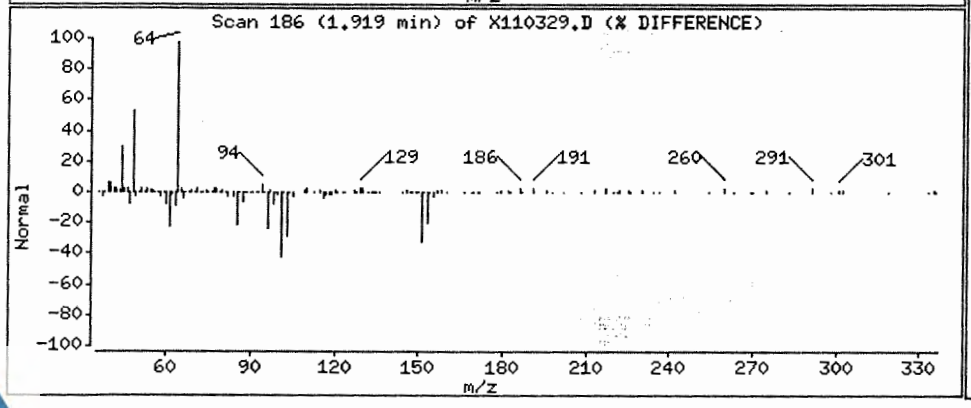












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D

Date : 03-NOV-2020 21:49

Client ID: HS20101123-04

Instrument: voa6.i

Sample Info: HS20101123-04;HS20101123-04;;;

Purge Volume: 5.0

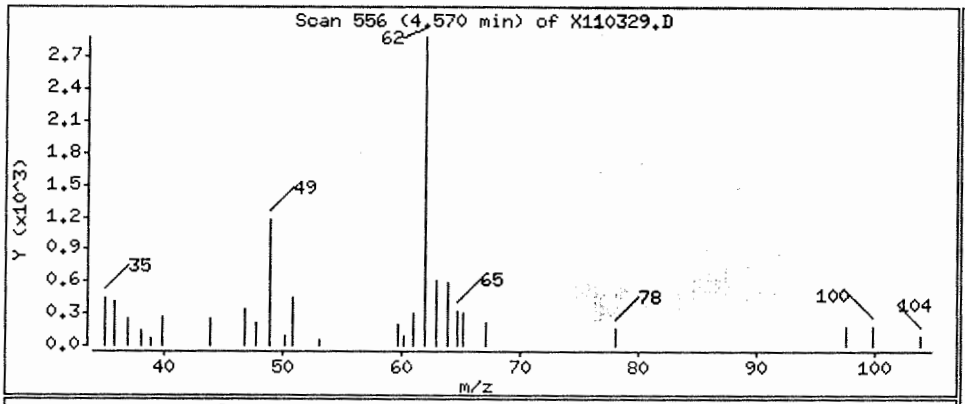
Operator: PC

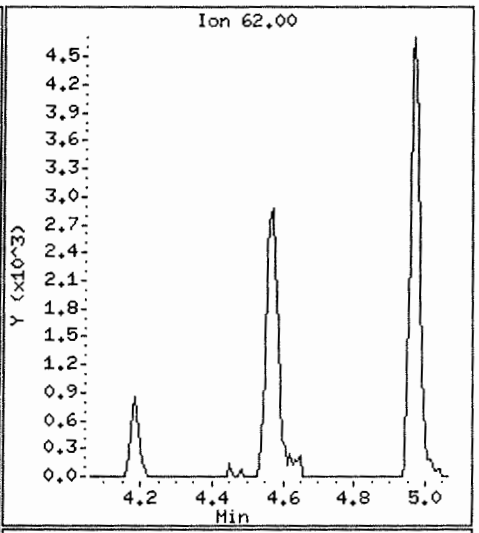
Column phase: DB624

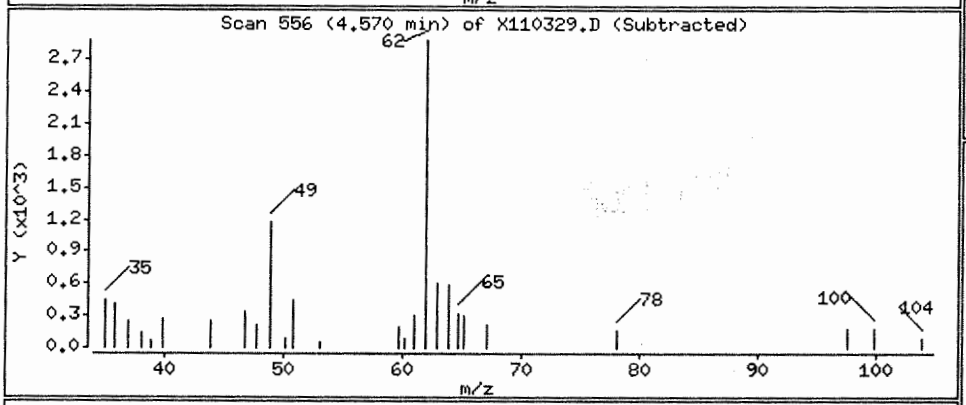
Column diameter: 0.18

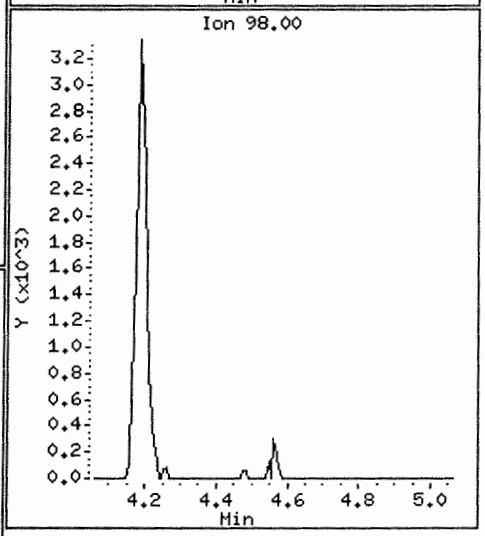
33 1,2-Dichloroethane

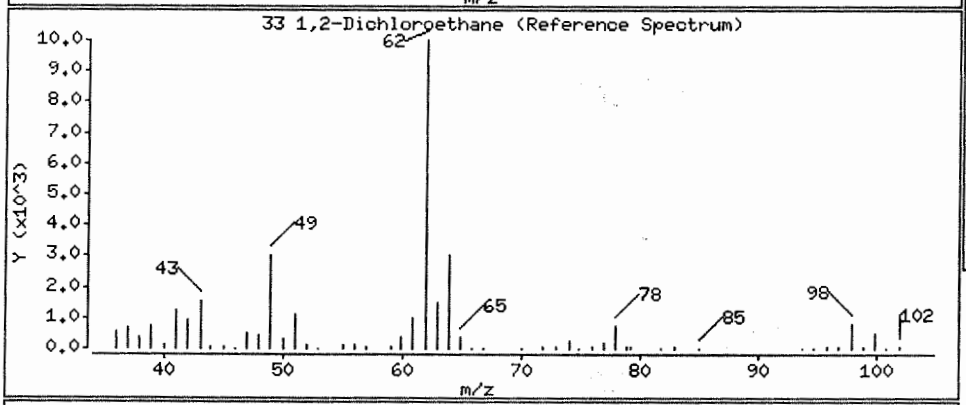
Concentration: 2.69 ug/l

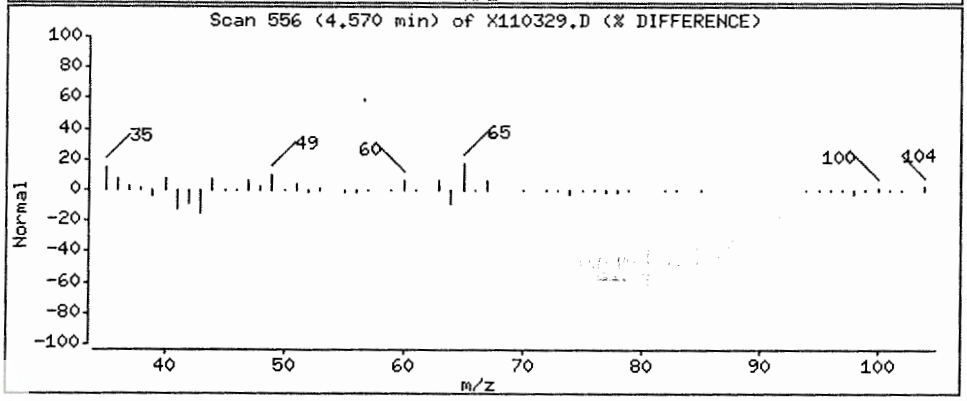












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D

Date : 03-NOV-2020 21:49

Client ID: HS20101123-04

Instrument: voa6.i

Sample Info: HS20101123-04;HS20101123-04;;;

Purge Volume: 5.0

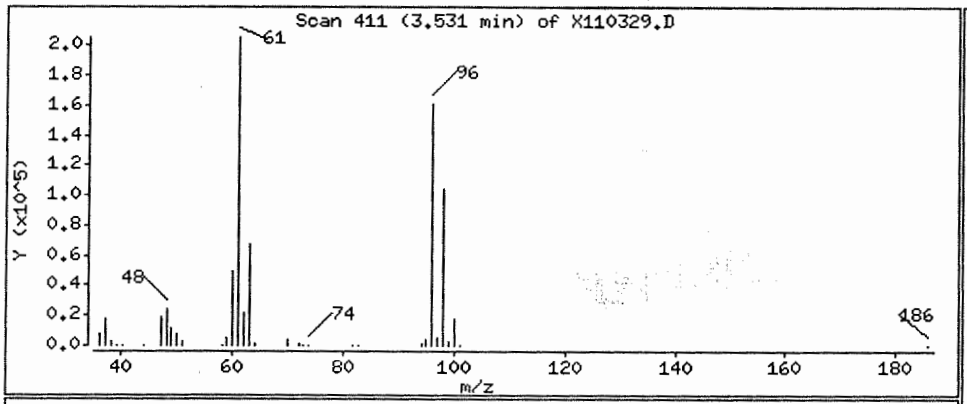
Operator: PC

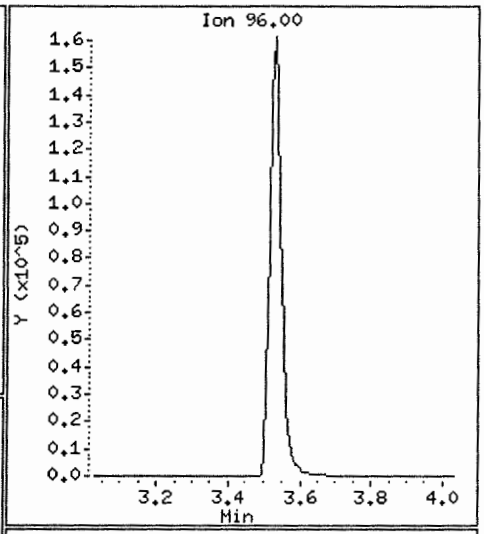
Column phase: DB624

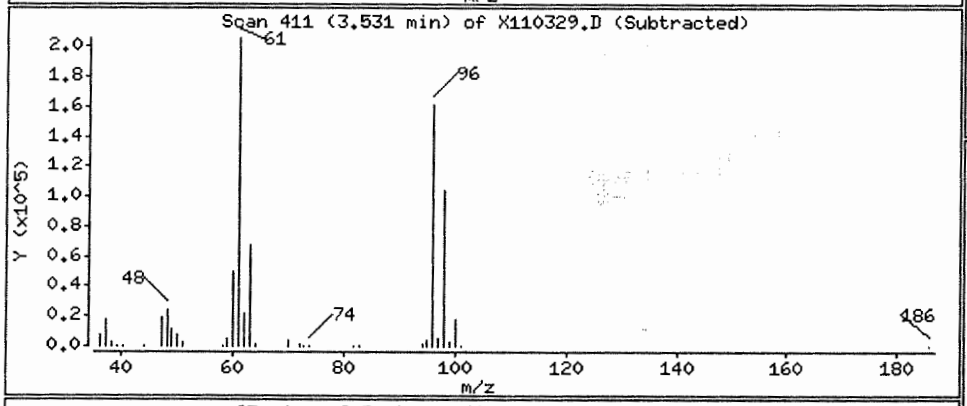
Column diameter: 0.18

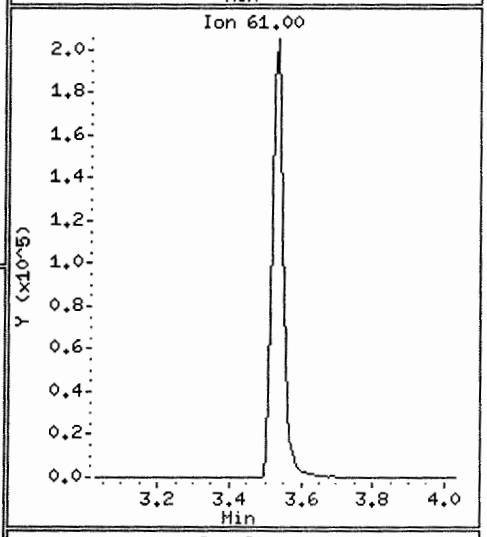
27 cis-1,2-Dichloroethene

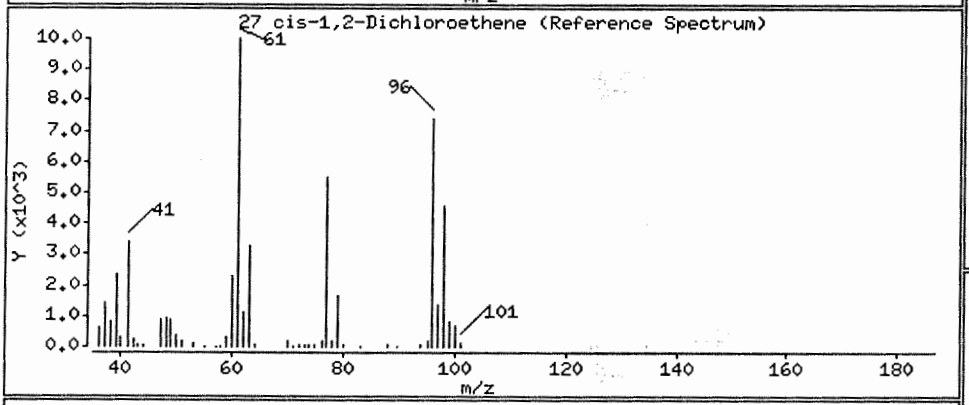
Concentration: 168.14 ug/l

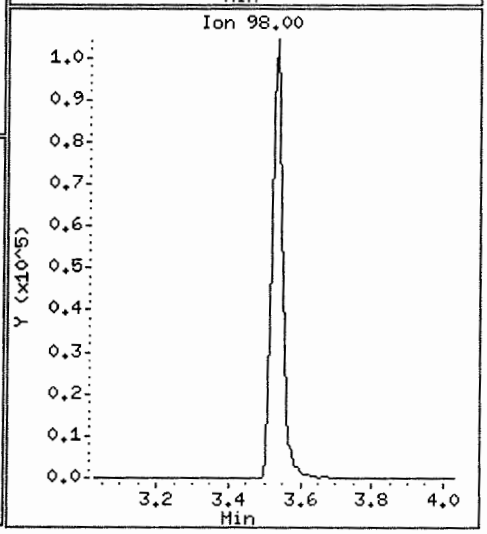


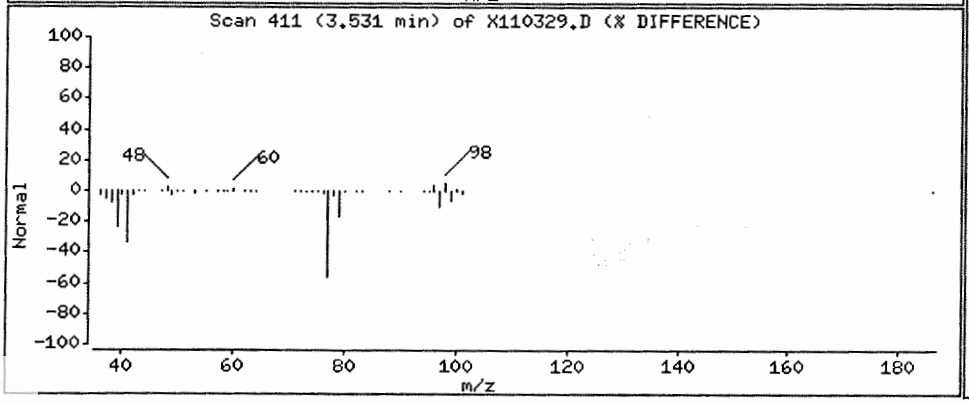












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110329.D Page 6

Date : 03-NOV-2020 21:49

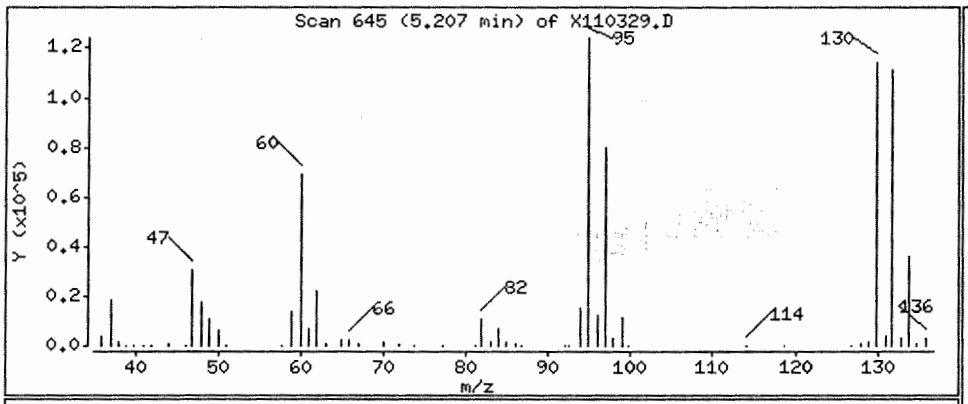
Client ID: HS20101123-04 Instrument: voa6.i

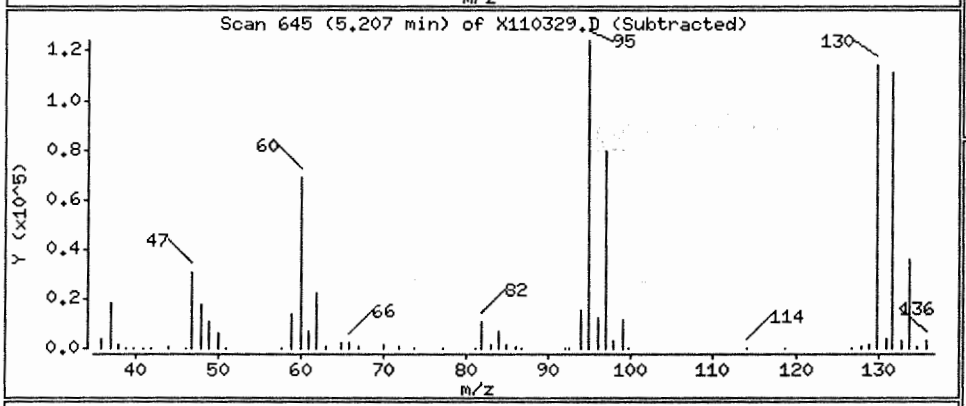
Sample Info: HS20101123-04;HS20101123-04;;;

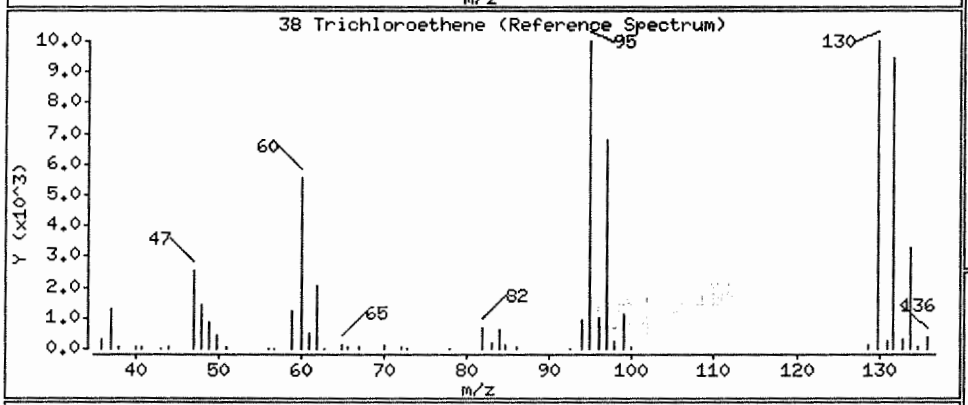
Purge Volume: 5.0 Operator: PC

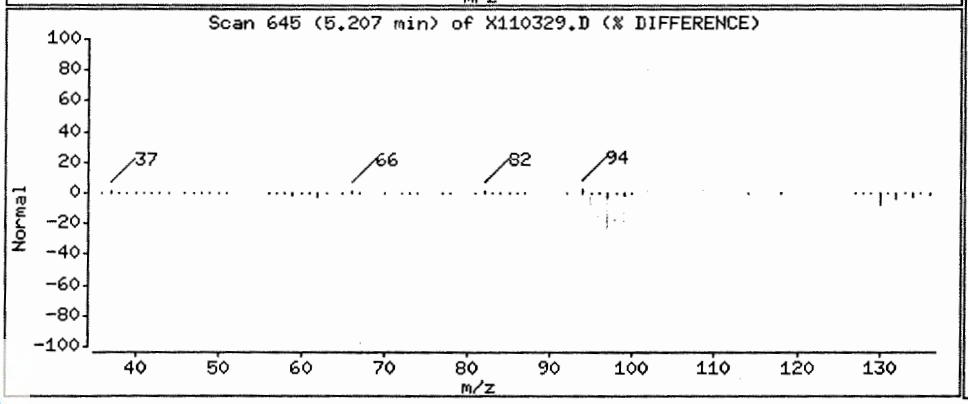
Column phase: DB624 Column diameter: 0.18

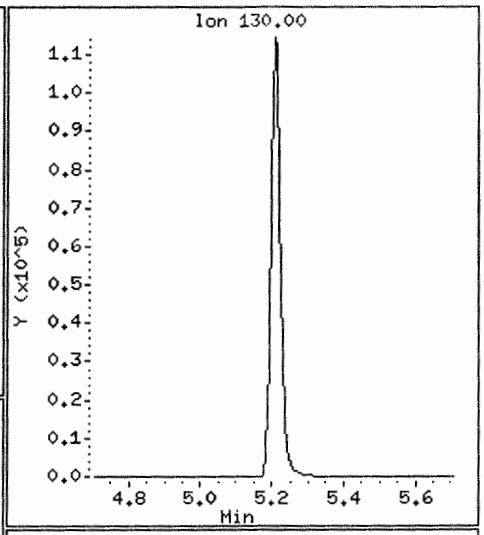
38 Trichloroethene Concentration: 130.18 ug/l

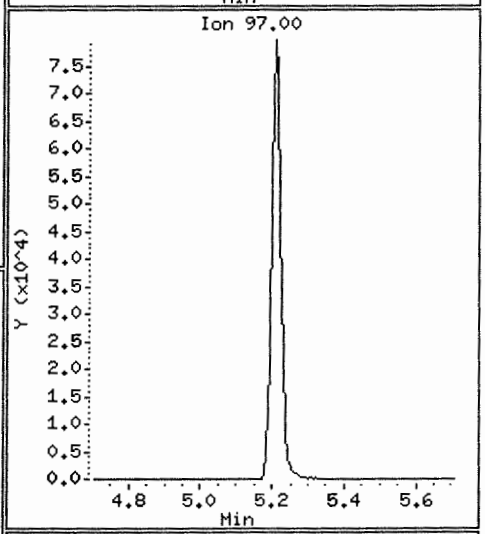


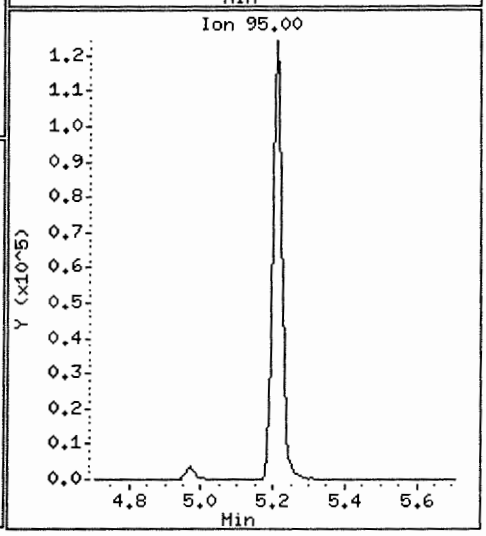












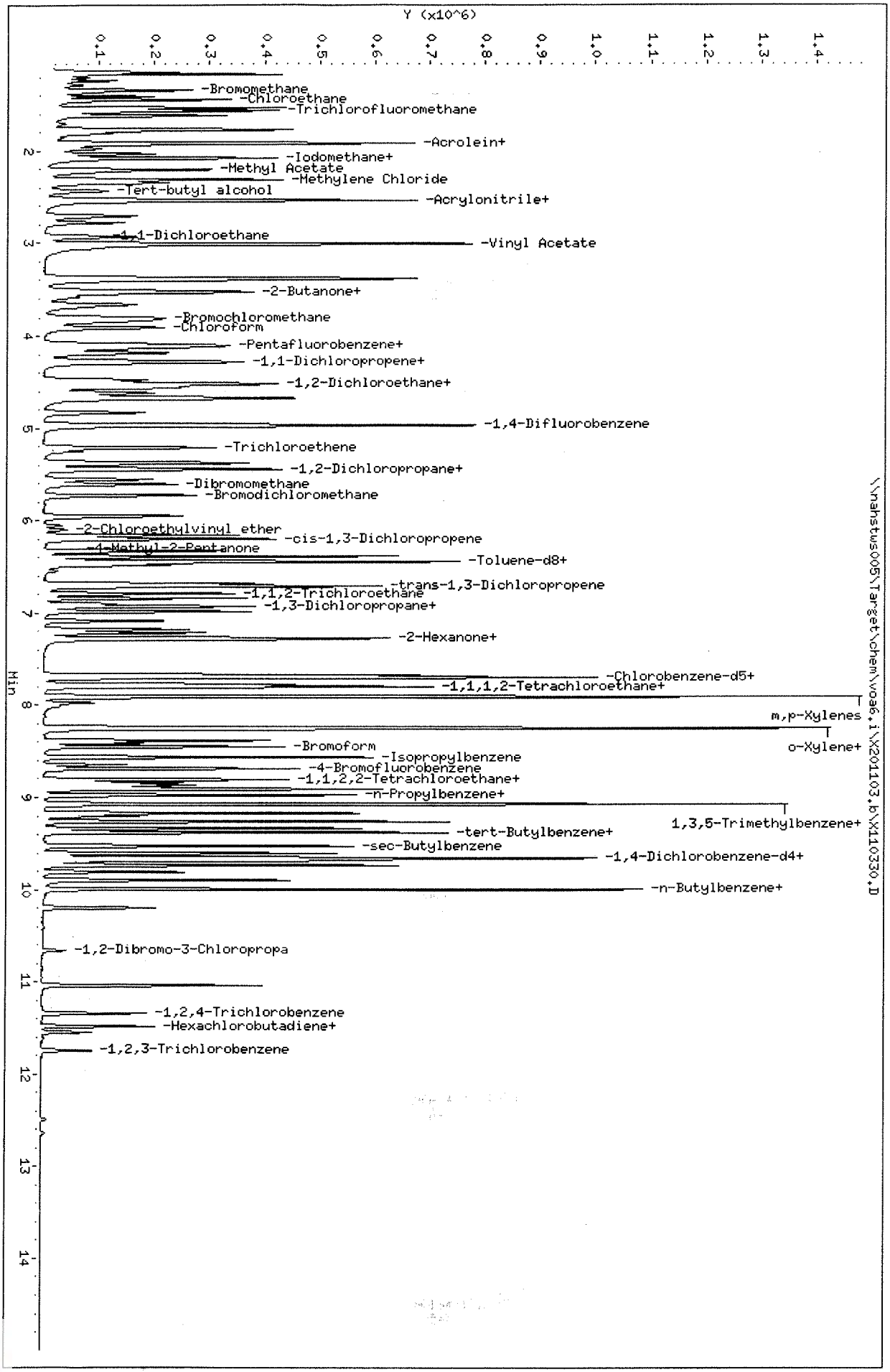
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\X110330.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 03-NOV-2020 22:10
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:20 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 30 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	152848	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	283383	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	258464	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	123794	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	129283	50.0000	53.19
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	112090	50.0000	48.88
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	100333	50.0000	48.74
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	335007	50.0000	48.52
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	75368	50.0000	47.27
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	126947	50.0000	44.02
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	144132	50.0000	47.16
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	101705	50.0000	45.37
17 Methylene Chloride	84	2.305	2.305	(0.551)	90392	50.0000	43.07
38 Trichloroethene	130	5.214	5.214	(1.049)	87191	50.0000	46.17
5 Vinyl Chloride	62	1.145	1.145	(0.274)	149184	50.0000	44.17



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\X110330.D
Date : 03-NOV-2020 22:10
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

MSVOA06 -Logbook

Batch: 42316 **Analyst:** Devak Giga

Date: 11-03-2020 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	11-03-2020 11:40 am	1.00	0.00 mL	0.00 mL	X110301.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	11-03-2020 12:01 pm	1.00	5.00 mL	0.00 mL	X110302.D	Liquid	Y	NA
	010 uL cal std/100 mL DI									
3	VSTD000.5	ICAL2	11-03-2020 12:43 pm	1.00	5.00 mL	0.00 mL	X110303.D	Liquid	Y	NA
	0.10 uL cal std/50 mL DI									
4	VSTD001	ICAL3	11-03-2020 01:04 pm	1.00	5.00 mL	0.00 mL	X110304.D	Liquid	Y	NA
	0.20 uL cal std/50 mL DI									
5	VSTD002	ICAL4	11-03-2020 01:24 pm	1.00	5.00 mL	0.00 mL	X110305.D	Liquid	Y	NA
	0.4 uL cal std/50 mL DI									
6	VSTD005	ICAL5	11-03-2020 01:45 pm	1.00	5.00 mL	0.00 mL	X110306.D	Liquid	Y	NA
	1.0 uL cal std/50 mL DI									
7	VSTD020	ICAL6	11-03-2020 02:06 pm	1.00	5.00 mL	0.00 mL	X110307.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
8	VSTD050	ICAL7	11-03-2020 02:27 pm	1.00	5.00 mL	0.00 mL	X110308.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
9	VSTD100	ICAL8	11-03-2020 02:48 pm	1.00	5.00 mL	0.00 mL	X110309.D	Liquid	Y	NA
	20 uL cal std/50 mL DI									
10	VSTD150	ICAL9	11-03-2020 03:09 pm	1.00	5.00 mL	0.00 mL	X110310.D	Liquid	Y	NA
	30 uL cal std/50 mL DI									
11	VSTD200	ICAL	11-03-2020 03:30 pm	1.00	5.00 mL	0.00 mL	X110311.D	Liquid	Y	NA
	40 uL cal std/50 mL DI									
12	BLANK	SAMP	11-03-2020 03:51 pm	1.00	5.00 mL	0.00 mL	X110312.D	Liquid	Y	NA
13	BLANK	SAMP	11-03-2020 04:12 pm	1.00	5.00 mL	0.00 mL	X110313.D	Liquid	Y	NA
14	ICV	ICV	11-03-2020 04:33 pm	1.00	5.00 mL	0.00 mL	X110314.D	Liquid	Y	NA
	10 uL ical std/50 mL DI									
15	BLANK	SAMP	11-03-2020 04:54 pm	1.00	5.00 mL	0.00 mL	X110315.D	Liquid	Y	NA
16	VLCSW-201103	LCS	11-03-2020 05:15 pm	1.00	5.00 mL	0.00 mL	X110316.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
17	BLK	SAMP	11-03-2020 05:36 pm	1.00	5.00 mL	0.00 mL	X110317.D	Liquid	Y	NA
18	BLK	SAMP	11-03-2020 05:57 pm	1.00	5.00 mL	0.00 mL	X110318.D	Liquid	Y	NA
19	VBLKW-201103	MBLK	11-03-2020 06:18 pm	1.00	5.00 mL	0.00 mL	X110319.D	Liquid	Y	NA
20	HS20101149-02	SAMP	11-03-2020 06:39 pm	1.00	5.00 mL	0.00 mL	X110320.D	Liquid	Y	<2
21	HS20101149-01	SAMP	11-03-2020 07:00 pm	1.00	5.00 mL	0.00 mL	X110321.D	Liquid	Y	<2
22	HS20101123-12	SAMP	11-03-2020 07:21 pm	1.00	5.00 mL	0.00 mL	X110322.D	Liquid	Y	NA
23	HS20101123-01	SAMP	11-03-2020 07:42 pm	1.00	5.00 mL	0.00 mL	X110323.D	Liquid	Y	NA
24	HS20101123-01MS	MS	11-03-2020 08:04 pm	1.00	5.00 mL	0.00 mL	X110324.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
25	HS20101123-01MSD	MSD	11-03-2020 08:25 pm	1.00	5.00 mL	0.00 mL	X110325.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
26	HS20101123-01	SAMP	11-03-2020 08:46 pm	5.00	5.00 mL	0.00 mL	X110326.D	Liquid	Y	NA
27	HS20101123-02	SAMP	11-03-2020 09:07 pm	1.00	5.00 mL	0.00 mL	X110327.D	Liquid	Y	NA
28	HS20101123-03	SAMP	11-03-2020 09:28 pm	1.00	5.00 mL	0.00 mL	X110328.D	Liquid	Y	NA
29	HS20101123-04	SAMP	11-03-2020 09:49 pm	1.00	5.00 mL	0.00 mL	X110329.D	Liquid	Y	NA
30	CCV-END	CCV	11-03-2020 10:10 pm	1.00	5.00 mL	0.00 mL	X110330.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
31	BFB	TUNE	11-03-2020 10:31 pm	1.00	0.00 mL	0.00 mL	Y110301a.D	Liquid	Y	NA
32	BFB	TUNE	11-03-2020 10:52 pm	1.00	0.00 mL	0.00 mL	Y110302.D	Liquid	Y	NA
33	CCV	CCV	11-03-2020 11:13 pm	1.00	5.00 mL	0.00 mL	Y110303.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
34	BLANK	SAMP	11-03-2020 11:34 pm	1.00	5.00 mL	0.00 mL	Y110304.D	Liquid	Y	NA
35	VLCSW-201103	LCS	11-03-2020 11:55 pm	1.00	5.00 mL	0.00 mL	Y110305.D	Liquid	Y	NA
36	BLK	SAMP	11-04-2020 12:16 am	1.00	5.00 mL	0.00 mL	Y110306.D	Liquid	Y	NA
37	VBLKW-201103	MBLK	11-04-2020 12:37 am	1.00	5.00 mL	0.00 mL	Y110307.D	Liquid	Y	NA
38	HS20101240-10	SAMP	11-04-2020 12:58 am	1.00	5.00 mL	0.00 mL	Y110308.D	Liquid	Y	NA
39	HS20101123-10	SAMP	11-04-2020 01:19 am	500.0(	5.00 mL	0.00 mL	Y110309.D	Liquid	Y	NA
40	HS20101123-11	SAMP	11-04-2020 01:40 am	500.0(	5.00 mL	0.00 mL	Y110310.D	Liquid	Y	NA
41	HS20101240-09	SAMP	11-04-2020 02:01 am	500.0(	5.00 mL	0.00 mL	Y110311.D	Liquid	Y	NA
42	HS20101123-05	SAMP	11-04-2020 02:22 am	5.00	5.00 mL	0.00 mL	Y110312.D	Liquid	Y	NA
43	HS20101123-05	SAMP	11-04-2020 02:43 am	25.00	5.00 mL	0.00 mL	Y110313.D	Liquid	Y	NA
44	HS20101123-05MS	MS	11-04-2020 03:04 am	25.00	5.00 mL	0.00 mL	Y110314.D	Liquid	Y	NA
45	HS20101123-05MSD	MSD	11-04-2020 03:25 am	25.00	5.00 mL	0.00 mL	Y110315.D	Liquid	Y	NA
46	BLK	SAMP	11-04-2020 03:46 am	1.00	5.00 mL	0.00 mL	Y110316.D	Liquid	Y	NA
47	HS20101240-01	SAMP	11-04-2020 04:07 am	1.00	5.00 mL	0.00 mL	Y110317.D	Liquid	Y	NA
48	HS20101240-02	SAMP	11-04-2020 04:29 am	1.00	5.00 mL	0.00 mL	Y110318.D	Liquid	Y	NA
49	HS20101240-03	SAMP	11-04-2020 04:50 am	1.00	5.00 mL	0.00 mL	Y110319.D	Liquid	Y	NA
50	HS20101240-06	SAMP	11-04-2020 05:11 am	1.00	5.00 mL	0.00 mL	Y110320.D	Liquid	Y	NA
51	HS20101240-04	SAMP	11-04-2020 05:32 am	1.00	5.00 mL	0.00 mL	Y110321.D	Liquid	Y	NA
52	HS20101240-04	SAMP	11-04-2020 05:53 am	10.00	5.00 mL	0.00 mL	Y110322.D	Liquid	Y	NA
53	HS20101123-06	SAMP	11-04-2020 06:14 am	5.00	5.00 mL	0.00 mL	Y110323.D	Liquid	Y	NA
54	HS20101123-06	SAMP	11-04-2020 06:35 am	25.00	5.00 mL	0.00 mL	Y110324.D	Liquid	Y	NA
55	HS20101123-07	SAMP	11-04-2020 06:56 am	5.00	5.00 mL	0.00 mL	Y110325.D	Liquid	Y	NA
56	HS20101123-07	SAMP	11-04-2020 07:17 am	50.00	5.00 mL	0.00 mL	Y110326.D	Liquid	Y	NA
57	HS20101123-08	SAMP	11-04-2020 07:38 am	5.00	5.00 mL	0.00 mL	Y110327.D	Liquid	Y	NA
58	HS20101123-08	SAMP	11-04-2020 07:59 am	50.00	5.00 mL	0.00 mL	Y110328.D	Liquid	Y	NA
59	HS20101123-09	SAMP	11-04-2020 08:20 am	50.00	5.00 mL	0.00 mL	Y110329.D	Liquid	Y	NA
60	HS20101123-09	SAMP	11-04-2020 08:41 am	500.0(	5.00 mL	0.00 mL	Y110330.D	Liquid	Y	NA
61	CCV-END	CCV	11-04-2020 09:02 am	1.00	5.00 mL	0.00 mL	Y110331.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-51-06
IS ID	31106-51-03
CAL STD ID	31106-54-01/02
BFB ID	31106-51-06
pH Paper	634-64-*10

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 (TOL) #	OTHER (DCE) #	TOT OUT
01	VLCSW-201103	98	98	97	106	0
02	VBLKW-201103	91	86	102	87	0
03	HS20101123-10	90	86	99	87	0
04	HS20101123-11	93	86	101	87	0
05	HS20101123-05	93	85	103	86	0
06	HS20101123-05	94	86	104	85	0
07	HS20101123-05	95	90	100	88	0
08	HS20101123-05	94	86	98	90	0
09	HS20101123-06	92	84	103	87	0
10	HS20101123-06	91	85	103	89	0
11	HS20101123-07	90	83	104	88	0
12	HS20101123-07	91	86	105	85	0
13	HS20101123-08	93	82	103	86	0
14	HS20101123-08	89	83	101	85	0
15	HS20101123-09	90	86	103	90	0
16	HS20101123-09	91	86	102	89	0
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= 4-Bromofluorobenzene	(70-130)
SMC2	= Dibromofluoromethane	(70-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER(DCE)	= 1,2-Dichloroethane-d4	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-201103

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID: Y110307 Lab Sample ID: VBLKW-201103

Date Analyzed: 11/04/20 Time Analyzed: 0037

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-201103	VLCSW-201103	Y110305	2355
02	HS20101123-1	HS20101123-10	Y110309	0119
03	HS20101123-1	HS20101123-11	Y110310	0140
04	HS20101123-0	HS20101123-05	Y110312	0222
05	HS20101123-0	HS20101123-05	Y110313	0243
06	HS20101123-0	HS20101123-05M	Y110314	0304
07	HS20101123-0	HS20101123-05M	Y110315	0325
08	HS20101123-0	HS20101123-06	Y110323	0614
09	HS20101123-0	HS20101123-06	Y110324	0635
10	HS20101123-0	HS20101123-07	Y110325	0656
11	HS20101123-0	HS20101123-07	Y110326	0717
12	HS20101123-0	HS20101123-08	Y110327	0738
13	HS20101123-0	HS20101123-08	Y110328	0759
14	HS20101123-0	HS20101123-09	Y110329	0820
15	HS20101123-0	HS20101123-09	Y110330	0841
16				
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID: Y110302 BFB Injection Date: 11/03/20

Instrument ID: VOA6 BFB Injection Time: 2252

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.0
75	30.0 - 60.0% of mass 95	56.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	1.7 (1.6)1
174	Greater than 50.0% of mass 95	106.1
175	5.0 - 9.0% of mass 174	7.5 (7.1)1
176	95.0 - 101.0% of mass 174	101.1 (95.4)1
177	5.0 - 9.0% of mass 176	7.9 (7.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	Y110303	11/03/20	2313
02	VLCSW-201103	VLCSW-201103	Y110305	11/03/20	2355
03	VBLKW-201103	VBLKW-201103	Y110307	11/04/20	0037
04	HS20101123-1	HS20101123-10	Y110309	11/04/20	0119
05	HS20101123-1	HS20101123-11	Y110310	11/04/20	0140
06	HS20101123-0	HS20101123-05	Y110312	11/04/20	0222
07	HS20101123-0	HS20101123-05	Y110313	11/04/20	0243
08	HS20101123-0	HS20101123-05M	Y110314	11/04/20	0304
09	HS20101123-0	HS20101123-05M	Y110315	11/04/20	0325
10	HS20101123-0	HS20101123-06	Y110323	11/04/20	0614
11	HS20101123-0	HS20101123-06	Y110324	11/04/20	0635
12	HS20101123-0	HS20101123-07	Y110325	11/04/20	0656
13	HS20101123-0	HS20101123-07	Y110326	11/04/20	0717
14	HS20101123-0	HS20101123-08	Y110327	11/04/20	0738
15	HS20101123-0	HS20101123-08	Y110328	11/04/20	0759
16	HS20101123-0	HS20101123-09	Y110329	11/04/20	0820
17	HS20101123-0	HS20101123-09	Y110330	11/04/20	0841
18	CCV-END	CCV-END	Y110331	11/04/20	0902
19					
20					
21					
22					

FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: VOA6 Calibration Date: 11/03/20 Time: 2313

Lab File ID: Y110303 Init. Calib. Date(s): 11/03/20 11/03/20

Init. Calib. Times: 1201 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5390000	0.5172079	0.5172079	0.1	4.04	20.00	AVRG
Trichloroethene	0.3330000	0.3115638	0.3115638	0.2	6.44	20.00	AVRG
Methylene Chloride	0.6860000	0.6073767	0.6073767	0.1	11.46	20.00	AVRG
cis-1,2-Dichloroethene	0.7330000	0.6819162	0.6819162	0.1	6.97	20.00	AVRG
Vinyl Chloride	1.1050000	0.9407411	0.9407411	0.1	14.86	20.00	AVRG
1,1,2-Trichloroethane	0.3080000	0.2878750	0.2878750	0.1	6.53	20.00	AVRG
1,1-Dichloroethene	0.9430000	0.8194881	0.8194881	0.1	13.10	20.00	AVRG
4-Bromofluorobenzene	49.292912	50.000000	0.4374219	0.1	1.41	20.00	2RDR
Dibromofluoromethane	0.6730000	0.6828413	0.6828413	0.1	-1.46	20.00	AVRG
Toluene-d8	1.3360000	1.3449046	1.3449046	0.1	-0.67	20.00	AVRG
1,2-Dichloroethane-d4	52.156476	50.000000	0.8285992	0.1	-4.31	20.00	2RDR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: VOA6 Calibration Date: 11/04/20 Time: 0902

Lab File ID: Y110331 Init. Calib. Date(s): 11/03/20 11/03/20

Init. Calib. Times: 1201 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dichloroethane	0.5390000	0.5283789	0.5283789	0.1	1.97	50.00	AVRG
Trichloroethene	0.3330000	0.3185904	0.3185904	0.2	4.33	50.00	AVRG
Methylene Chloride	0.6860000	0.6152318	0.6152318	0.1	10.32	50.00	AVRG
cis-1,2-Dichloroethene	0.7330000	0.7023572	0.7023572	0.1	4.18	50.00	AVRG
Vinyl Chloride	1.1050000	1.1055725	1.1055725	0.1	-0.05	50.00	AVRG
1,1,2-Trichloroethane	0.3080000	0.2957092	0.2957092	0.1	3.99	50.00	AVRG
1,1-Dichloroethene	0.9430000	0.9225043	0.9225043	0.1	2.17	50.00	AVRG
4-Bromofluorobenzene	48.900450	50.000000	0.4338028	0.1	2.20	50.00	2RDR
Dibromofluoromethane	0.6730000	0.7115660	0.7115660	0.1	-5.73	50.00	AVRG
Toluene-d8	1.3360000	1.2907700	1.2907700	0.1	3.38	50.00	AVRG
1,2-Dichloroethane-d4	54.143309	50.000000	0.8616760	0.1	-8.29	50.00	2RDR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID (Standard): Y110303 Date Analyzed: 11/03/20

Instrument ID: VOA6 Time Analyzed: 2313

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(DFB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	275048	4.97	254482	7.67	118289	9.66
	UPPER LIMIT	550096	5.47	508964	8.17	236578	10.16
	LOWER LIMIT	137524	4.47	127241	7.17	59145	9.16
	CLIENT SAMPLE NO.						
01	VLCSW-201103	276286	4.97	252735	7.67	110995	9.66
02	VBLKW-201103	228354	4.97	202824	7.67	81367	9.67
03	HS20101123-10	236227	4.97	219209	7.67	85657	9.66
04	HS20101123-11	233751	4.97	211581	7.67	81104	9.66
05	HS20101123-05	226796	4.97	200541	7.67	81333	9.66
06	HS20101123-05	229477	4.97	203934	7.67	86116	9.66
07	HS20101123-05	240426	4.97	219229	7.67	89432	9.66
08	HS20101123-05	238830	4.97	217554	7.67	90752	9.66
09	HS20101123-06	224071	4.97	198948	7.67	81994	9.66
10	HS20101123-06	216990	4.97	187199	7.67	75762	9.66
11	HS20101123-07	218305	4.97	186679	7.67	71904	9.66
12	HS20101123-07	216281	4.97	189071	7.67	75568	9.66
13	HS20101123-08	225902	4.97	193708	7.67	81848	9.67
14	HS20101123-08	218392	4.97	189579	7.67	74046	9.66
15	HS20101123-09	214670	4.97	183436	7.67	71887	9.67
16	HS20101123-09	217446	4.97	197669	7.67	81342	9.67
17							
18							
19							
20							

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Lab File ID (Standard): Y110303 Date Analyzed: 11/03/20

Instrument ID: VOA6 Time Analyzed: 2313

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

	CLIENT SAMPLE NO.	IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	150256	4.19				
	UPPER LIMIT	300512	4.69				
	LOWER LIMIT	75128	3.69				
01	VLCSW-201103	143812	4.19				
02	VBLKW-201103	131996	4.19				
03	HS20101123-10	135116	4.18				
04	HS20101123-11	135102	4.18				
05	HS20101123-05	132151	4.18				
06	HS20101123-05	133779	4.18				
07	HS20101123-05	136609	4.18				
08	HS20101123-05	140507	4.18				
09	HS20101123-06	130850	4.18				
10	HS20101123-06	128973	4.18				
11	HS20101123-07	130520	4.19				
12	HS20101123-07	126956	4.19				
13	HS20101123-08	133580	4.19				
14	HS20101123-08	129262	4.19				
15	HS20101123-09	125520	4.18				
16	HS20101123-09	128272	4.18				
17							
18							
19							
20							

IS4 = Pentafluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110302.D

Date : 03-NOV-2020 22:52

Client ID: BFB

Instrument: voa6.i

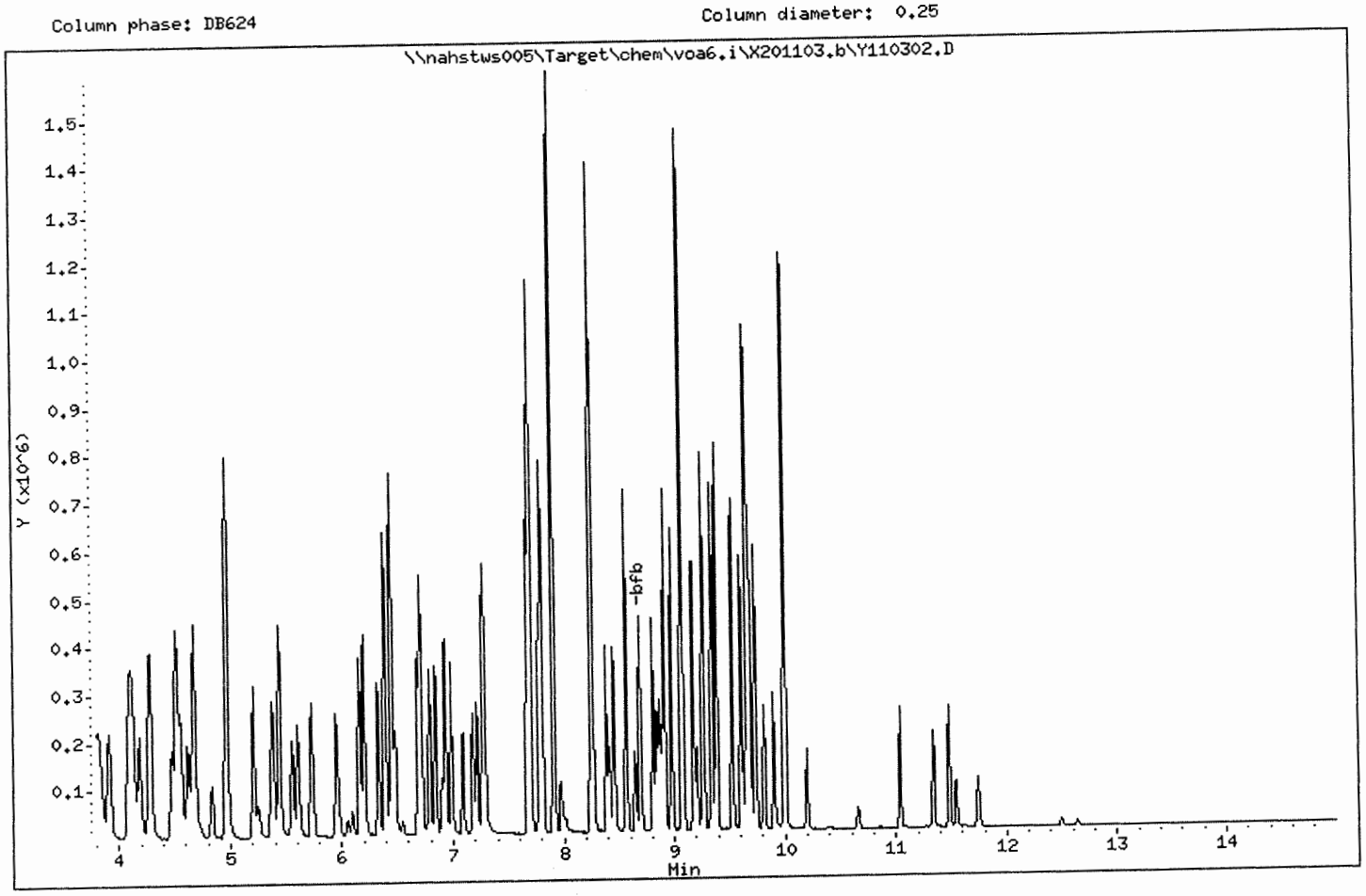
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110302.D

Date : 03-NOV-2020 22:52

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

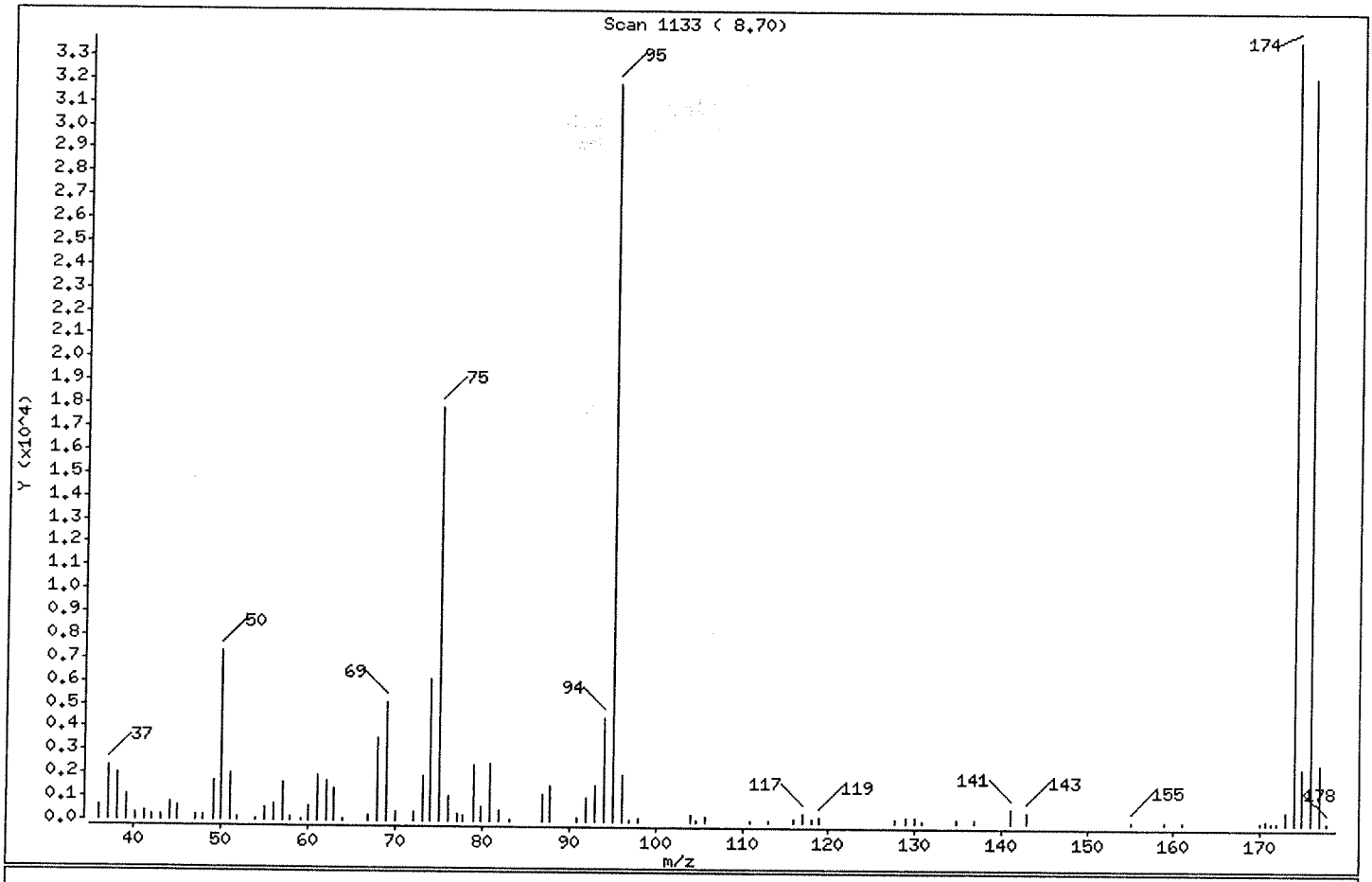
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.97
75	30.00 - 60.00% of mass 95	56.06
96	5.00 - 9.00% of mass 95	6.31
173	Less than 2.00% of mass 174	1.66 (1.57)
174	Greater than 50.00% of mass 95	106.06
175	5.00 - 9.00% of mass 174	7.53 (7.10)
176	95.00 - 101.00% of mass 174	101.13 (95.36)
177	5.00 - 9.00% of mass 176	7.94 (7.85)

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110302.D

Date : 03-NOV-2020 22:52

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: Y110302.D
Spectrum: Scan 1133 (8.70)
Location of Maximum: 173.90
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	632	59.10	65	83.10	53	128.90	210
37.00	2291	60.00	645	86.90	1195	130.00	227
38.00	2027	61.00	1919	87.80	1547	130.70	109
39.10	1101	62.00	1708	90.90	186	134.70	163
40.10	284	62.90	1423	92.00	1024	136.80	175
41.20	350	64.00	68	93.00	1589	140.90	647
41.90	257	66.80	205	94.00	4483	142.90	429
43.10	262	68.00	3543	95.00	31840	155.00	96
44.10	768	69.00	5124	96.00	2010	159.00	65
44.90	583	69.90	378	97.00	53	161.00	58
47.00	254	72.00	357	97.90	133	170.10	63
47.90	257	73.10	1972	104.00	313	170.70	132
49.00	1687	74.00	6143	104.70	104	171.30	62
50.00	7314	75.00	17848	105.60	237	171.90	101
51.00	2024	76.00	1110	110.90	88	173.00	529
51.80	190	77.00	286	113.10	77	173.90	33768
54.00	54	77.70	248	115.90	160	174.90	2399
55.00	557	78.90	2423	116.90	411	175.90	32200
56.00	718	79.90	614	118.00	125	176.90	2528
57.00	1609	80.90	2495	118.80	264	177.80	102
57.80	183	81.90	478	127.70	148		

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110303.D Page 1
Report Date: 30-Nov-2020 16:03

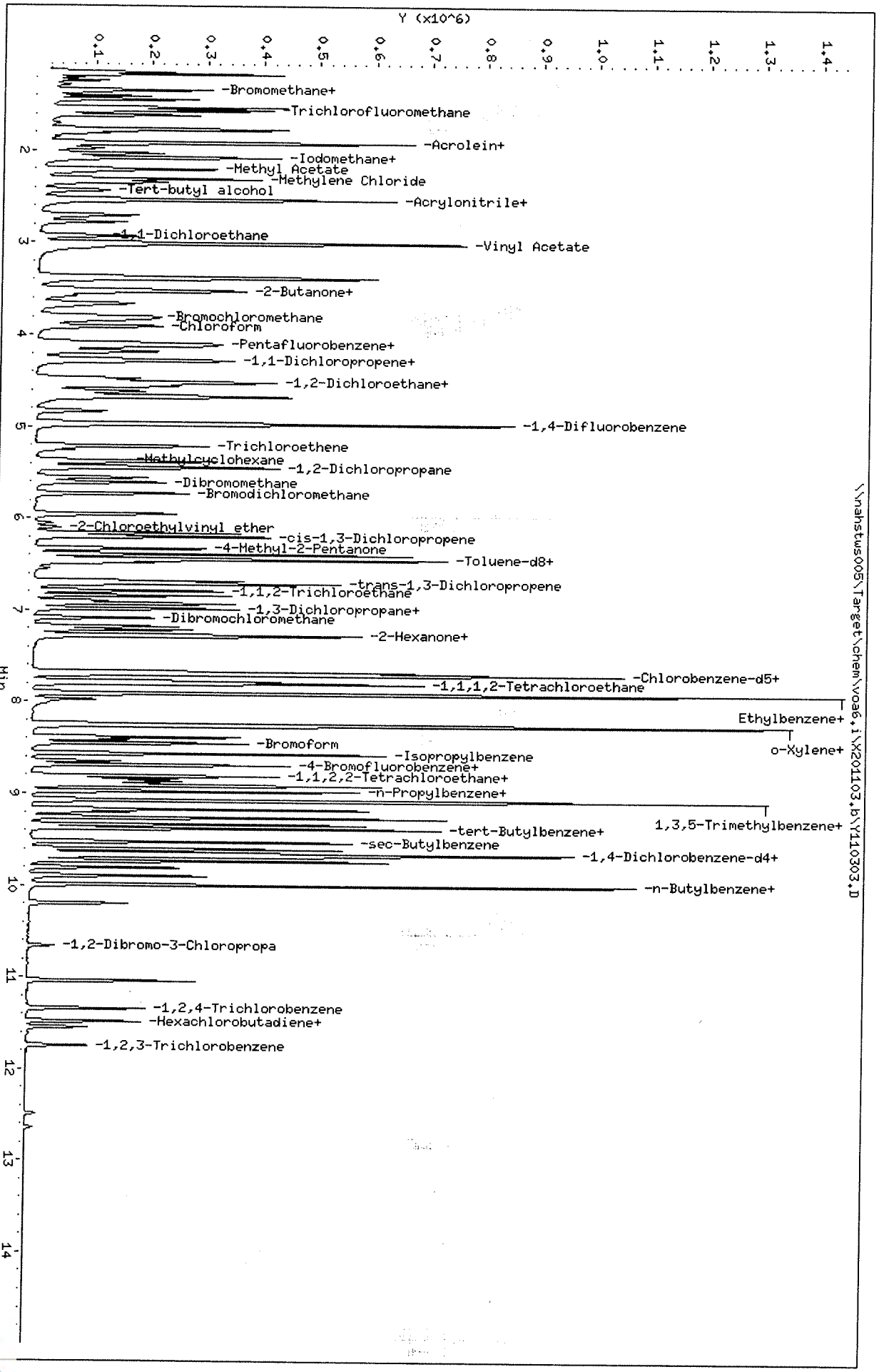
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110303.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 03-NOV-2020 23:13
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:03 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 33 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	150256	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	275048	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	254482	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	118289	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	124502	50.0000	52.15
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	111316	50.0000	49.29
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	102601	50.0000	50.70
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	342254	50.0000	50.35
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	73259	50.0000	46.67
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	123133	50.0000	43.43
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	142257	50.0000	47.96
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	102462	50.0000	46.49
17 Methylene Chloride	84	2.306	2.306	(0.550)	91262	50.0000	44.23
38 Trichloroethene	130	5.207	5.207	(1.048)	85695	50.0000	46.75
5 Vinyl Chloride	62	1.145	1.145	(0.273)	141352	50.0000	42.57



Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\Y110303.D
Date : 03-NOV-2020 23:13
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110305.D Page 1
Report Date: 30-Nov-2020 16:07

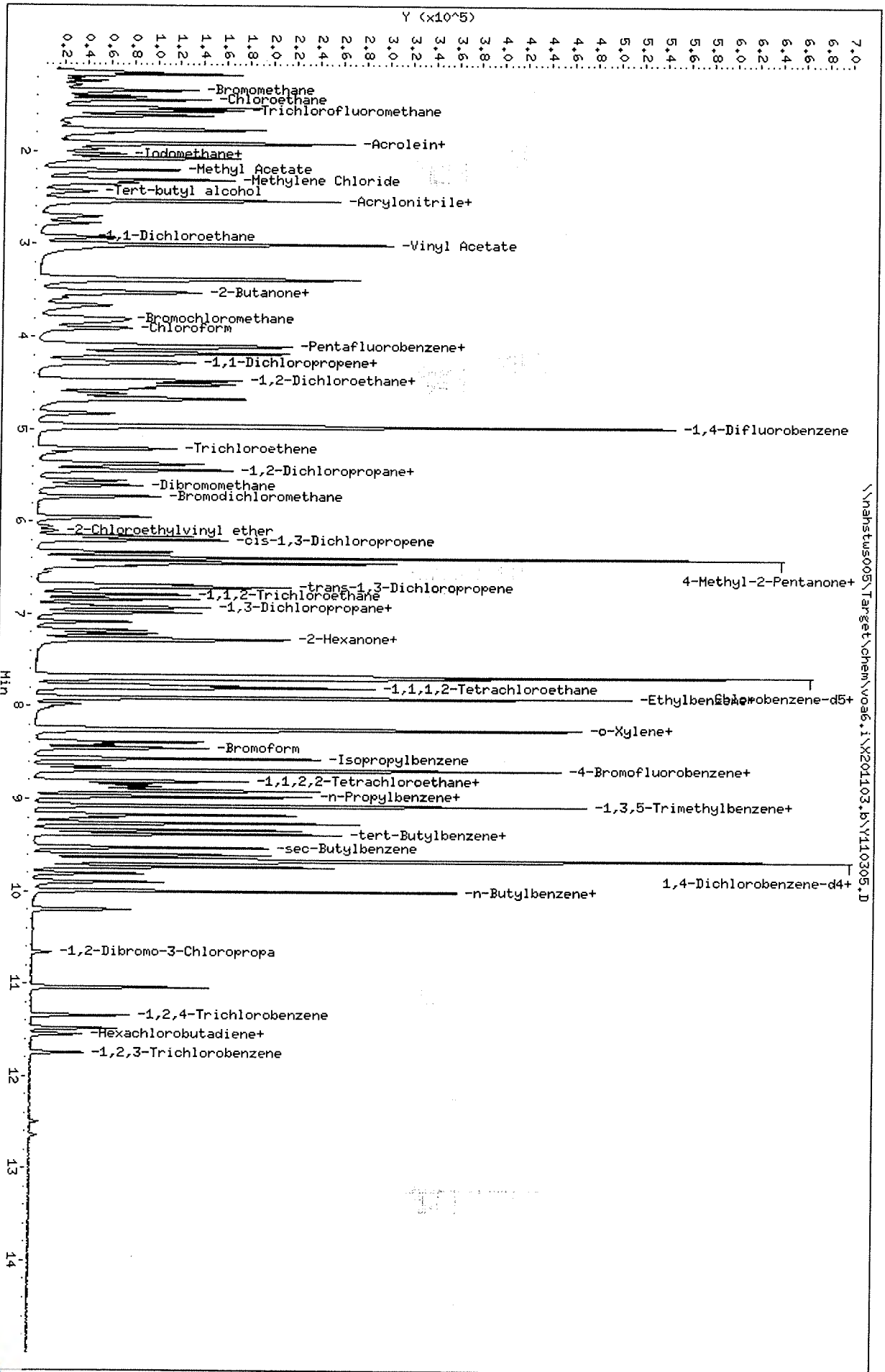
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110305.D
Lab Smp Id: VLCSW-201103 Client Smp ID: VLCSW-201103
Inj Date : 03-NOV-2020 23:55
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-201103;VLCSW-201103;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:06 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 35 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	143812	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	276286	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	252735	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	110995	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	121659	53.2003	53.20
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	110182	49.1343	49.13
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	95096	49.1012	49.10
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	328913	48.7239	48.72
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	29796	19.1144	19.11
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	51598	19.0165	19.01
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	53863	18.0804	18.08
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	38220	18.1222	18.12
17 Methylene Chloride	84	2.306	2.305	(0.550)	34795	17.6220	17.62
38 Trichloroethene	130	5.214	5.206	(1.049)	33065	17.9586	17.95
5 Vinyl Chloride	62	1.145	1.145	(0.273)	56893	17.9044	17.90



Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\Y110305.D
Date : 03-NOV-2020 23:55
Client ID: VLCSW-201103
Sample Info: VLCSW-201103;VLCSW-201103;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110307.D Page 1
Report Date: 30-Nov-2020 16:07

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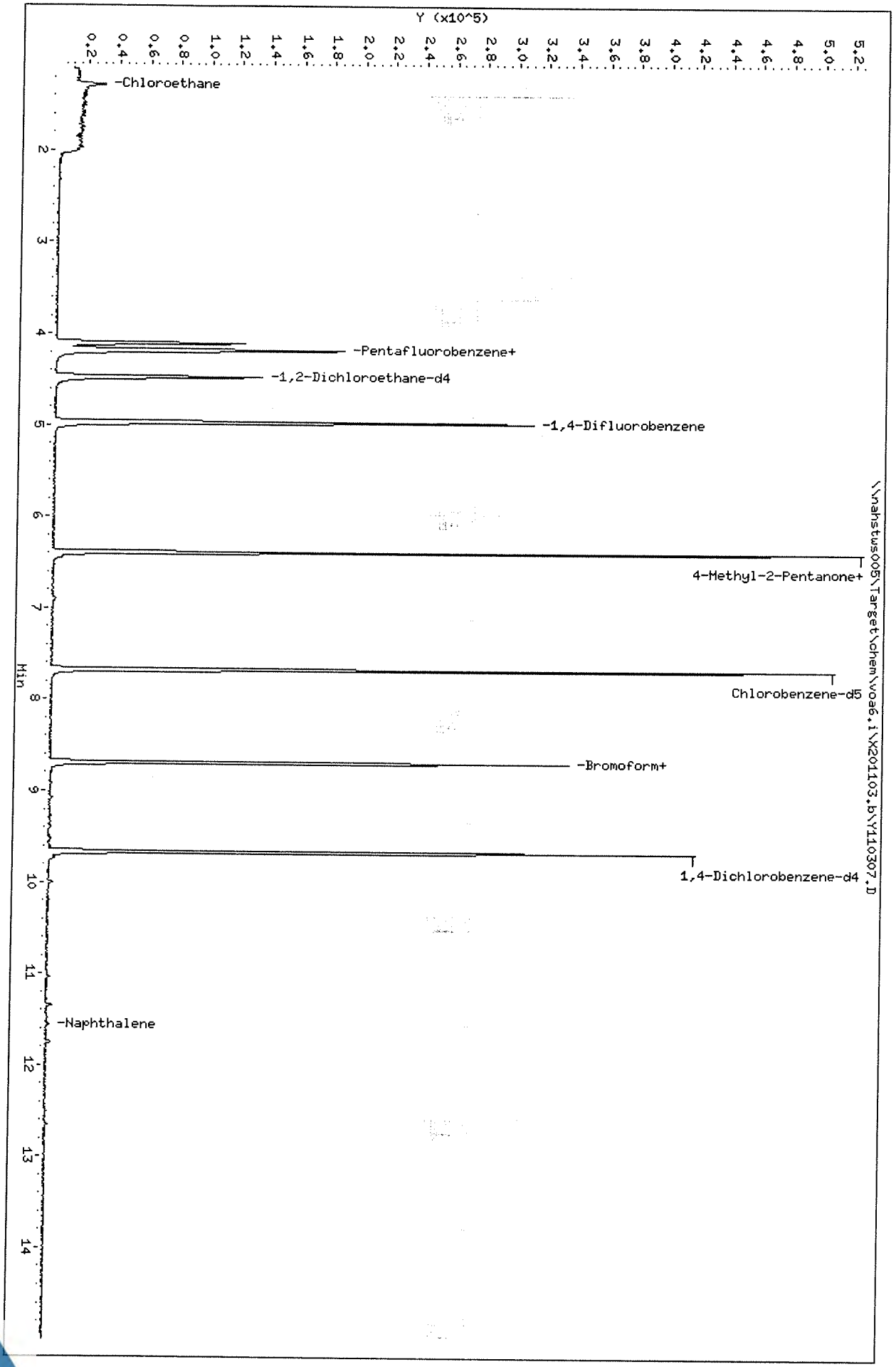
Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110307.D
Lab Smp Id: VBLKW-201103 Client Smp ID: VBLKW-201103
Inj Date : 04-NOV-2020 00:37
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-201103;VBLKW-201103;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:06 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 37 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	131996	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	228354	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	202824	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	81367	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	90679	43.5504	43.55
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	81358	45.3472	45.34
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	76042	42.7777	42.77
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	276148	50.9740	50.97



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110307.D
Date : 04-NOV-2020 00:37
Client ID: VBLKW-201103
Sample Info: VBLKW-201103;VBLKW-201103;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110309.D Page 1
Report Date: 30-Nov-2020 16:01

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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110309.D
Lab Smp Id: HS20101123-10 Client Smp ID: HS20101123-10
Inj Date : 04-NOV-2020 01:19
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-10;HS20101123-10;;;
Misc Info : HS18090001;WATER;0;500;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 39
Dil Factor: 500.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	500.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

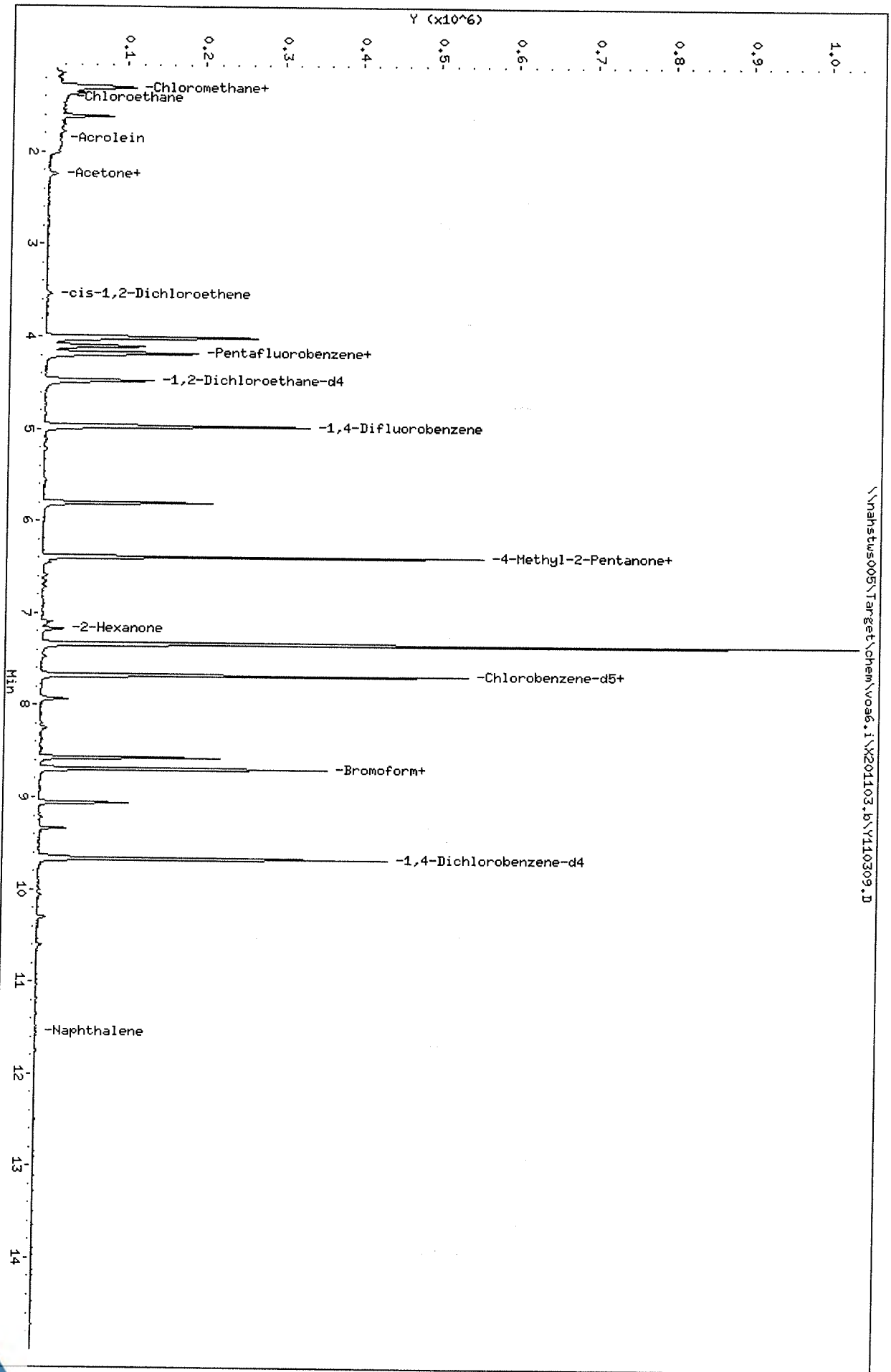
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	135116	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	236227	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	219209	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	85657	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	92933	43.6006	43.60
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	87022	44.8953	44.89
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	77856	42.7868	42.78
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	289438	49.4338	49.43
27 cis-1,2-Dichloroethene	96	3.537	3.530	(0.846)	2969	1.49837	749.18(a)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	3019	1.01123	505.61(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110309.D
Date : 04-NOV-2020 01:19
Client ID: HS20101123-10
Sample Info: HS20101123-10;HS20101123-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110309.D

Date : 04-NOV-2020 01:19

Client ID: HS20101123-10

Instrument: voa6.i

Sample Info: HS20101123-10;HS20101123-10;;;

Purge Volume: 5.0

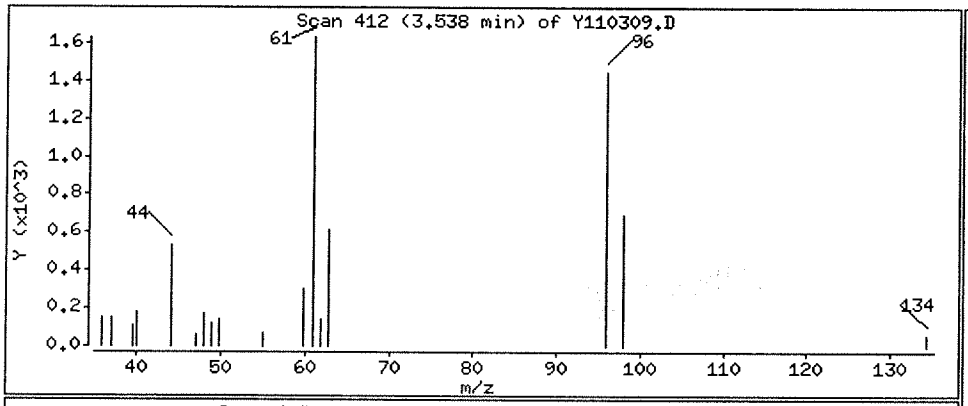
Operator: PC

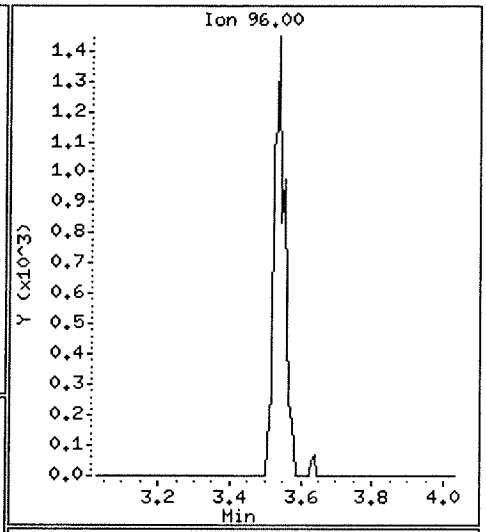
Column phase: DB624

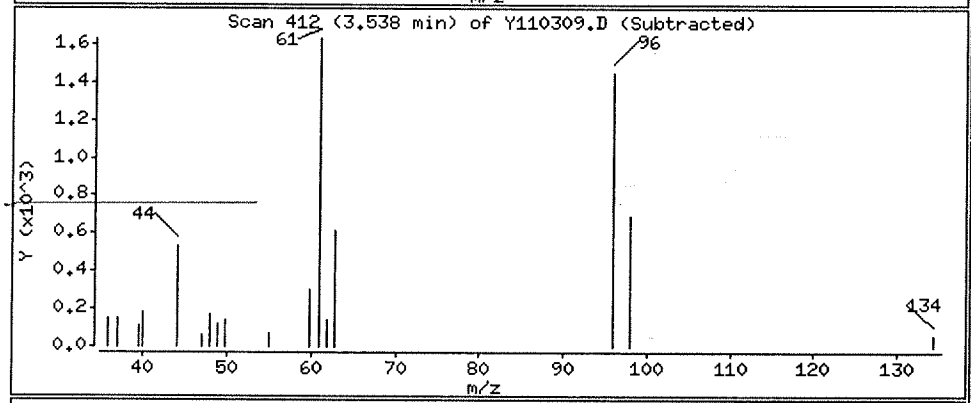
Column diameter: 0.18

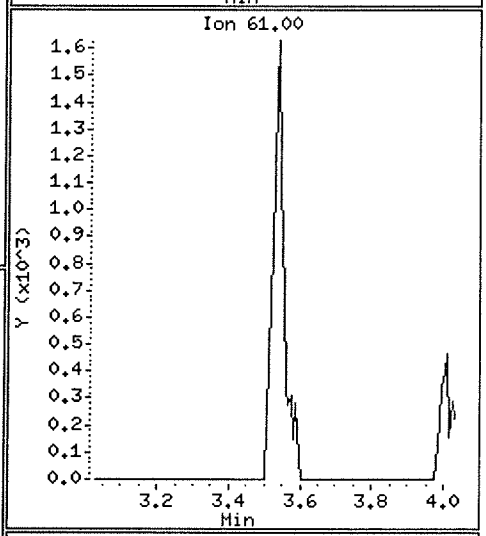
27 cis-1,2-Dichloroethene

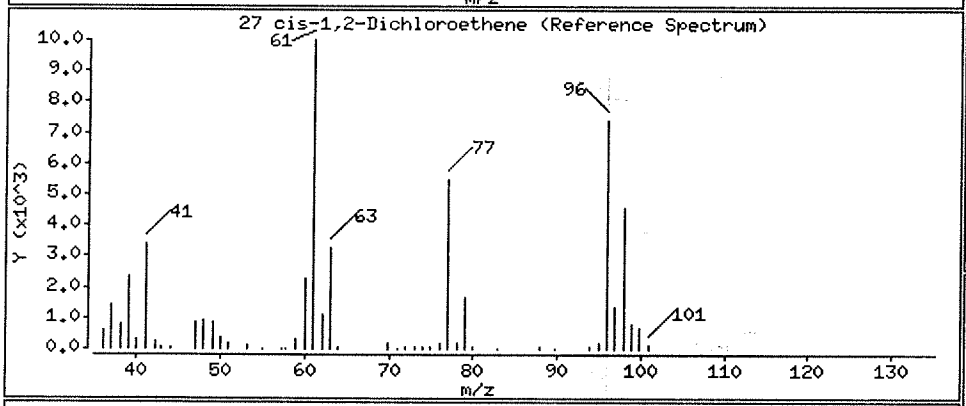
Concentration: 749.18 ug/l

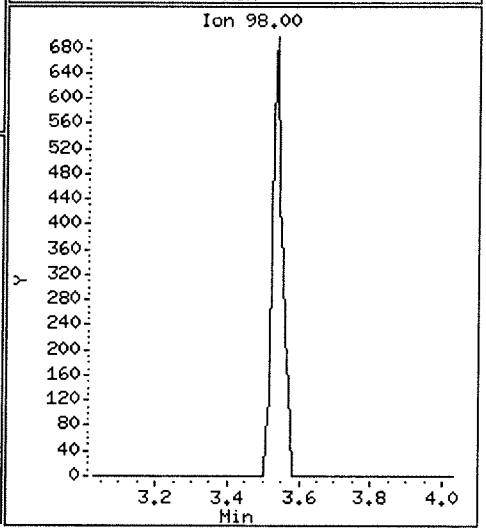


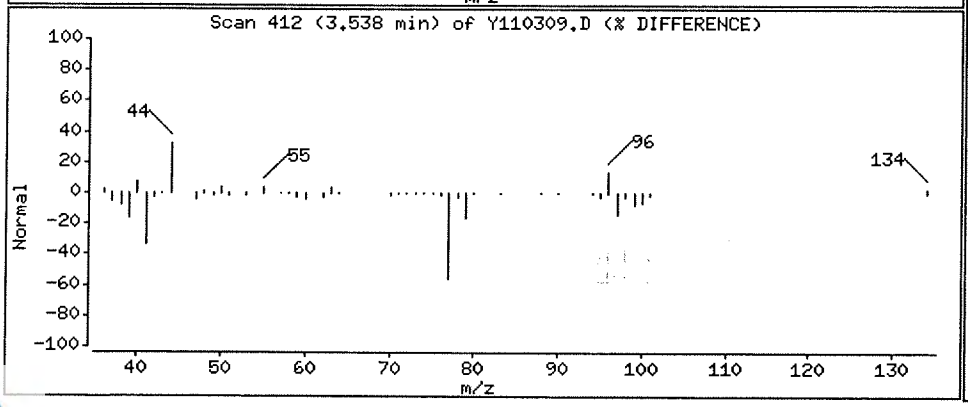












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110309.D

Date : 04-NOV-2020 01:19

Client ID: HS20101123-10

Instrument: voa6.i

Sample Info: HS20101123-10;HS20101123-10;;;

Purge Volume: 5.0

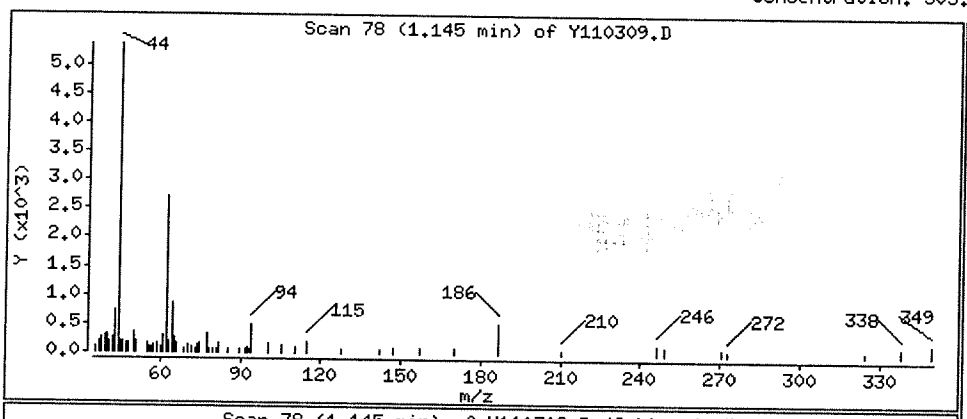
Operator: PC

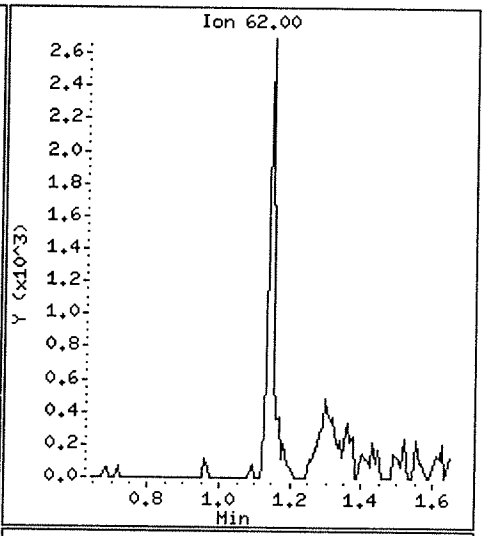
Column phase: DB624

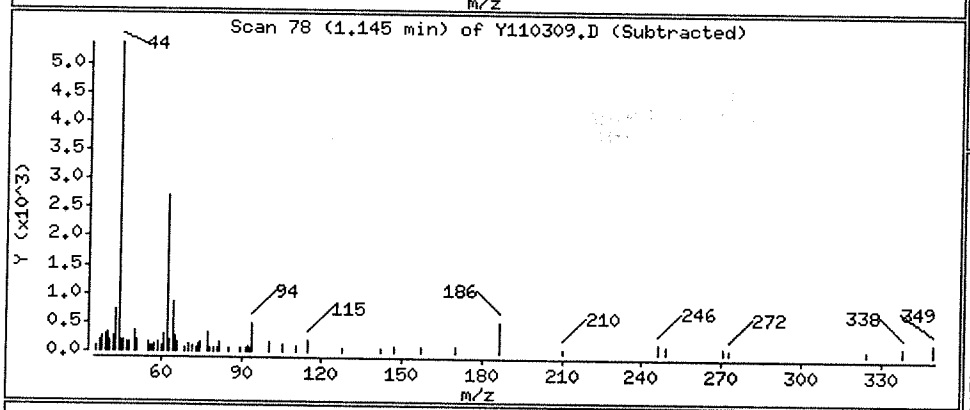
Column diameter: 0.18

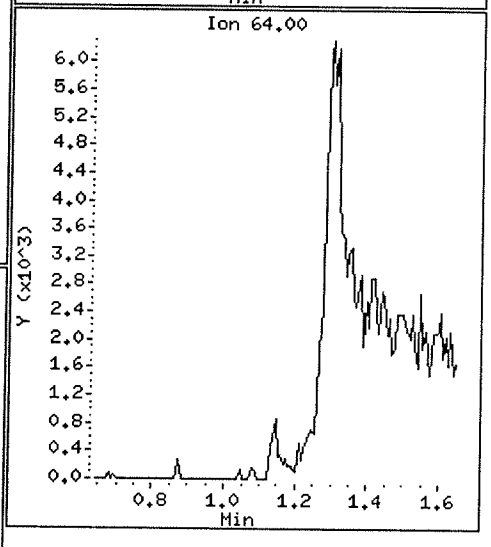
5 Vinyl Chloride

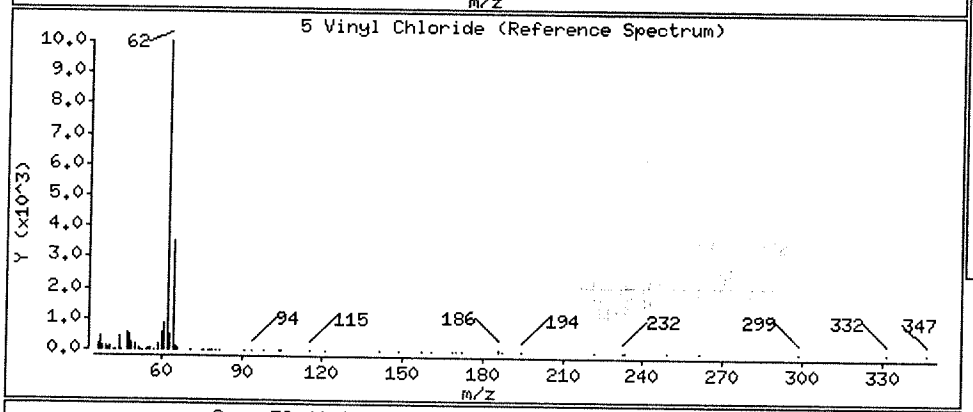
Concentration: 505.61 ug/l

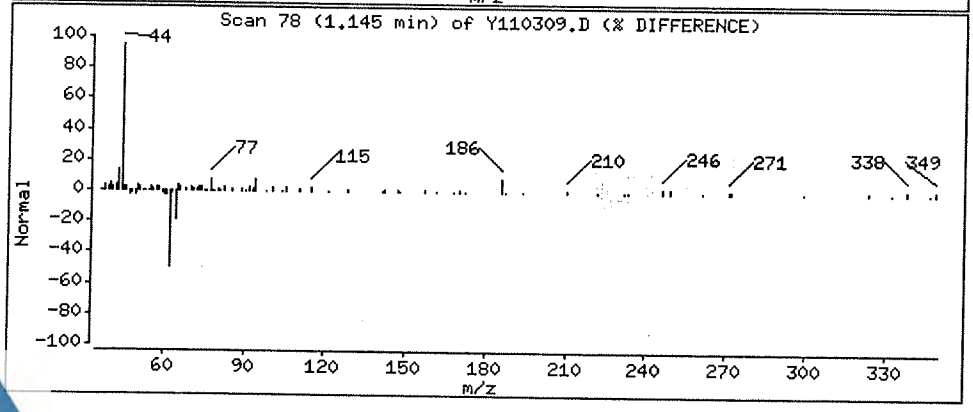












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110310.D Page 1
Report Date: 30-Nov-2020 16:01

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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110310.D
Lab Smp Id: HS20101123-11 Client Smp ID: HS20101123-11
Inj Date : 04-NOV-2020 01:40
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-11;HS20101123-11;;;
Misc Info : HS18090001;WATER;0;500;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 40
Dil Factor: 500.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

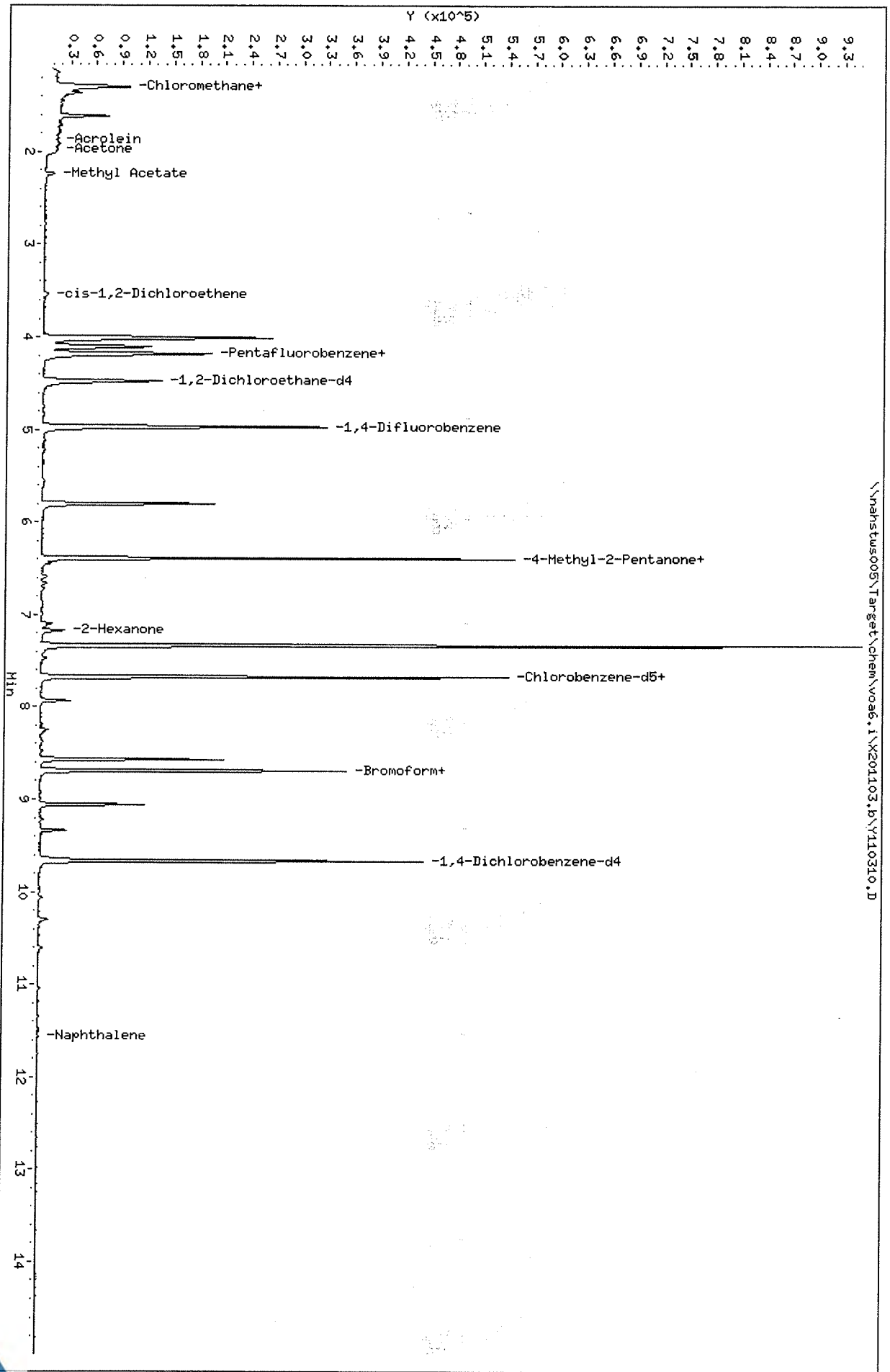
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	500.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	135102	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	233751	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	211581	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	81104	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	92554	43.4329	43.43
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	86997	46.4418	46.44
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	78564	43.1804	43.18
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	284352	50.3160	50.31
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.846)	2071	1.04528	522.64(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstus005\Target\chem\voa6.i\X201103.b\Y110310.D
Date : 04-NOV-2020 01:40
Client ID: HS20101123-11
Sample Info: HS20101123-11;HS20101123-11;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110310.D

Date : 04-NOV-2020 01:40

Client ID: HS20101123-11

Instrument: voa6.i

Sample Info: HS20101123-11;HS20101123-11;;;

Purge Volume: 5.0

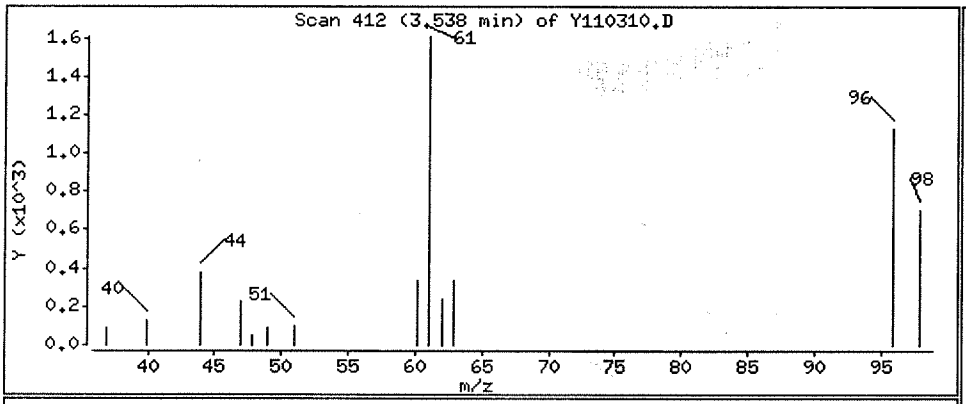
Operator: PC

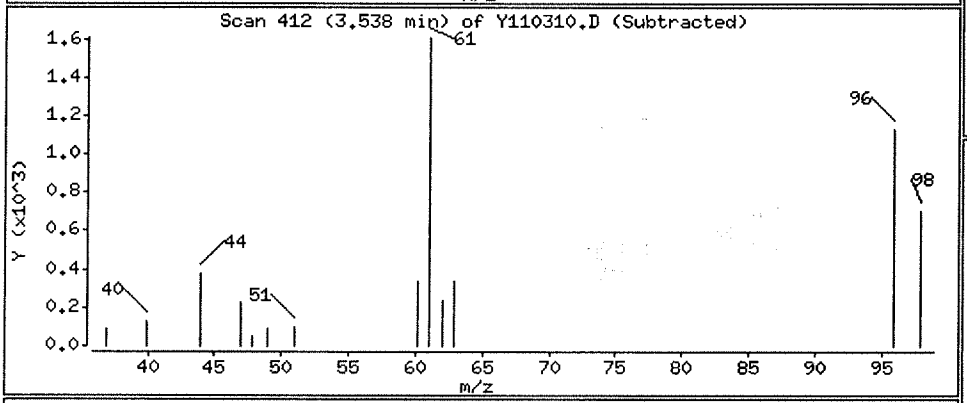
Column phase: DB624

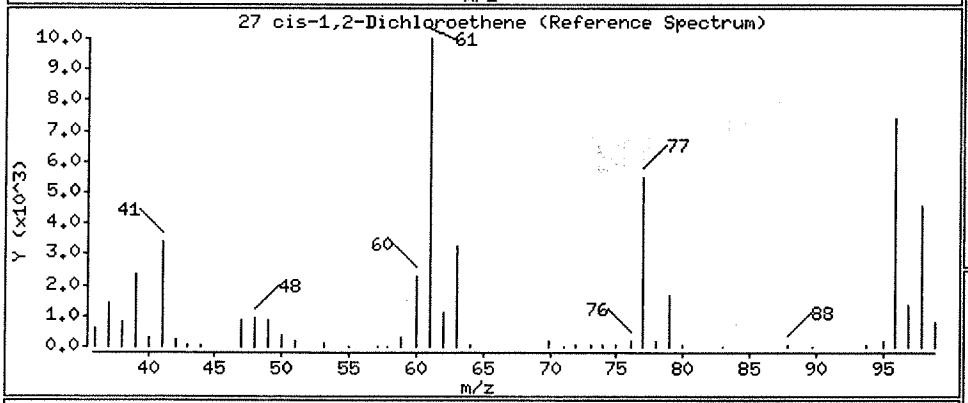
Column diameter: 0.18

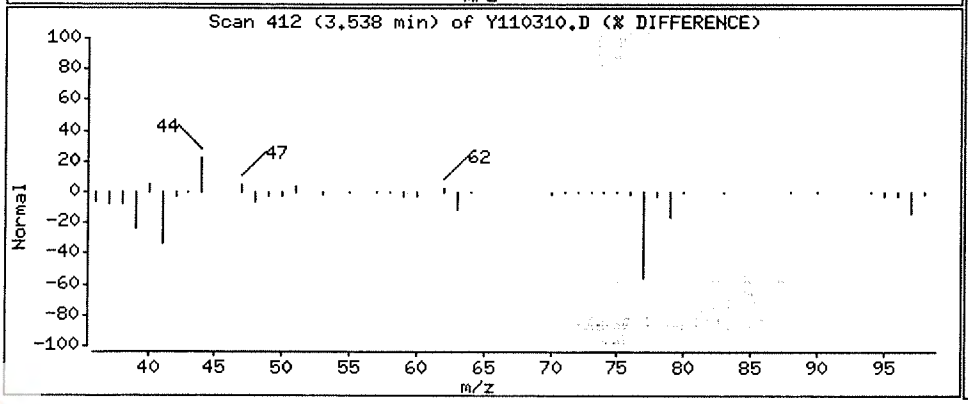
27 cis-1,2-Dichloroethene

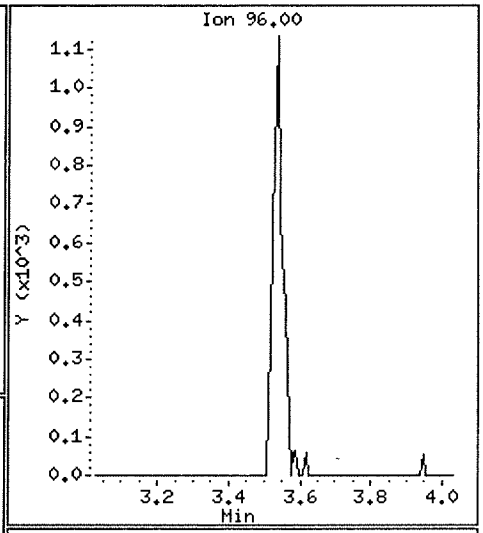
Concentration: 522.64 ug/l

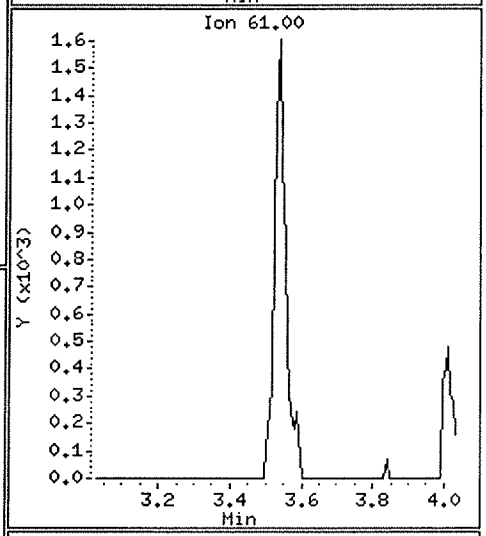


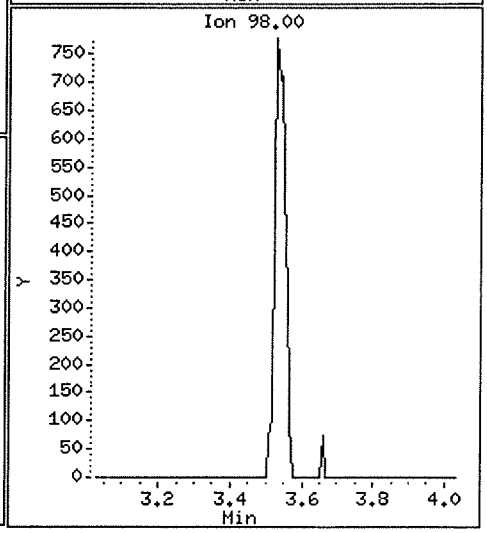












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Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D
Lab Smp Id: HS20101123-05 Client Smp ID: HS20101123-05
Inj Date : 04-NOV-2020 02:22
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-05;HS20101123-05;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 42
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

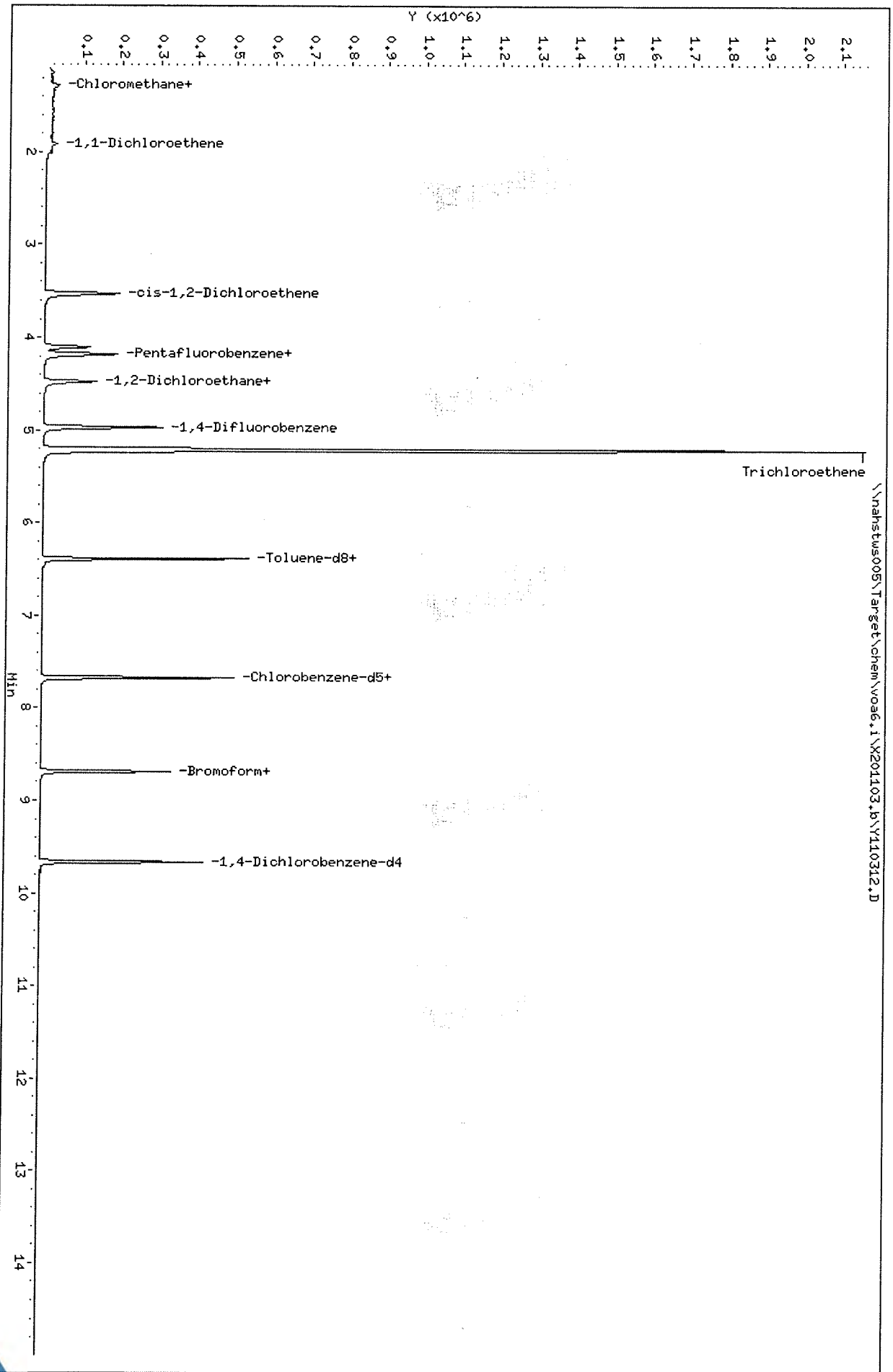
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	132151	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	226796	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	200541	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	81333	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	89894	43.1364	43.13
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	82406	46.4138	46.41
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	75981	42.6933	42.69
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	276843	51.6841	51.68
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	3716	1.49039	7.45(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	2916	1.19242	5.96(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	89457	46.1594	230.79
38 Trichloroethene	130	5.206	5.206	(1.048)	561190	371.312	1856.55(A)
5 Vinyl Chloride	62	1.138	1.145	(0.272)	3700	1.26715	6.33(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D
Date : 04-NOV-2020 02:22
Client ID: HS20101123-05
Sample Info: HS20101123-05;HS20101123-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D

Date : 04-NOV-2020 02:22

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

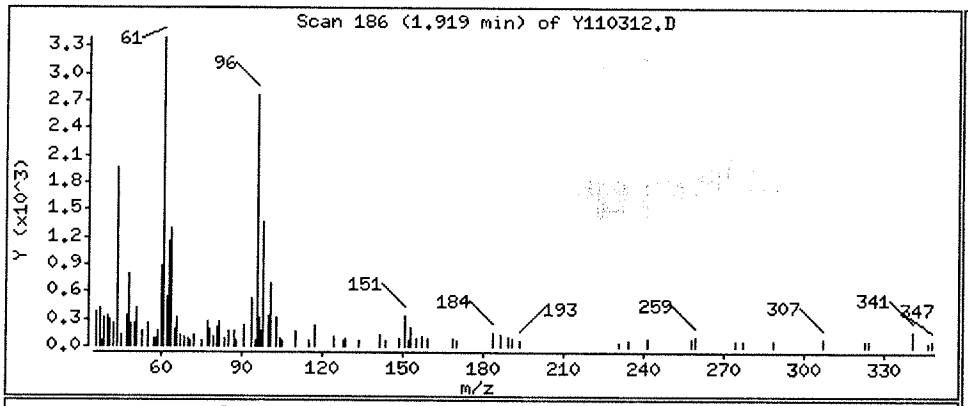
Operator: PC

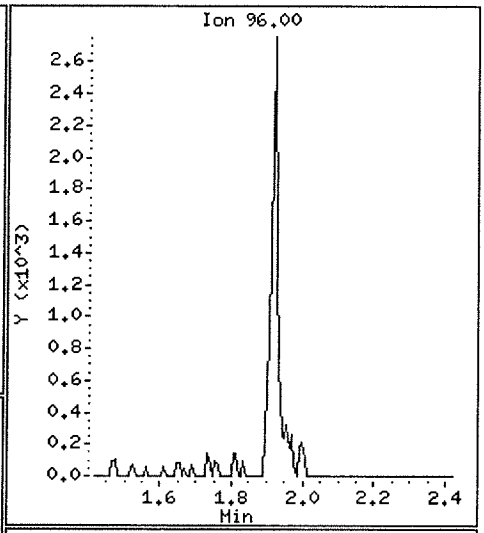
Column phase: DB624

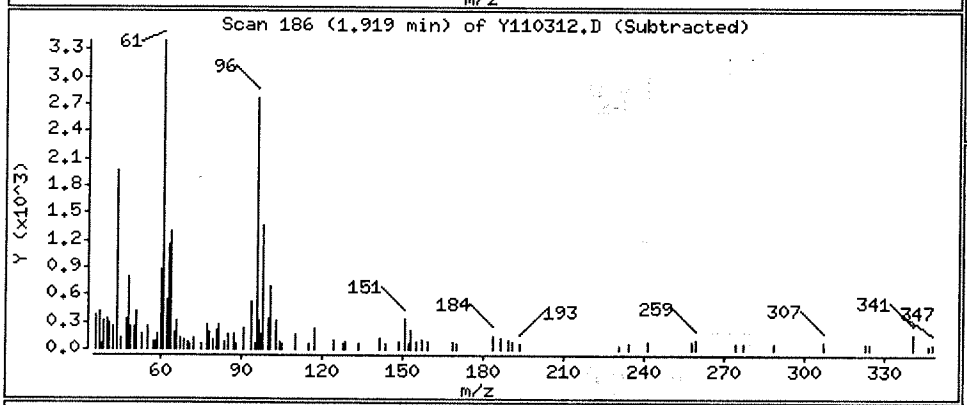
Column diameter: 0.18

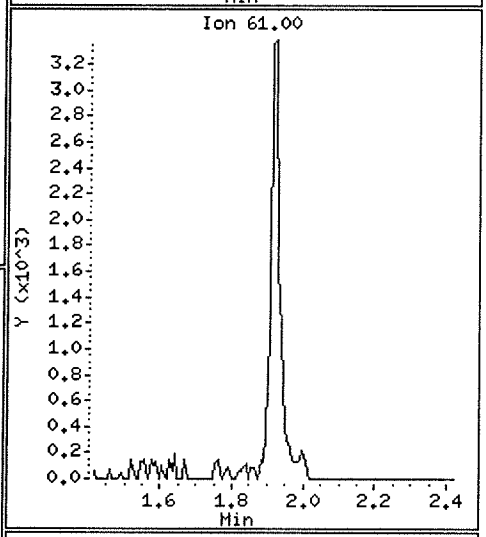
11 1,1-Dichloroethene

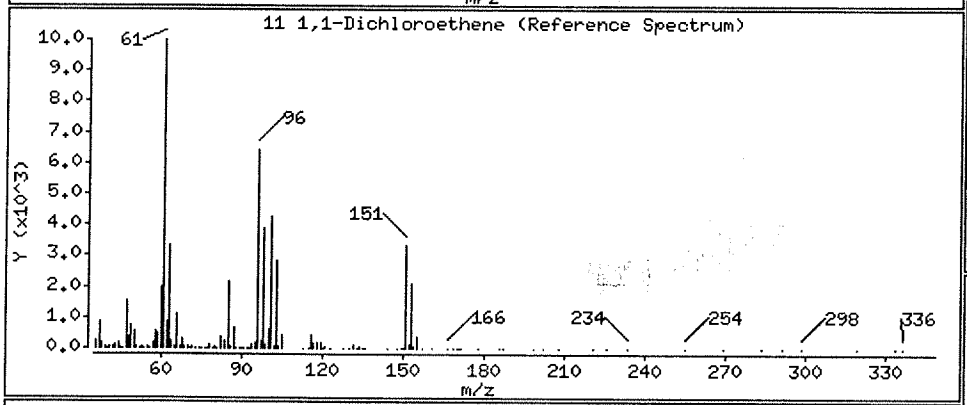
Concentration: 7.45 ug/l

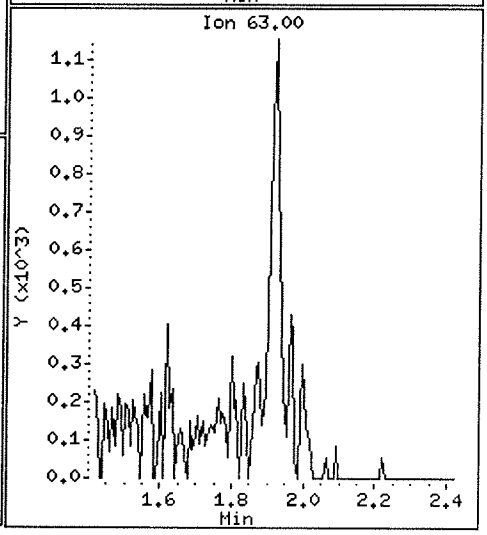


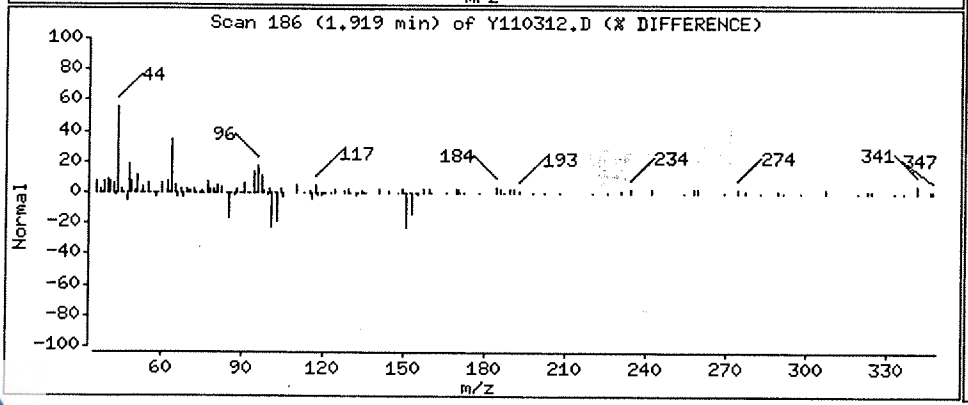












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D

Date : 04-NOV-2020 02:22

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

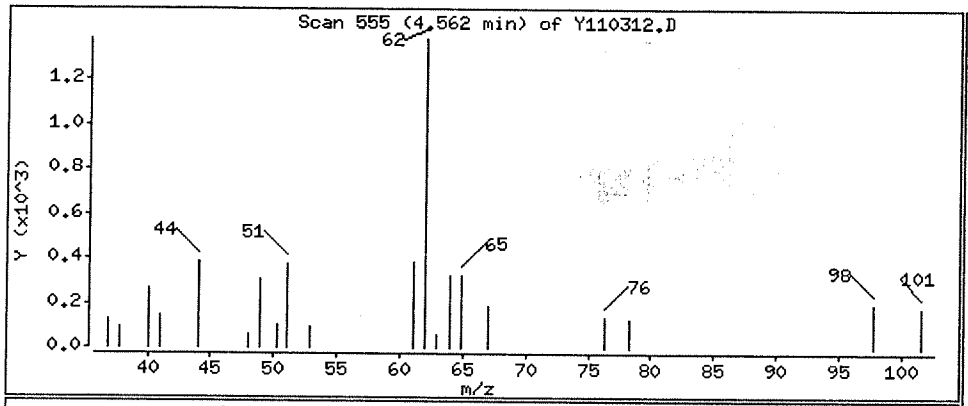
Operator: PC

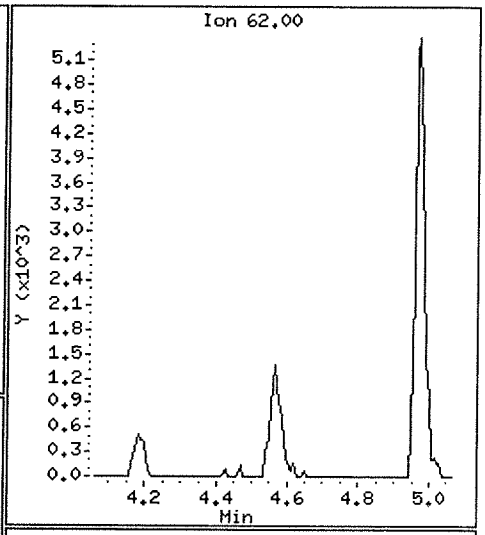
Column phase: DB624

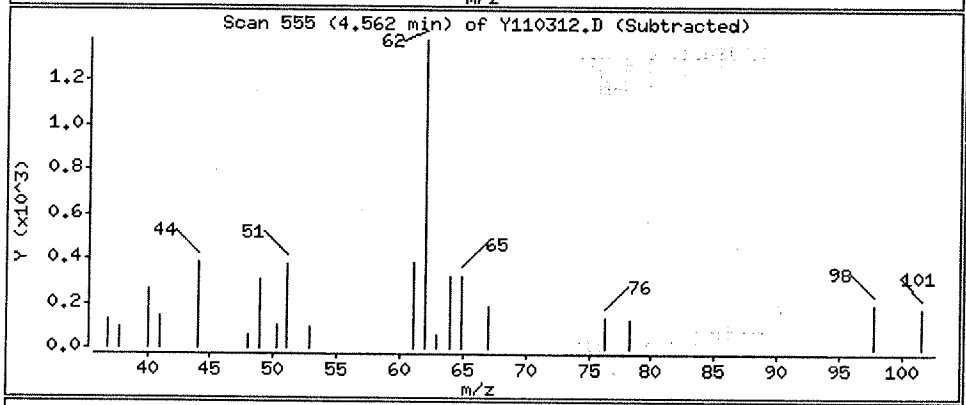
Column diameter: 0.18

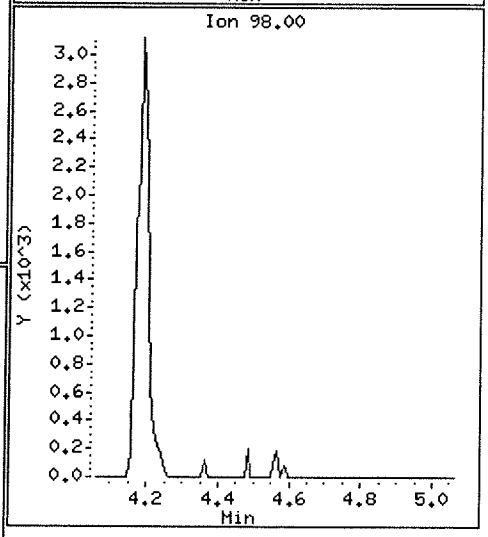
33 1,2-Dichloroethane

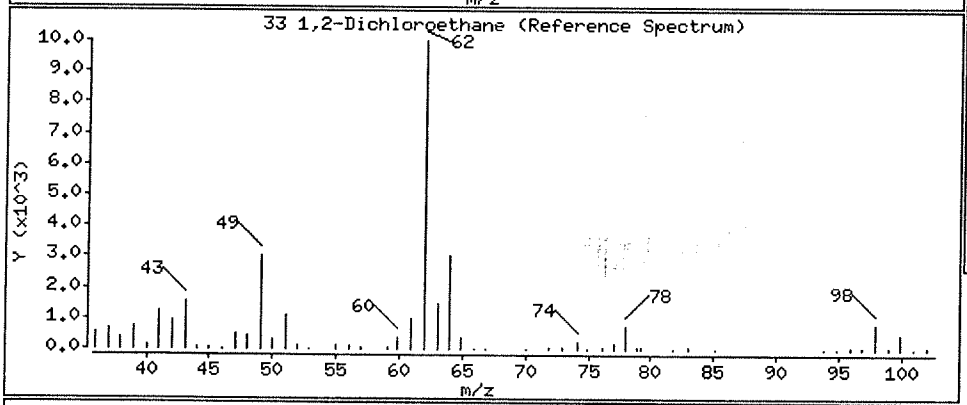
Concentration: 5.96 ug/l

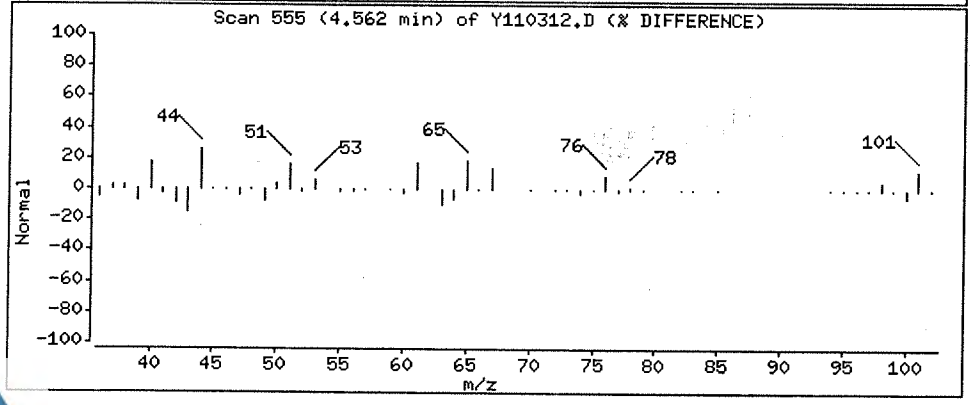












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D

Date : 04-NOV-2020 02:22

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

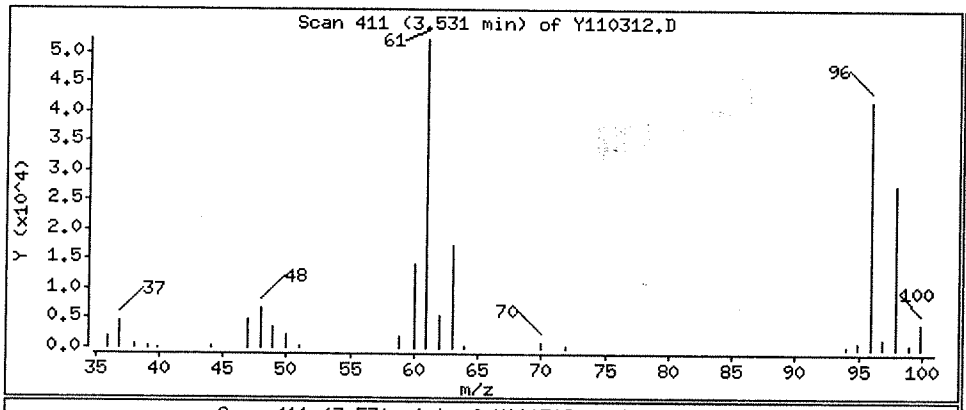
Operator: PC

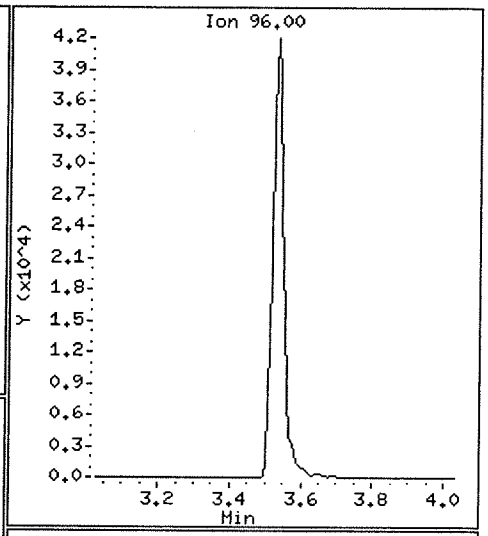
Column phase: DB624

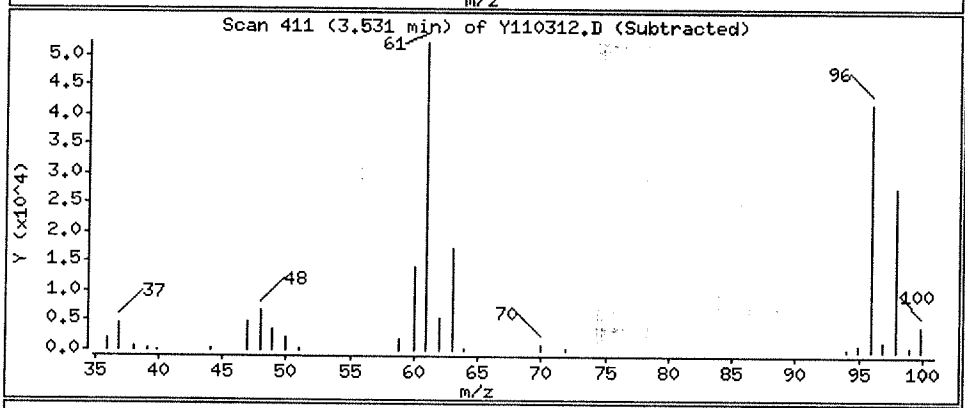
Column diameter: 0.18

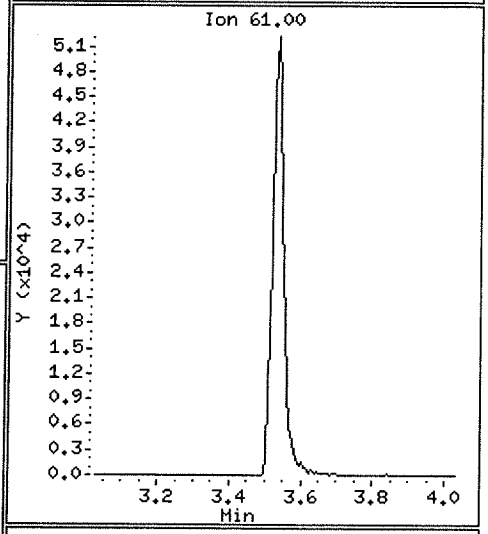
27 cis-1,2-Dichloroethene

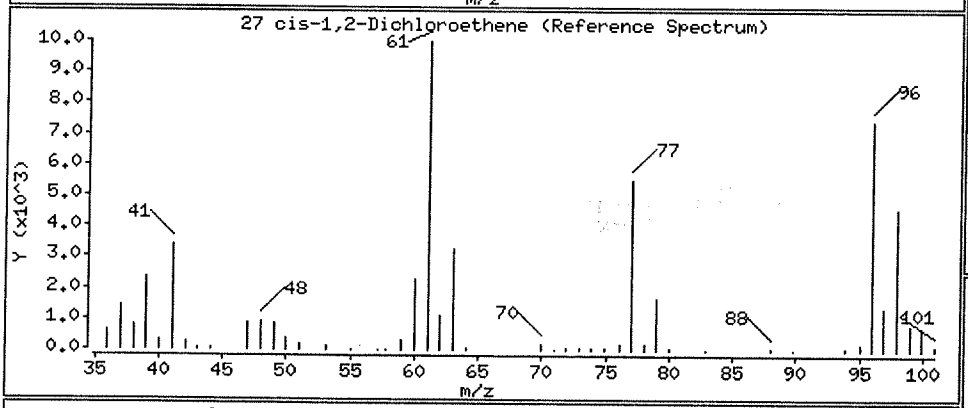
Concentration: 230.79 ug/l

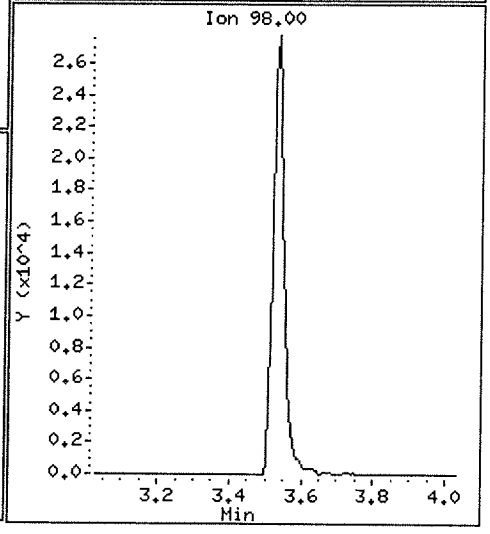


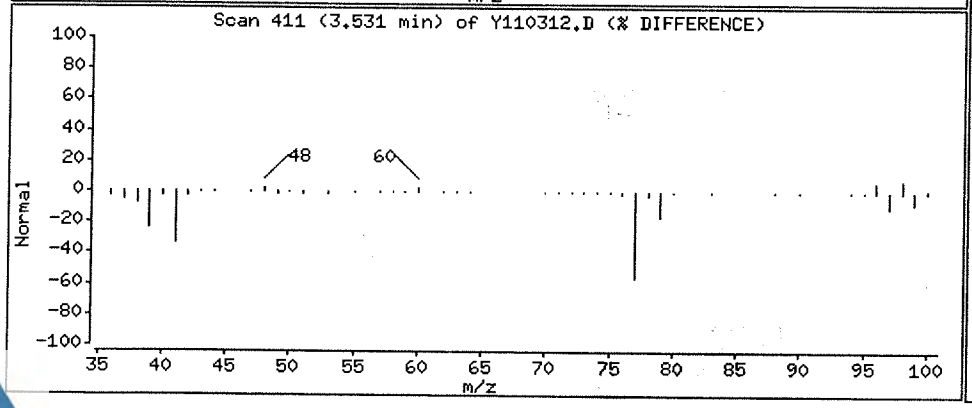












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D

Date : 04-NOV-2020 02:22

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

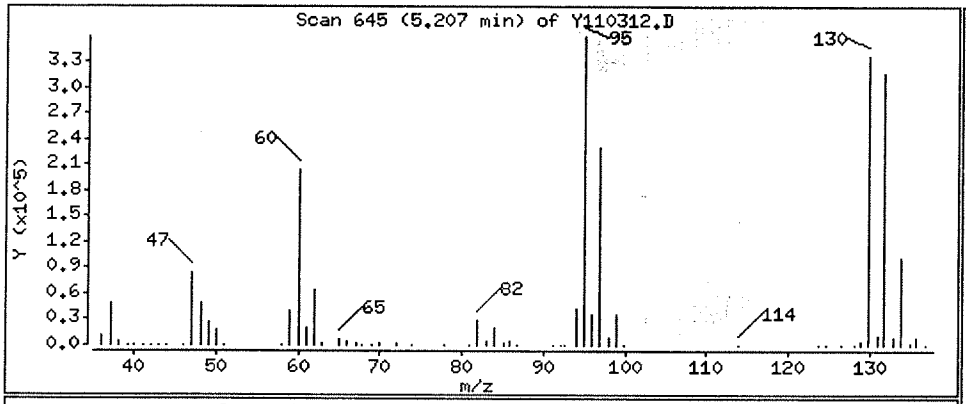
Operator: PC

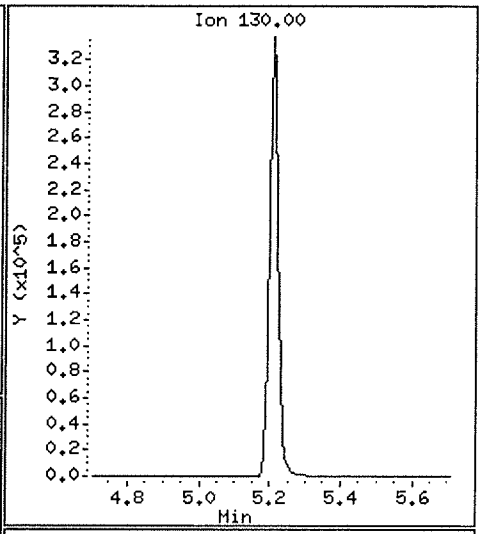
Column phase: DB624

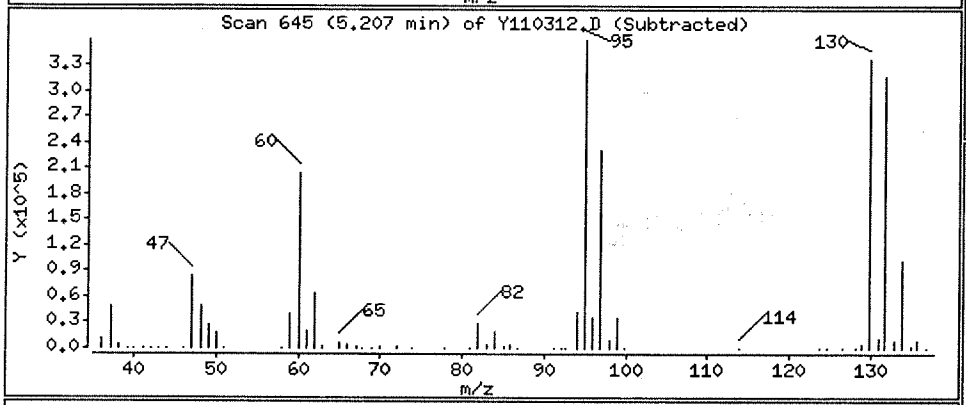
Column diameter: 0.18

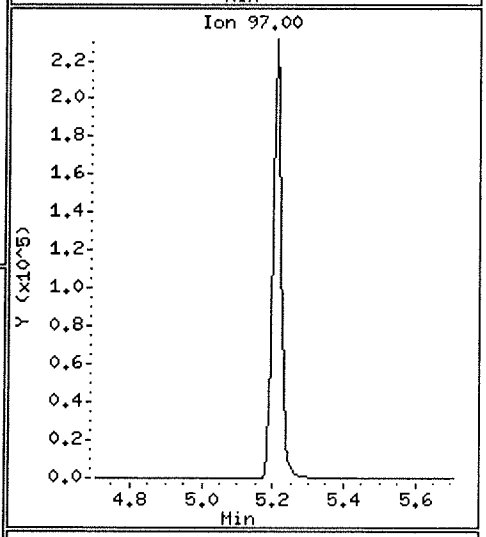
38 Trichloroethene

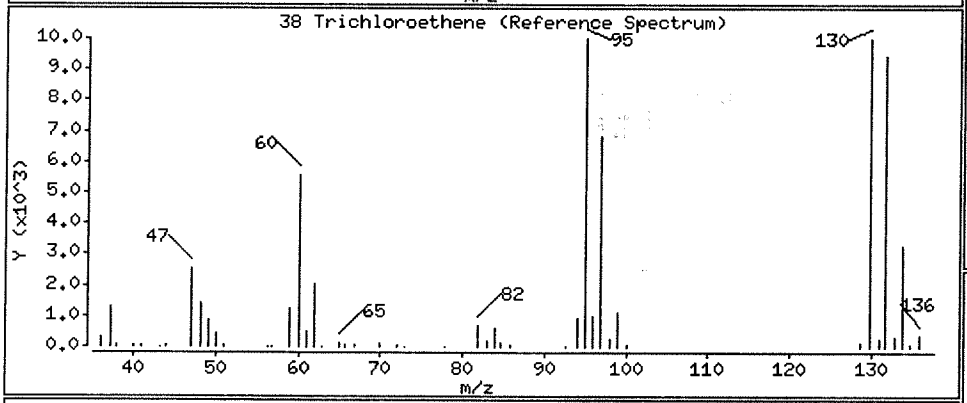
Concentration: 1856.55 ug/l

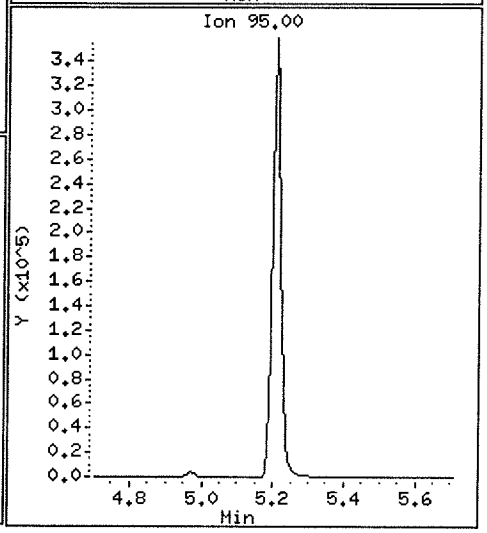


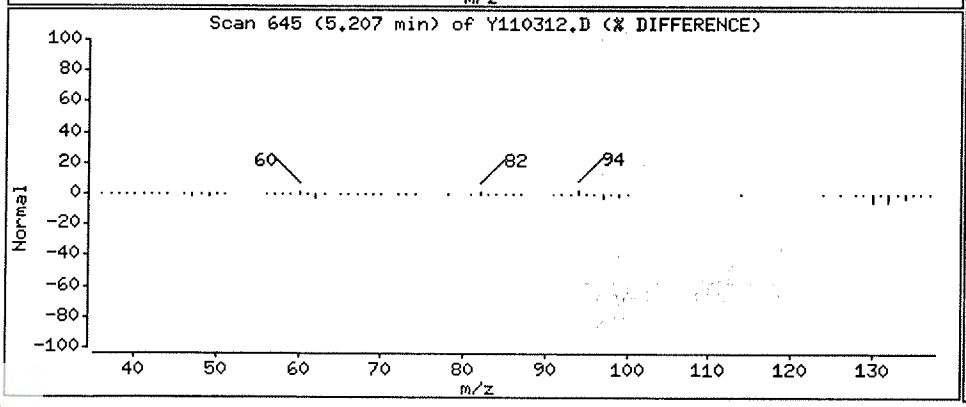












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110312.D

Date : 04-NOV-2020 02:22

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

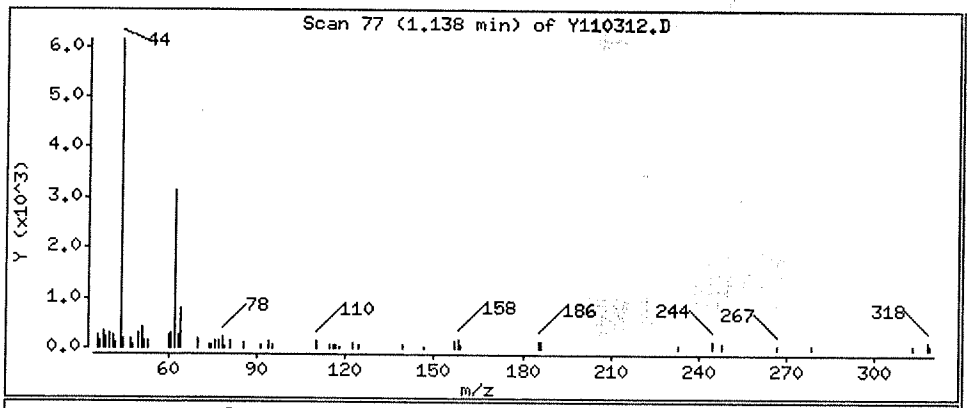
Operator: PC

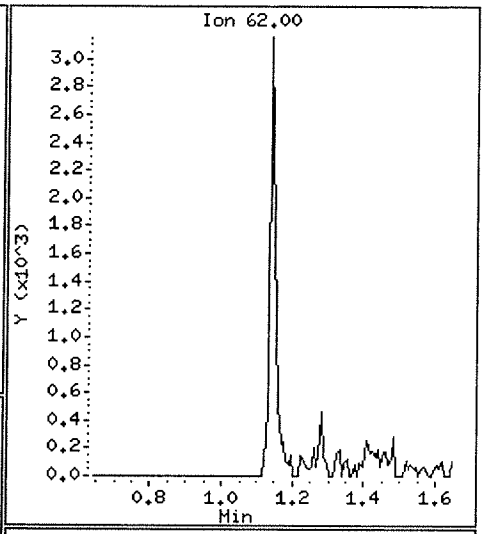
Column phase: DB624

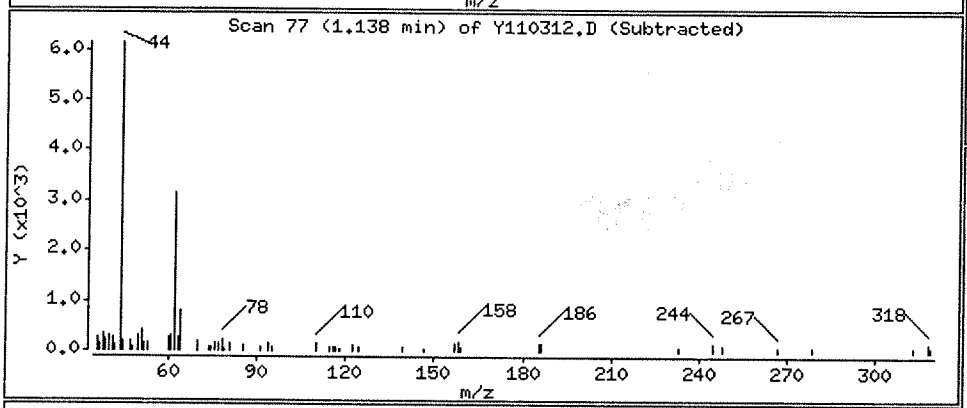
Column diameter: 0.18

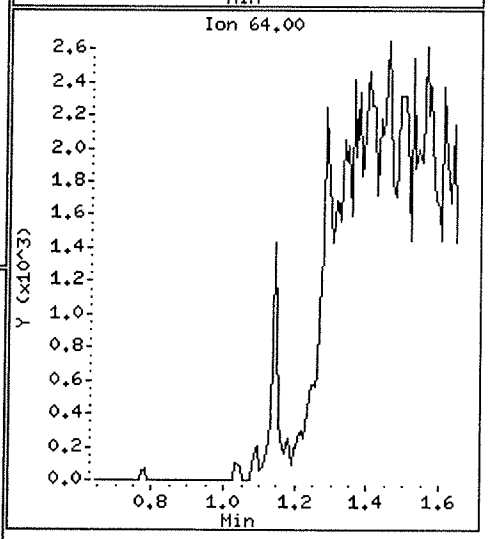
5 Vinyl Chloride

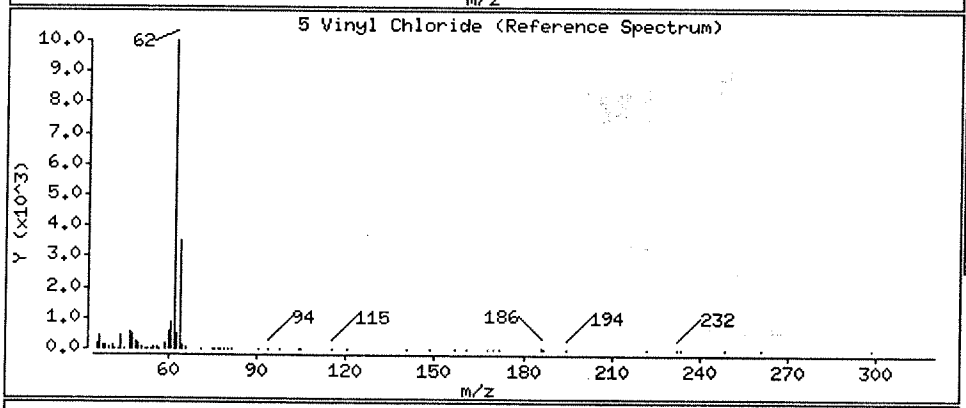
Concentration: 6.33 ug/l

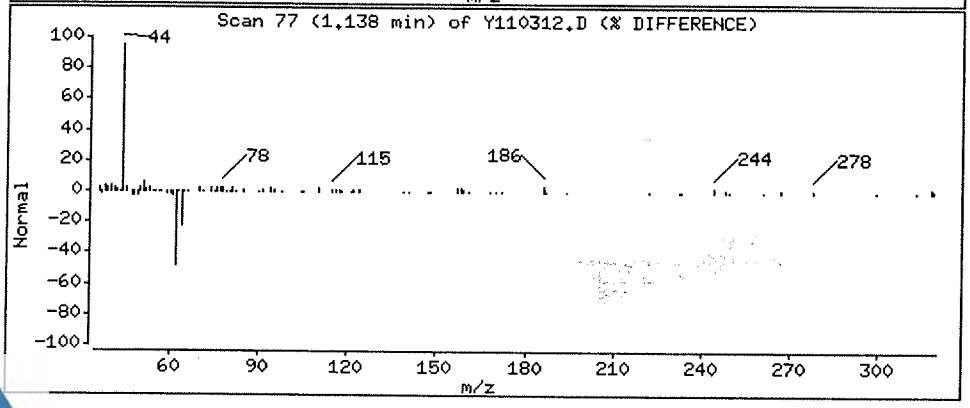












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110313.D Page 1
Report Date: 30-Nov-2020 16:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110313.D
Lab Smp Id: HS20101123-05 Client Smp ID: HS20101123-05
Inj Date : 04-NOV-2020 02:43
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-05;HS20101123-05;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 43
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

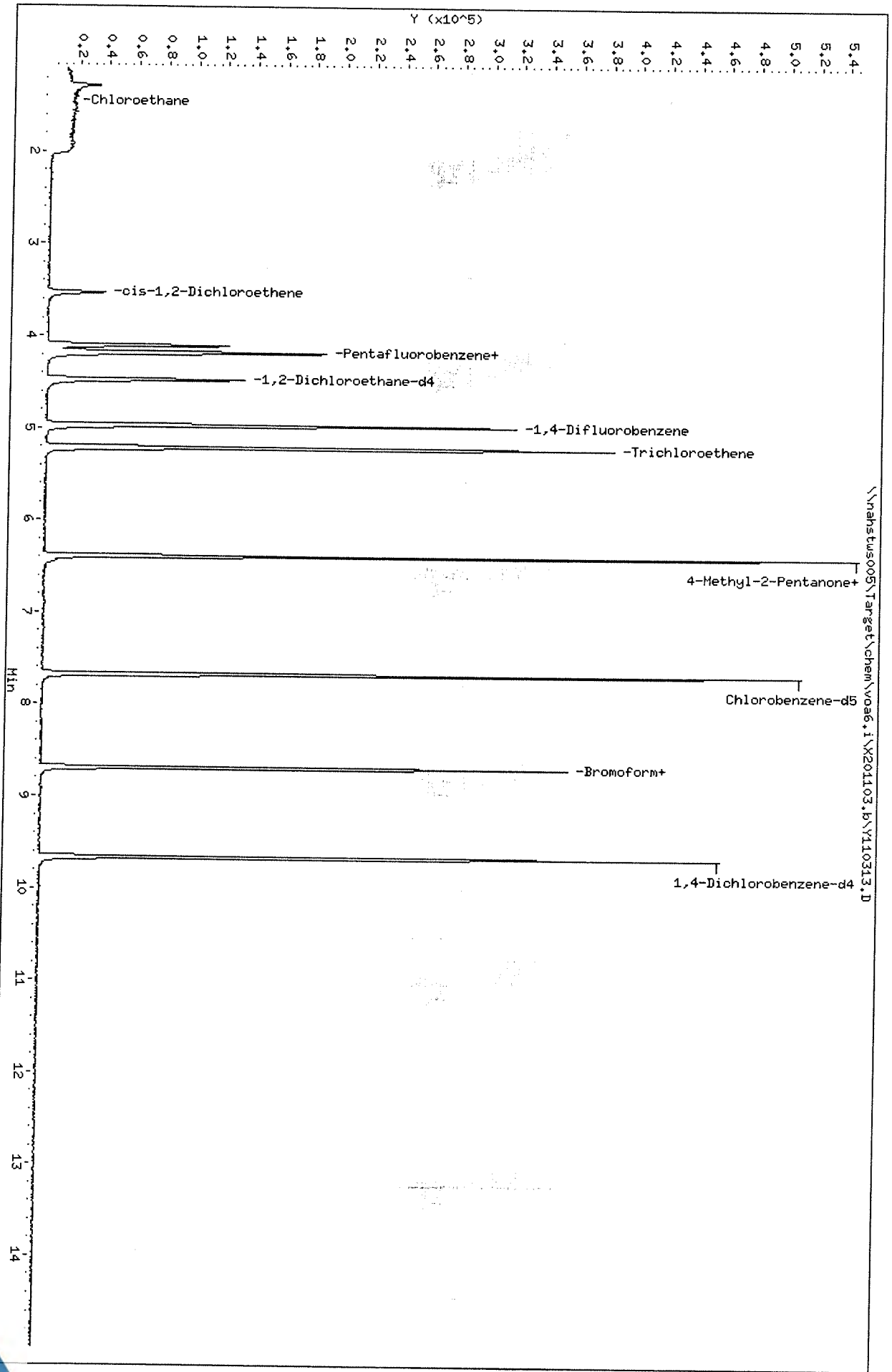
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	133779	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	229477	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	203934	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	86116	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	89795	42.5824	42.58
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	85235	47.1792	47.17
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	77089	42.7887	42.78
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	283518	52.0496	52.04
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	18822	9.59387	239.84
38 Trichloroethene	130	5.214	5.206	(1.049)	105447	68.9539	1723.84

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110313.D
Date : 04-NOV-2020 02:43
Client ID: HS20101123-05
Sample Info: HS20101123-05;HS20101123-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



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Date : 04-NOV-2020 02:43

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

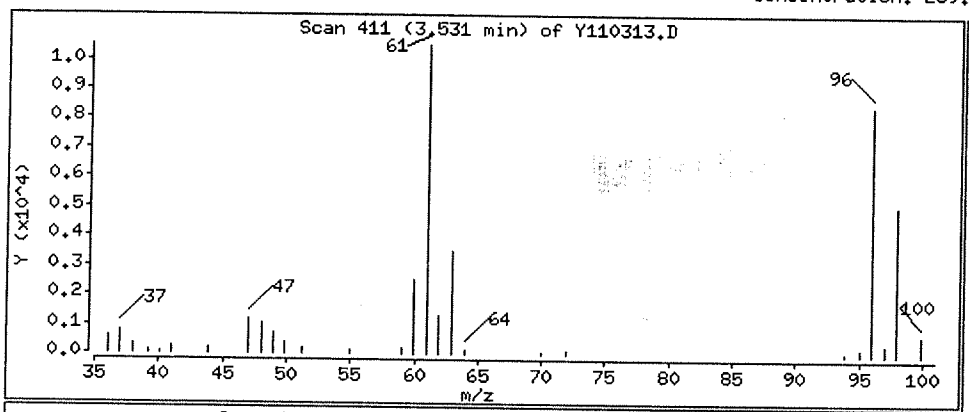
Operator: PC

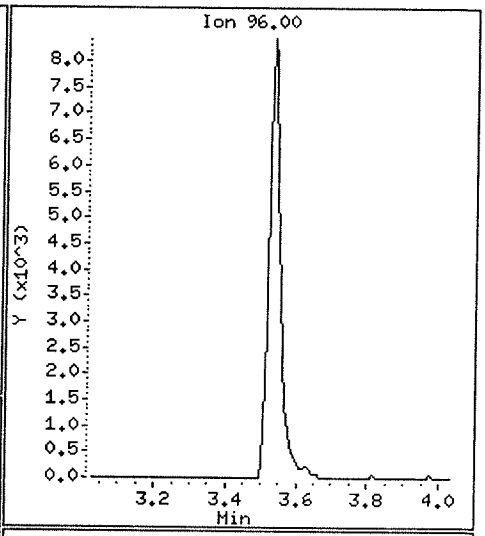
Column phase: DB624

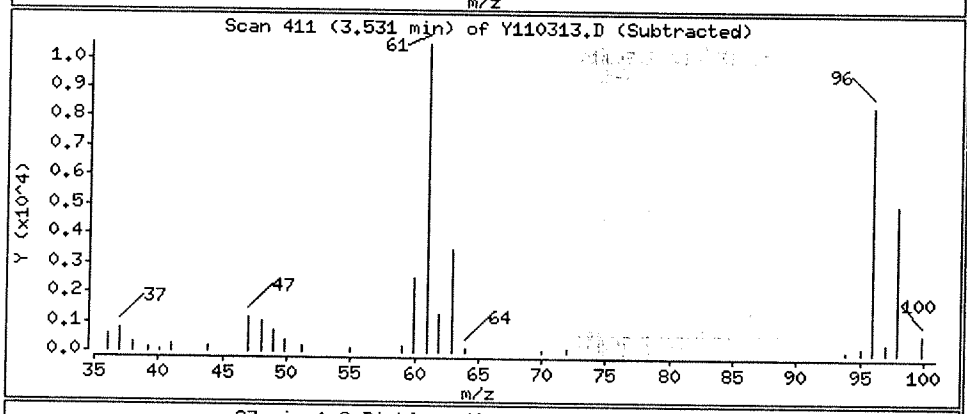
Column diameter: 0.18

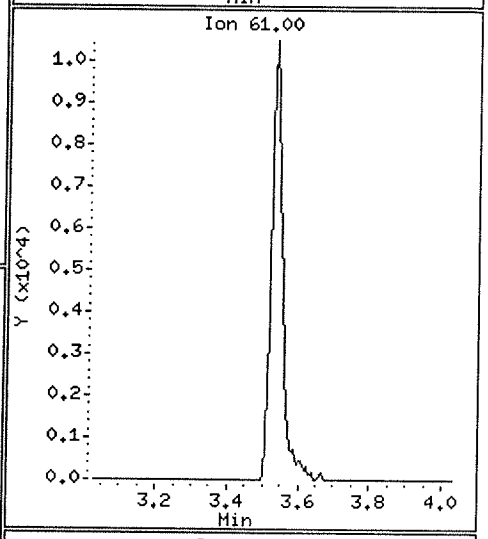
27 cis-1,2-Dichloroethene

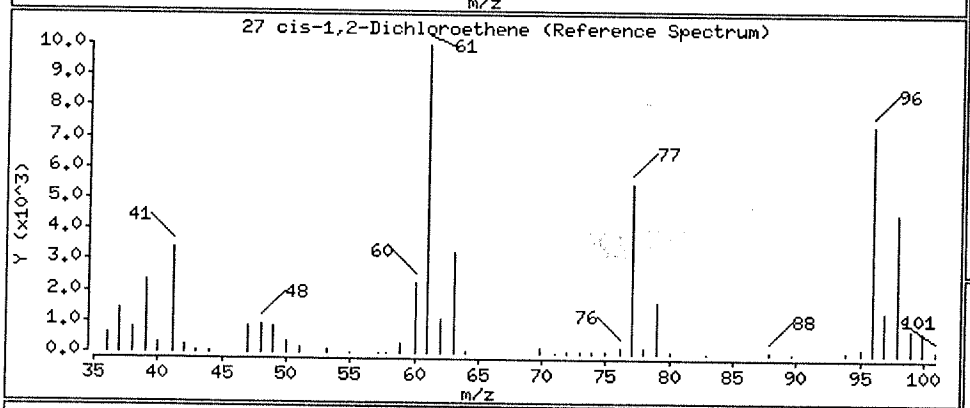
Concentration: 239.84 ug/l

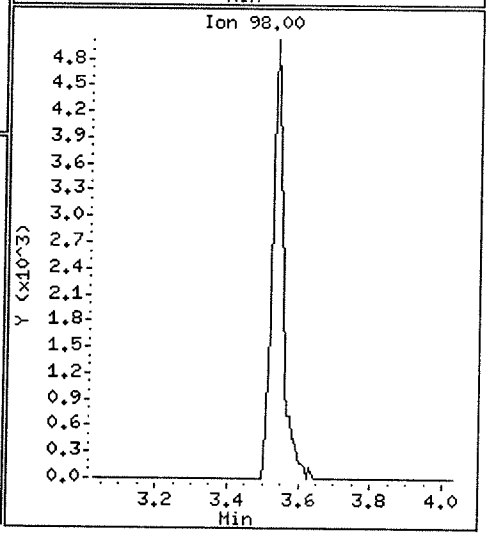


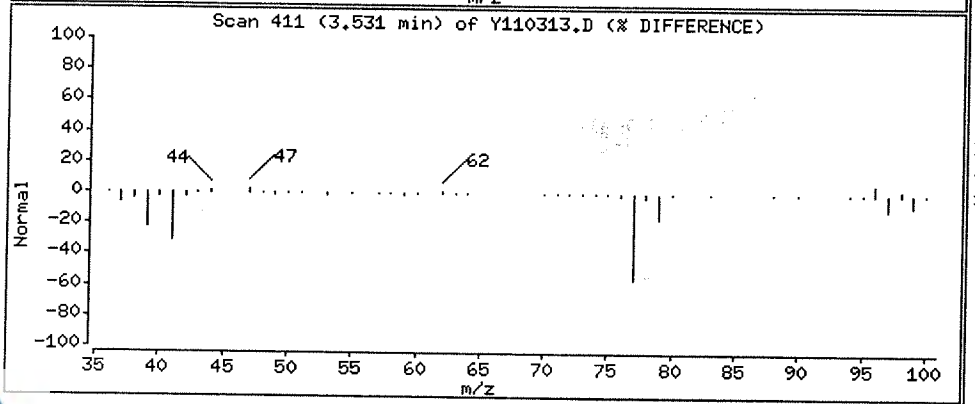












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110313.D

Date : 04-NOV-2020 02:43

Client ID: HS20101123-05

Instrument: voa6.i

Sample Info: HS20101123-05;HS20101123-05;;;

Purge Volume: 5.0

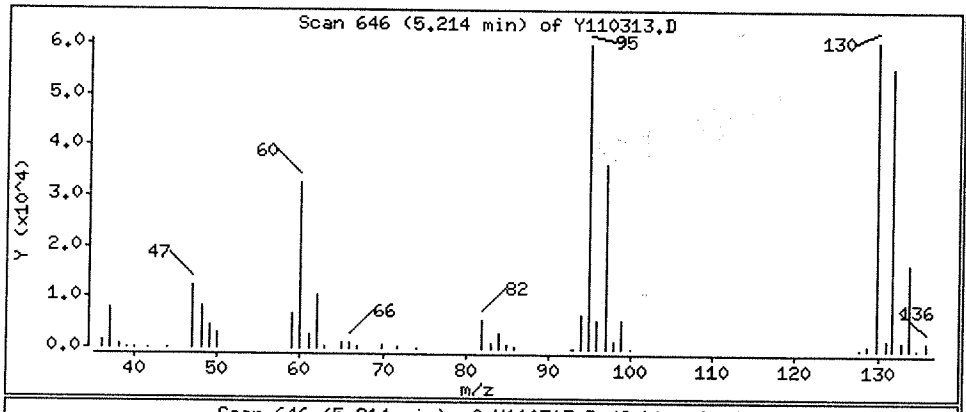
Operator: PC

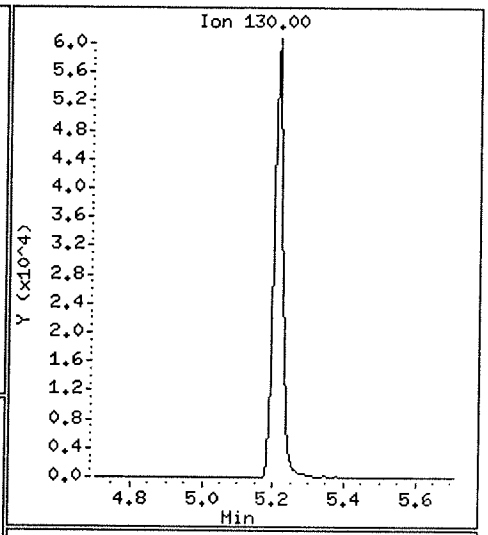
Column phase: DB624

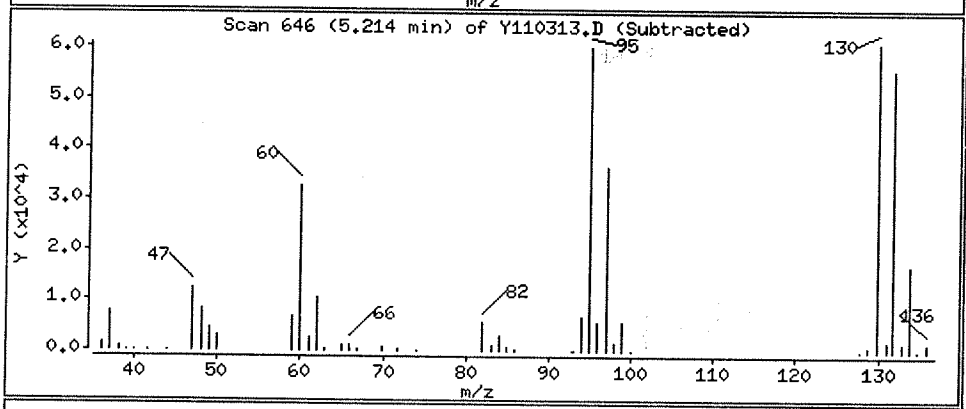
Column diameter: 0.18

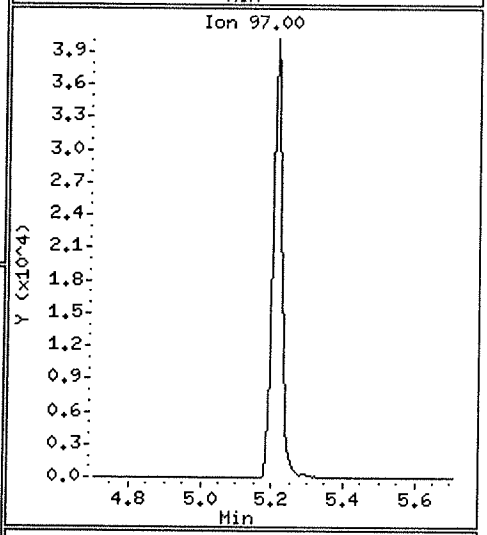
38 Trichloroethene

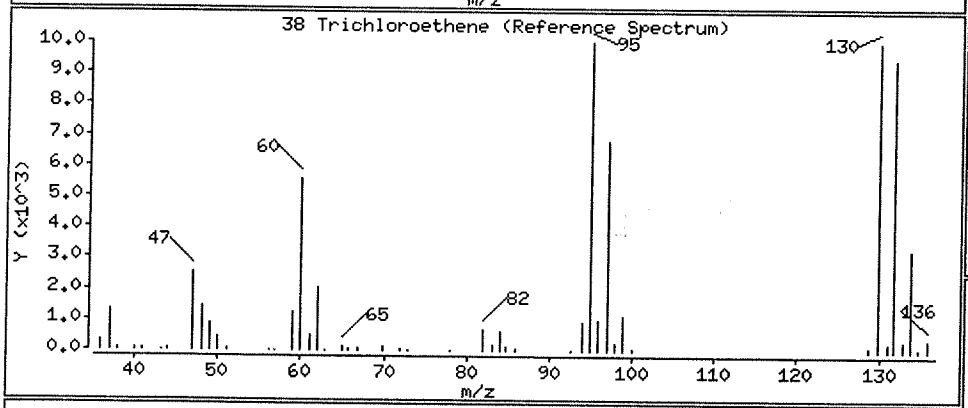
Concentration: 1723.84 ug/l

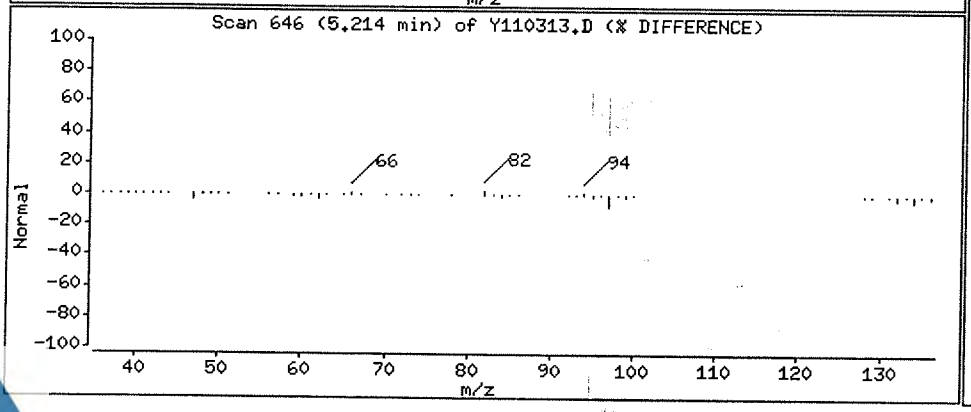


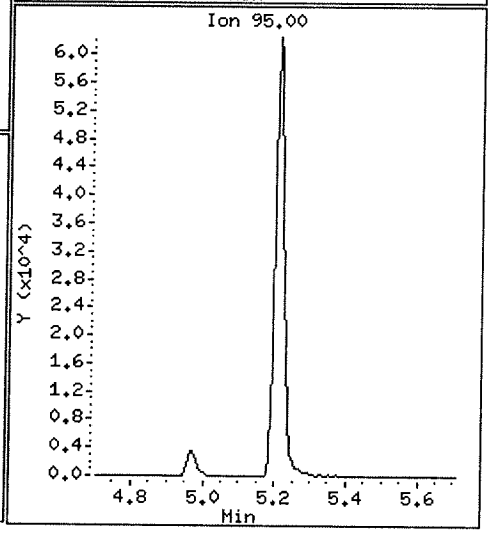












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110314.D Page 1
Report Date: 30-Nov-2020 16:07

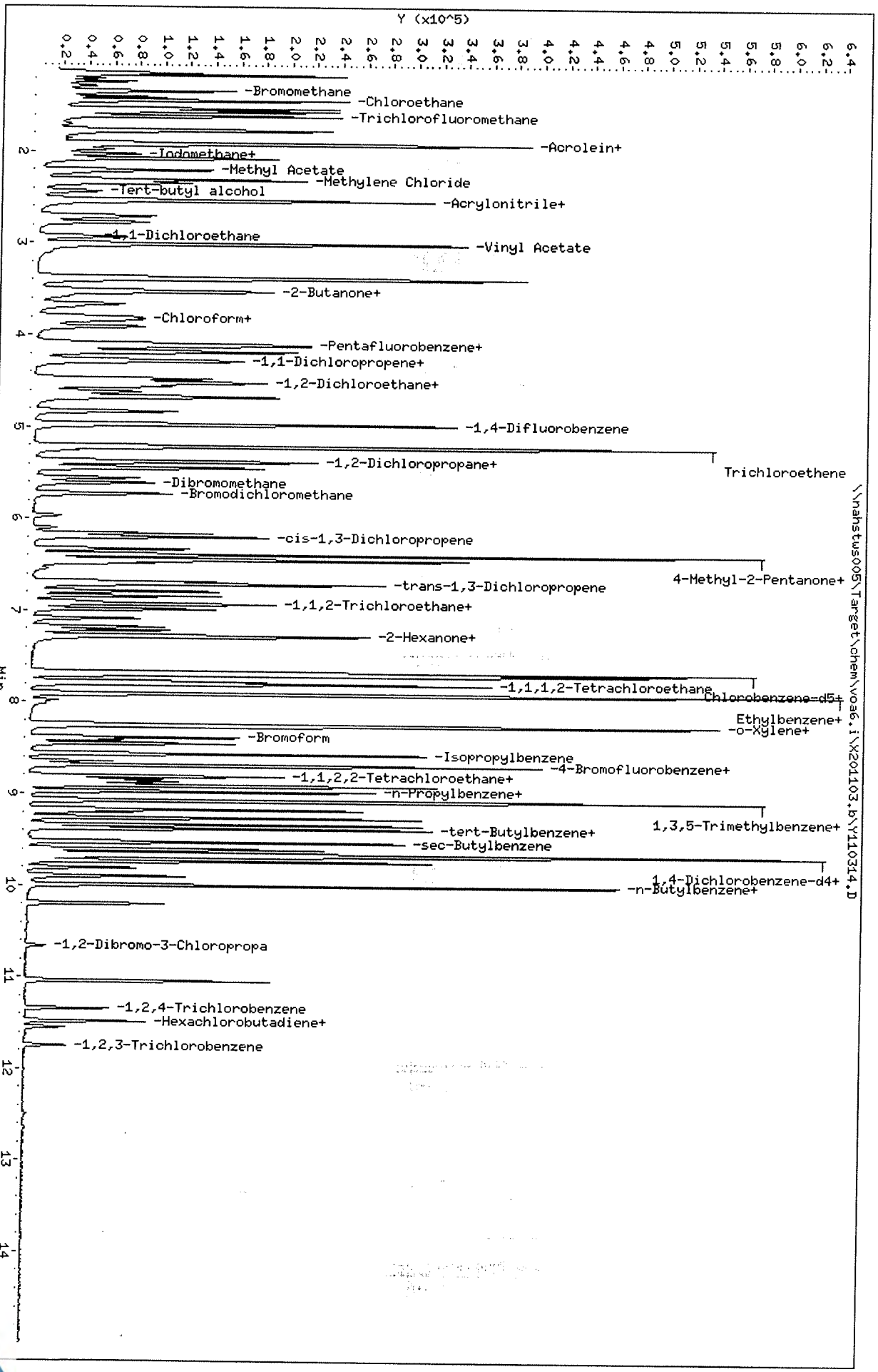
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110314.D
Lab Smp Id: HS20101123-05MS Client Smp ID: HS20101123-05MS
Inj Date : 04-NOV-2020 03:04
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-05MS;HS20101123-05MS;3;;MS
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:06 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 44 QC Sample: MS
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	136609	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	240426	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	219229	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	89432	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	95226	44.1687	44.16
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	91898	47.3133	47.31
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	82741	44.9745	44.97
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	293129	50.0596	50.05
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	29960	22.1570	553.92
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	61788	23.9728	599.32
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	52704	20.3301	508.25
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	61364	30.6302	765.75
17 Methylene Chloride	84	2.305	2.305	(0.551)	37551	20.0206	500.51
38 Trichloroethene	130	5.206	5.206	(1.048)	143518	89.5754	2239.38
5 Vinyl Chloride	62	1.145	1.145	(0.274)	78567	26.0289	650.72



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110314.D
Date : 04-NOV-2020 03:04
Client ID: HS20101123-05NS
Sample Info: HS20101123-05NS;HS20101123-05NS;3;;NS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110315.D Page 1
Report Date: 30-Nov-2020 16:07

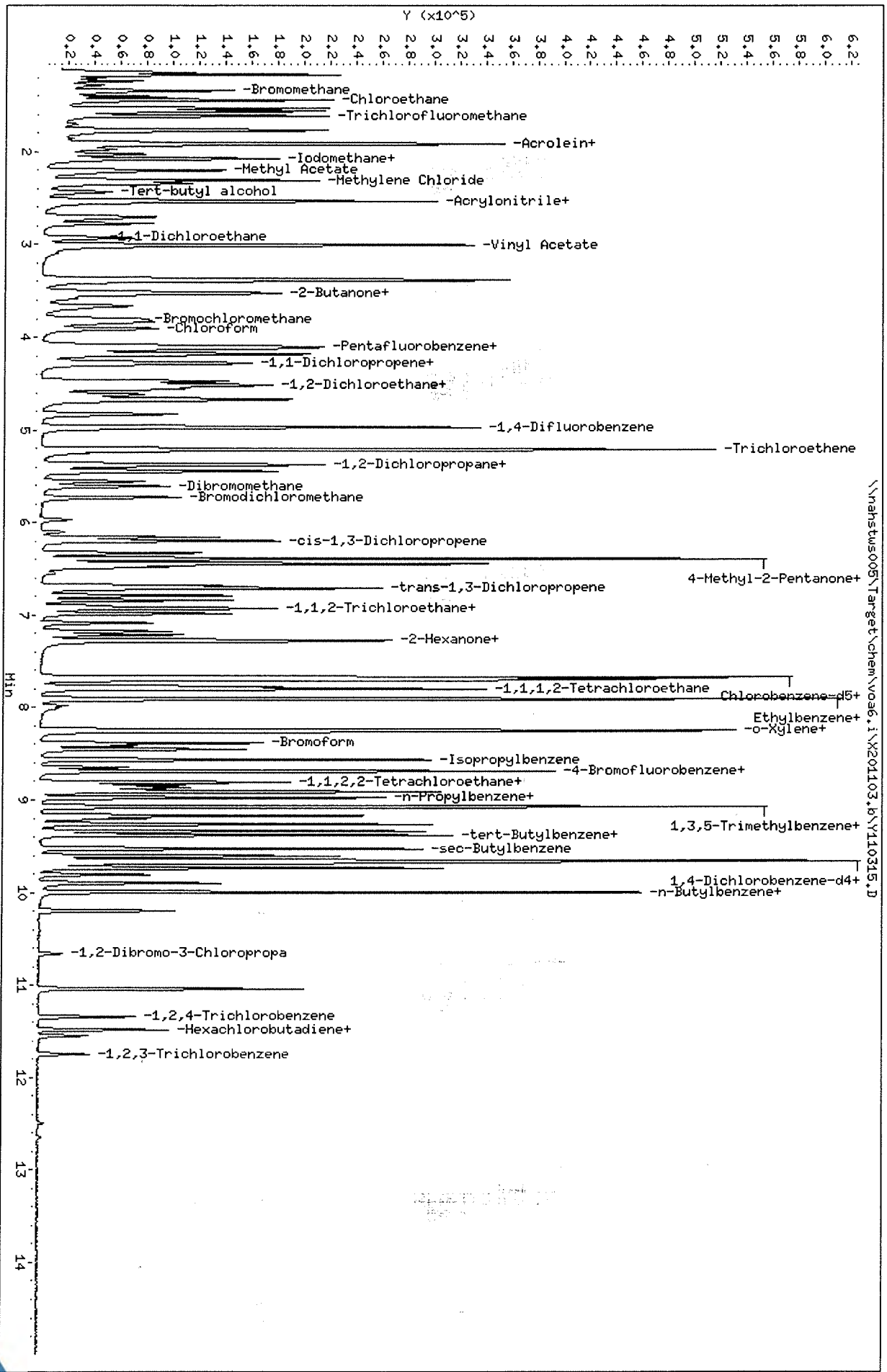
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110315.D
Lab Smp Id: HS20101123-05MSD Client Smp ID: HS20101123-05MSD
Inj Date : 04-NOV-2020 03:25
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-05MSD;HS20101123-05MSD;3;;MSD
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:06 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 44 QC Sample: MSD
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	140507	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	238830	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	217554	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	90752	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	100165	45.1364	45.13
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	91001	47.2159	47.21
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	81671	43.1613	43.16
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	286122	49.2392	49.23
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	29775	22.1897	554.74
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	58523	22.0761	551.90
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	58232	22.6126	565.31
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	59491	28.8715	721.78
17 Methylene Chloride	84	2.306	2.305	(0.551)	36319	18.8265	470.66
38 Trichloroethene	130	5.207	5.206	(1.048)	139607	87.7167	2192.91
5 Vinyl Chloride	62	1.145	1.145	(0.274)	71805	23.1288	578.21



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110315.D
Date : 04-NOV-2020 03:25
Client ID: HS20101123-05HSD
Sample Info: HS20101123-05HSD;HS20101123-05HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D Page 1
Report Date: 30-Nov-2020 16:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D
Lab Smp Id: HS20101123-06 Client Smp ID: HS20101123-06
Inj Date : 04-NOV-2020 06:14
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-06;HS20101123-06;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 52
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

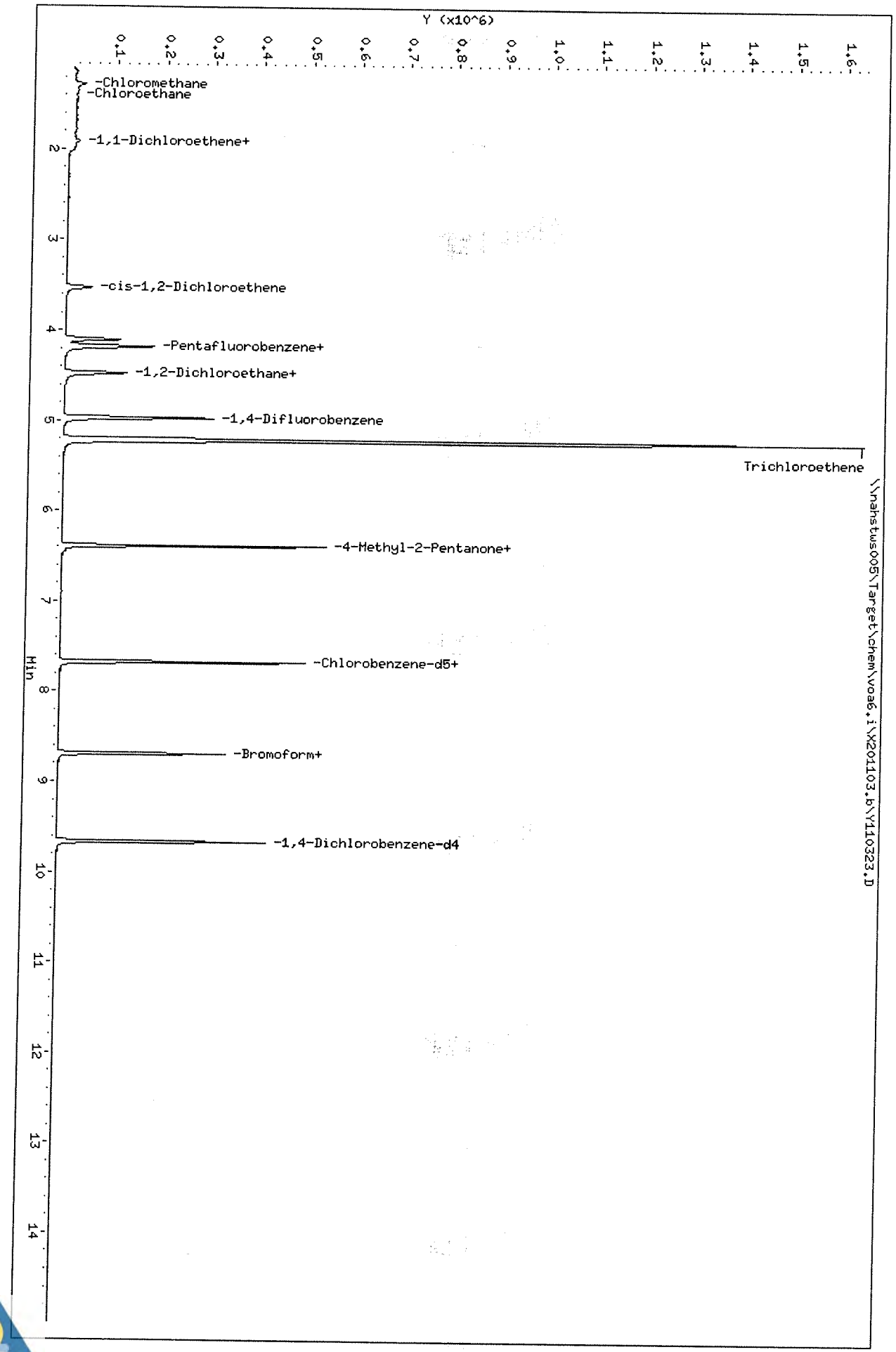
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	130850	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	224071	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	198948	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	81994	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	89833	43.5229	43.52
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	80831	45.9101	45.91
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	74019	42.0044	42.00
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	274973	51.7460	51.74
11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	1863	0.75463	3.77(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	2638	1.09186	5.45(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	25839	13.4654	67.32
38 Trichloroethene	130	5.206	5.206	(1.048)	436209	292.128	1460.63(A)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	3359	1.16180	5.80(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6,i\X201103,b\Y110323.D
Date : 04-NOV-2020 06:14
Client ID: HS20101123-06
Sample Info: HS20101123-06;HS20101123-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D

Date : 04-NOV-2020 06:14

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

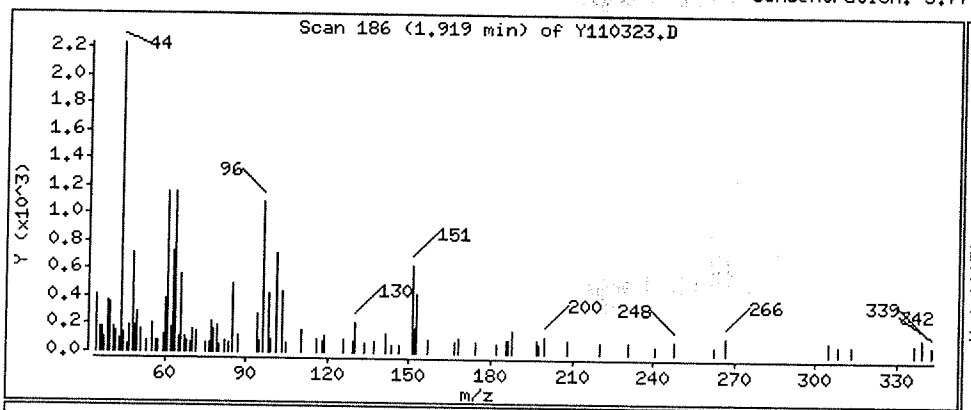
Operator: PC

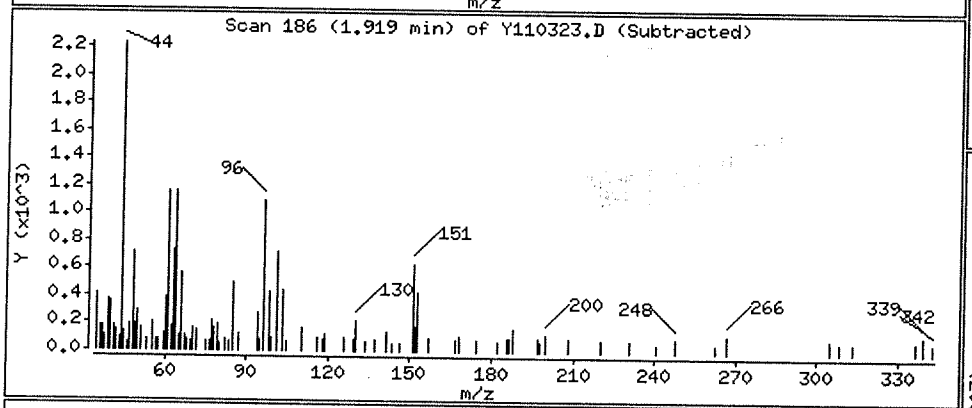
Column phase: DB624

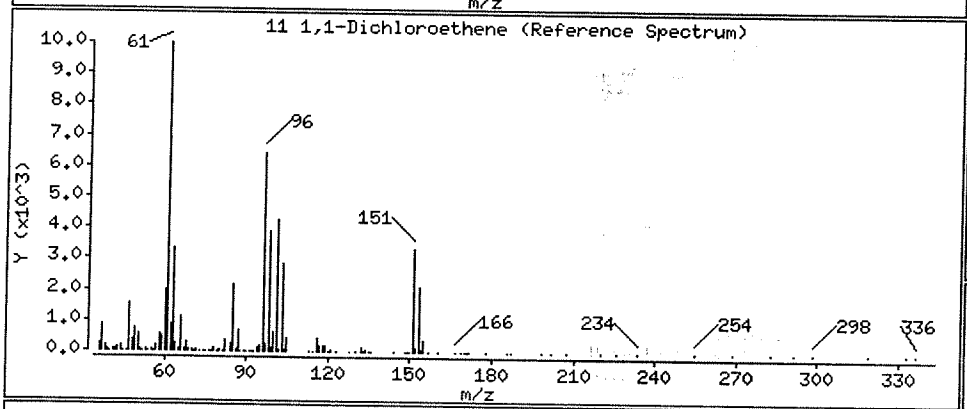
Column diameter: 0.18

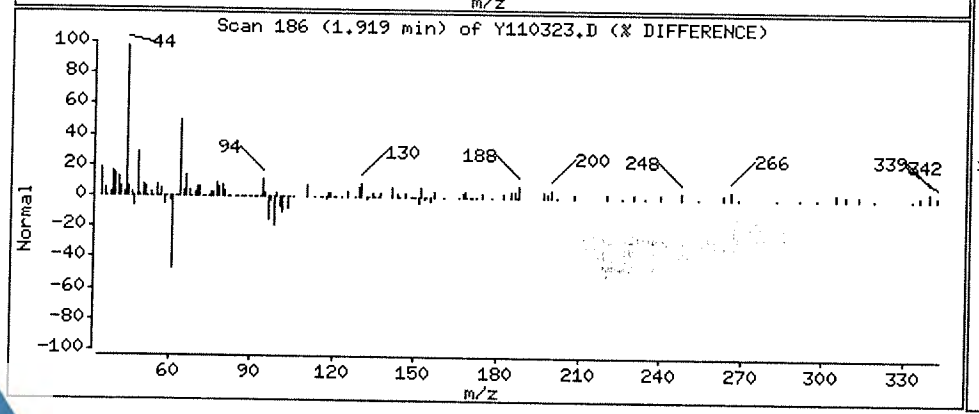
11 1,1-Dichloroethene

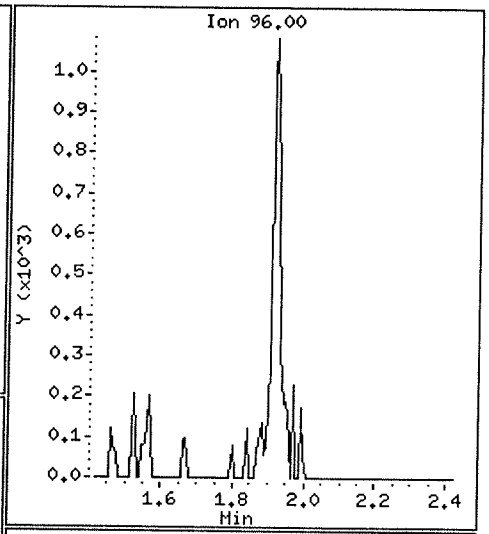
Concentration: 3.77 ug/l

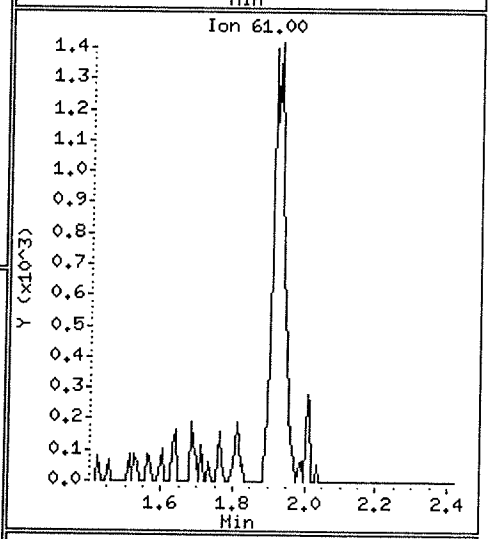


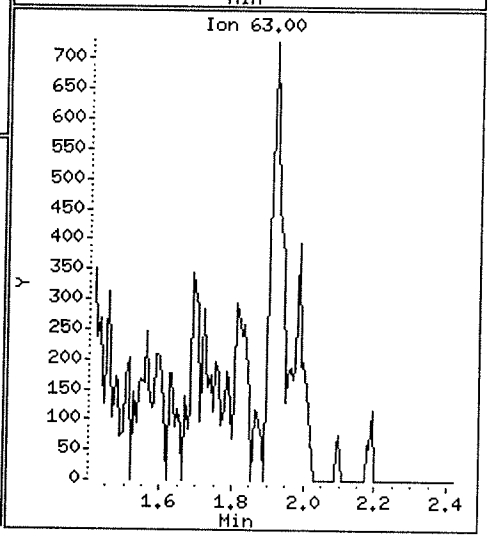












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D

Date : 04-NOV-2020 06:14

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

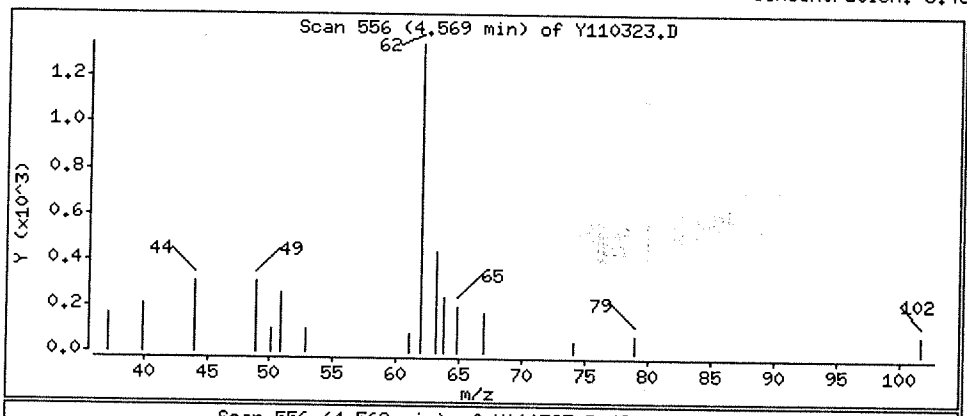
Operator: PC

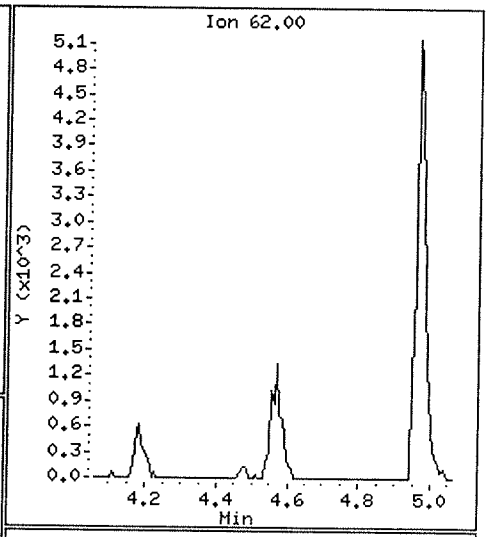
Column phase: DB624

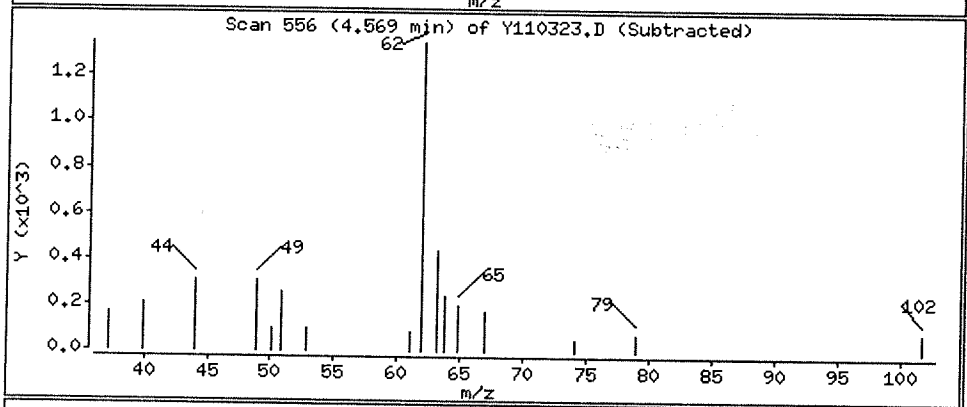
Column diameter: 0.18

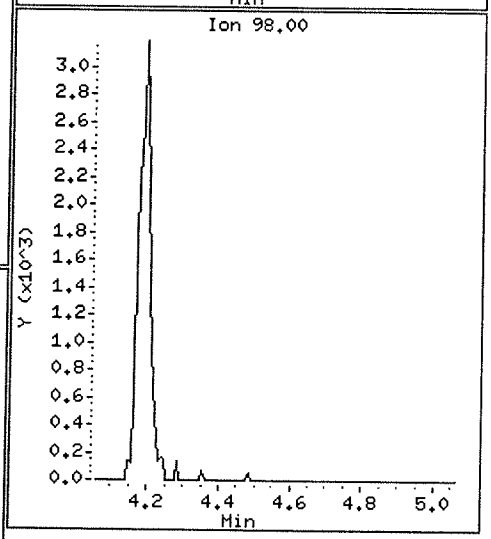
33 1,2-Dichloroethane

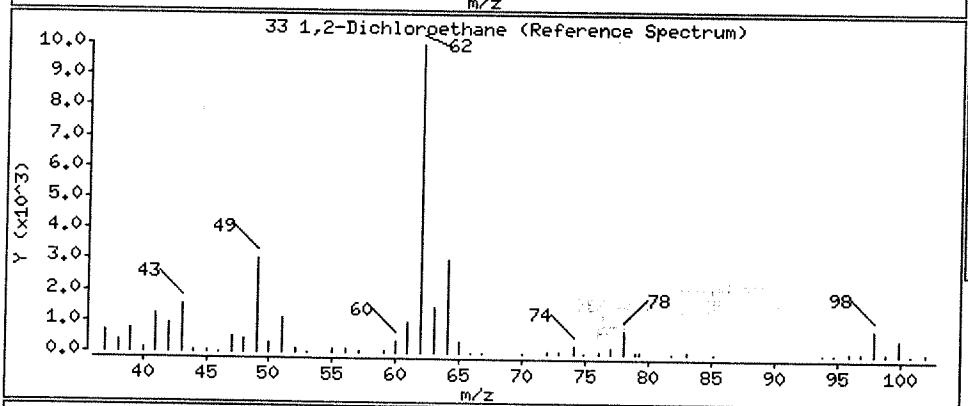
Concentration: 5.45 ug/l

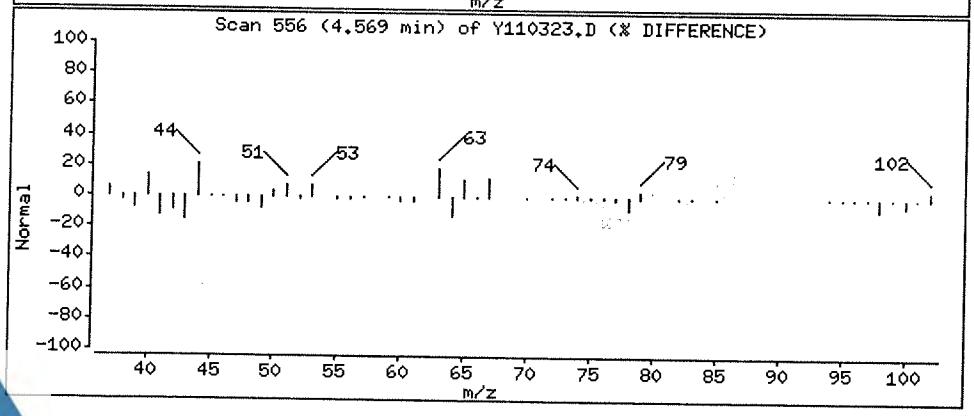












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D

Date : 04-NOV-2020 06:14

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

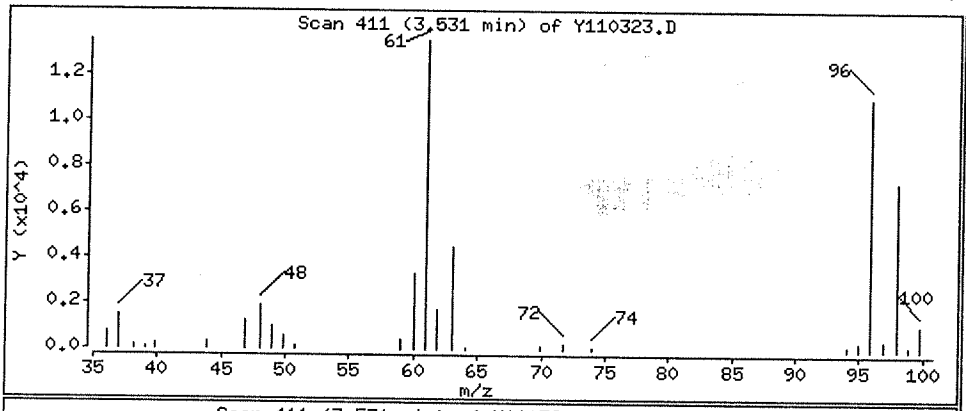
Operator: PC

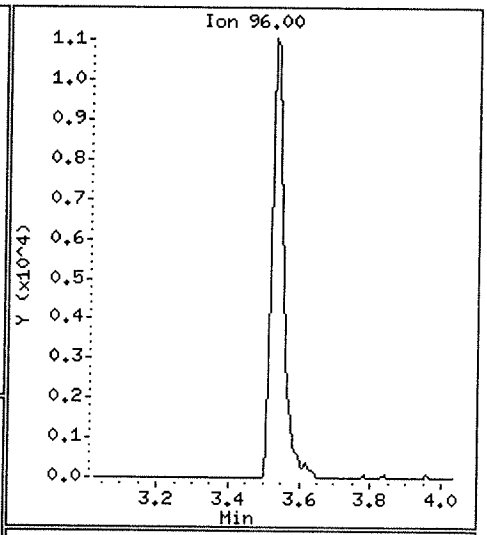
Column phase: DB624

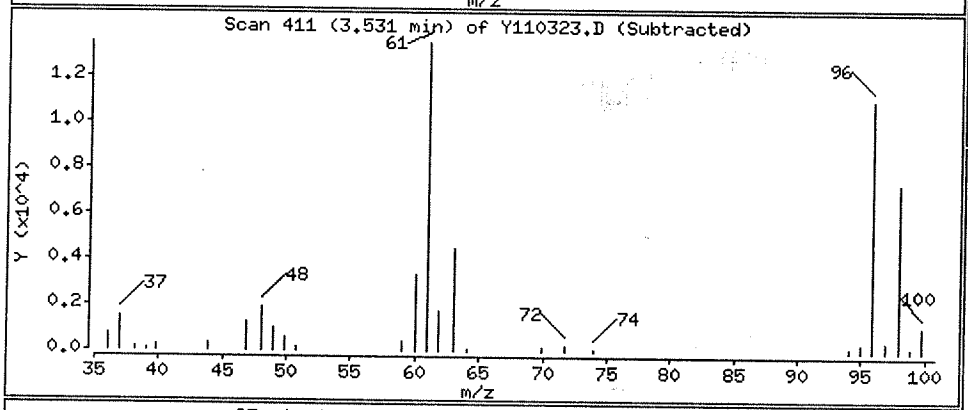
Column diameter: 0.18

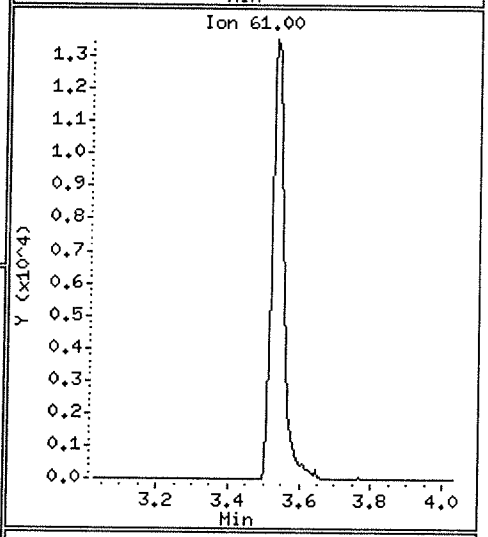
27 cis-1,2-Dichloroethene

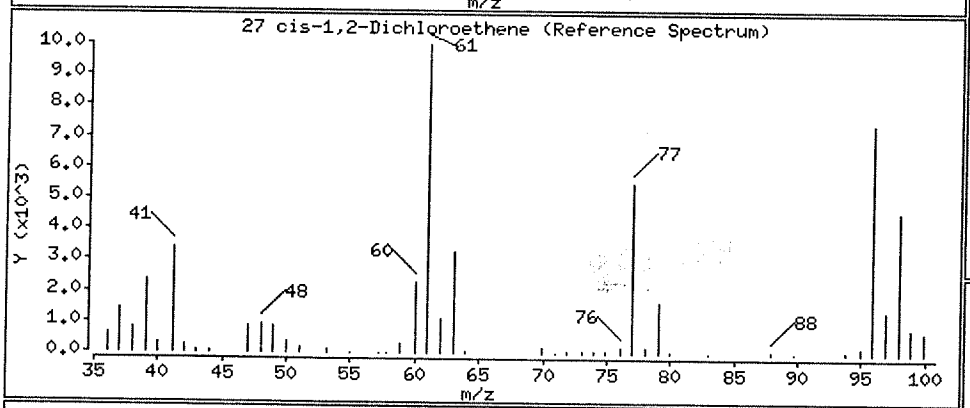
Concentration: 67.32 ug/l

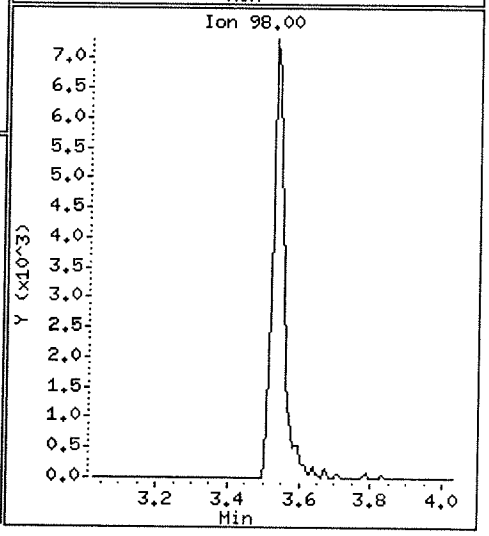


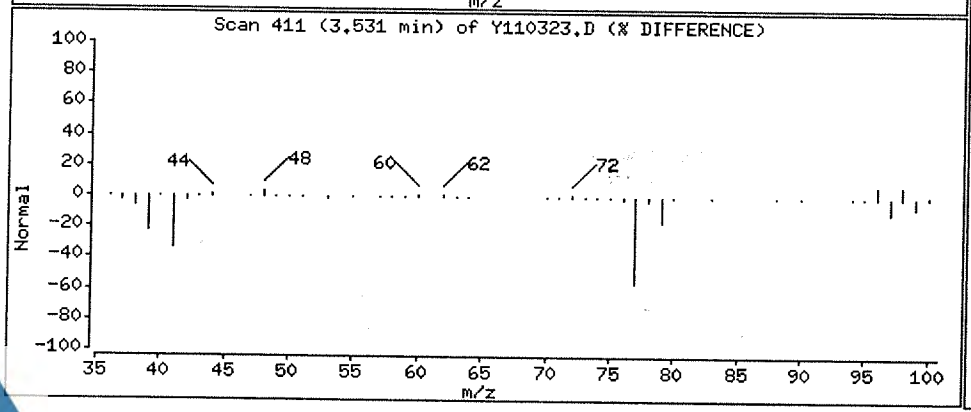












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D

Date : 04-NOV-2020 06:14

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

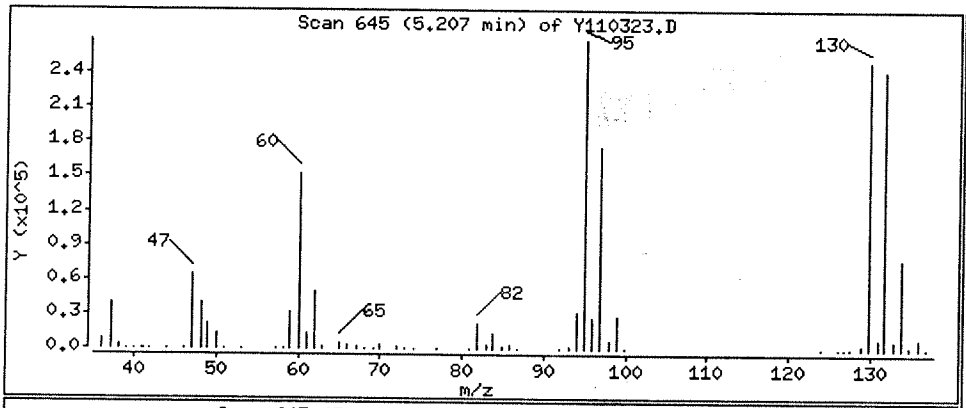
Operator: PC

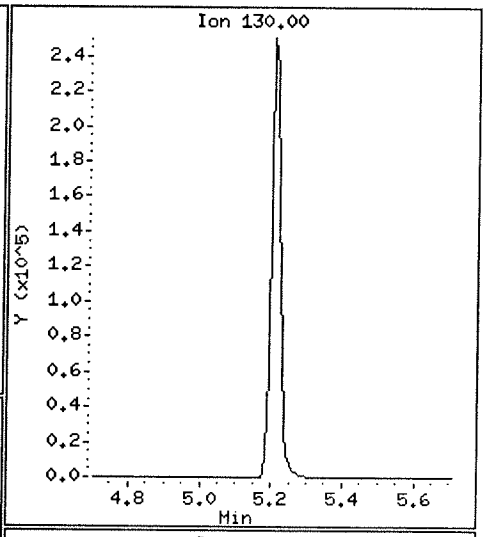
Column phase: DB624

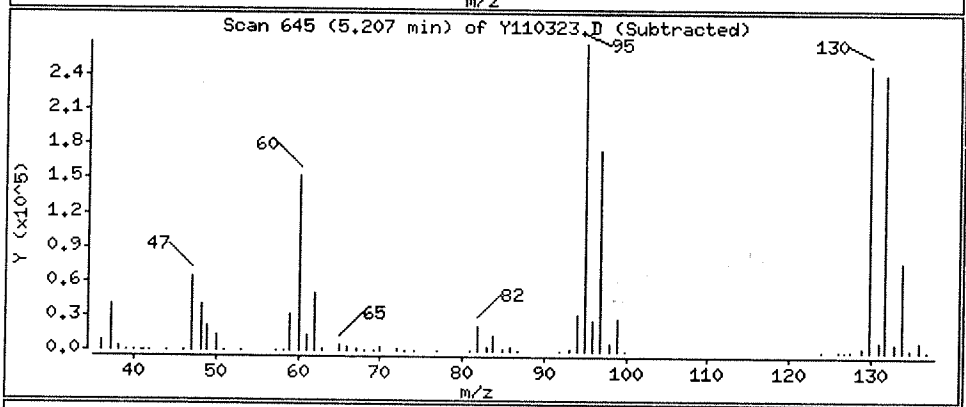
Column diameter: 0.18

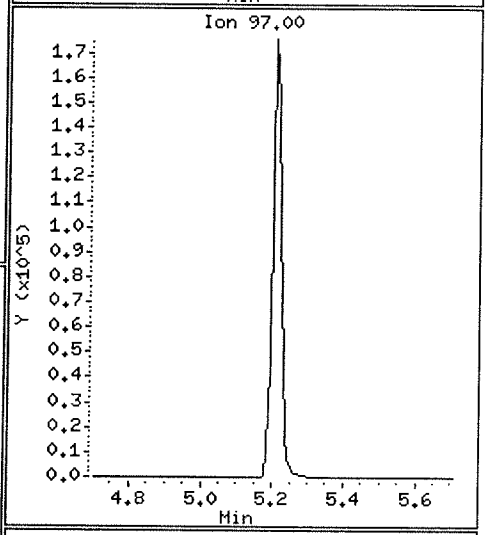
38 Trichloroethene

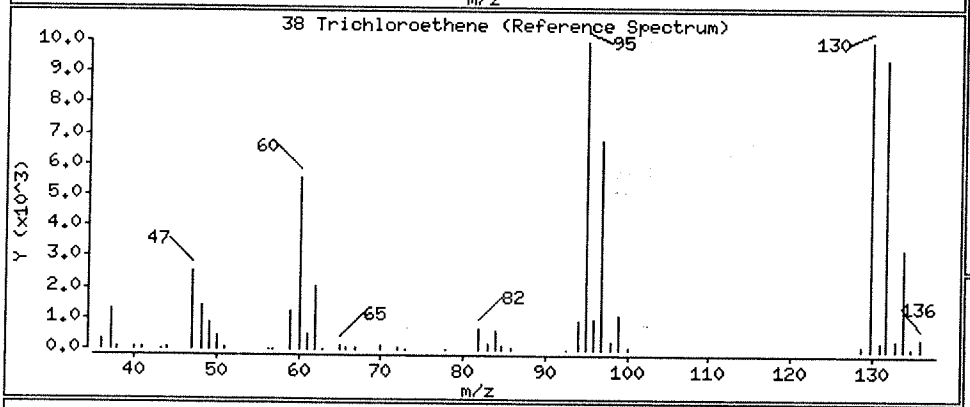
Concentration: 1460.63 ug/l

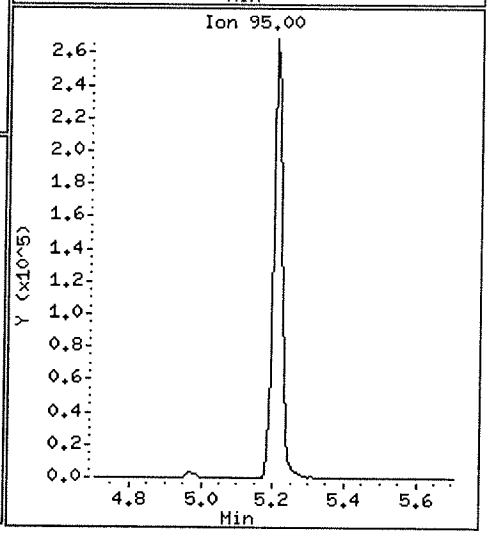


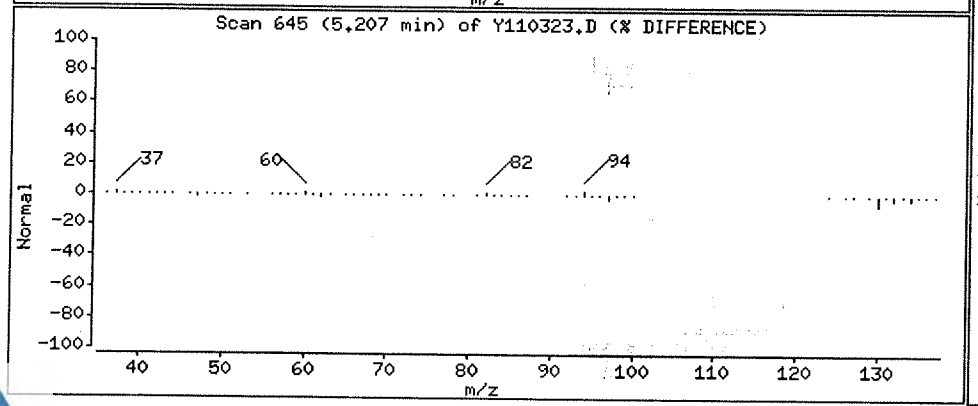












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110323.D

Date : 04-NOV-2020 06:14

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

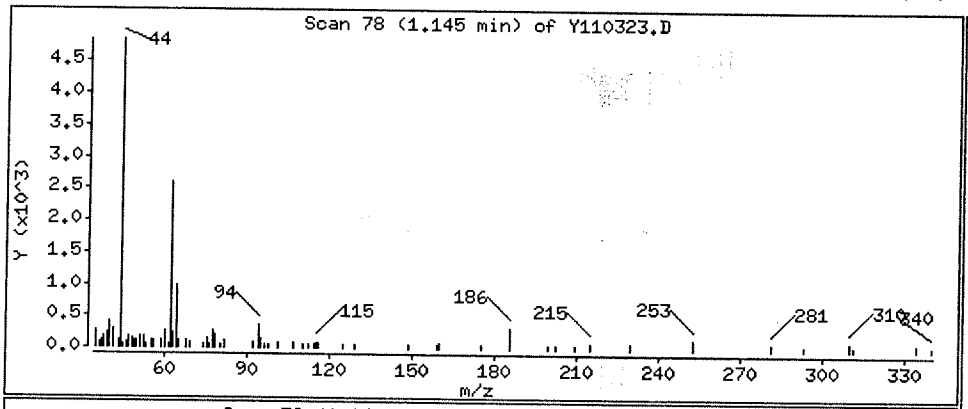
Operator: PC

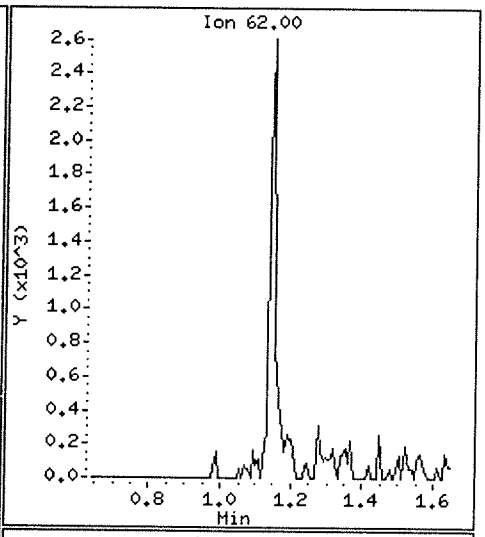
Column phase: DB624

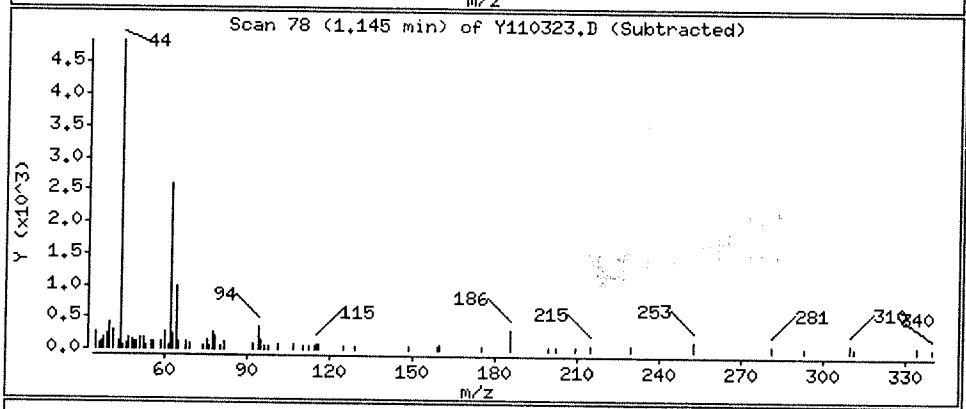
Column diameter: 0.18

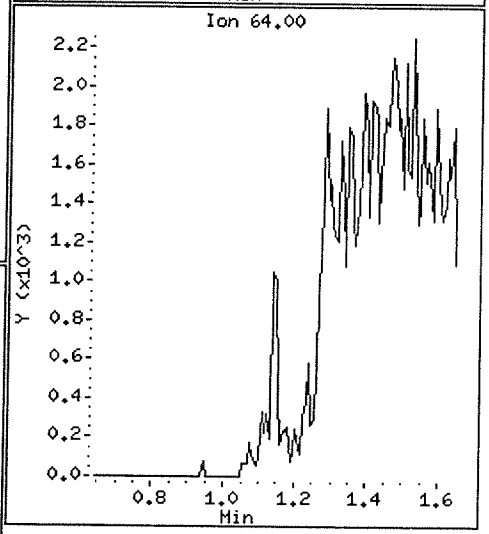
5 Vinyl Chloride

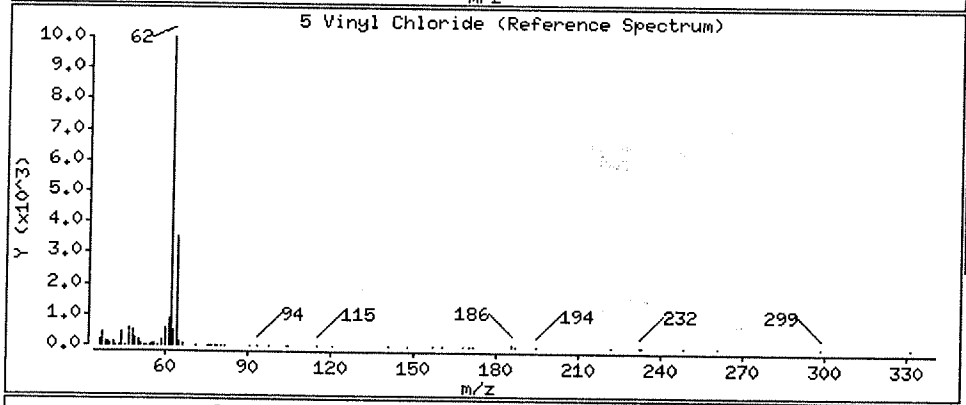
Concentration: 5.80 ug/l

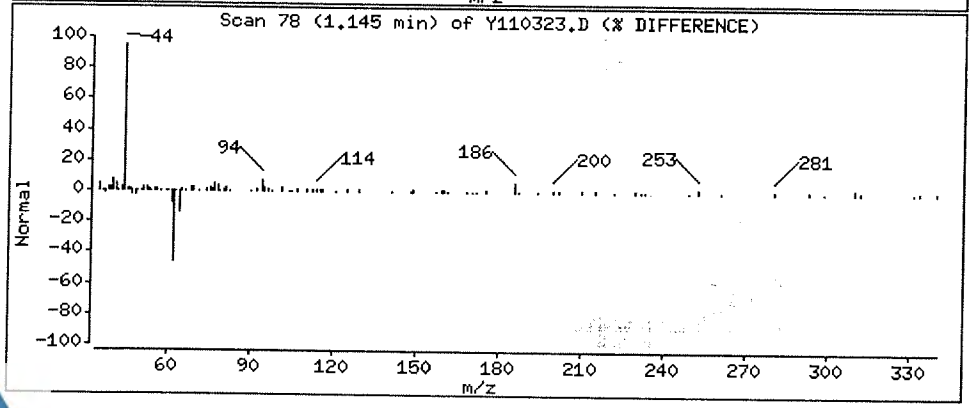












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110324.D
Lab Smp Id: HS20101123-06 Client Smp ID: HS20101123-06
Inj Date : 04-NOV-2020 06:35
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-06;HS20101123-06;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 53
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

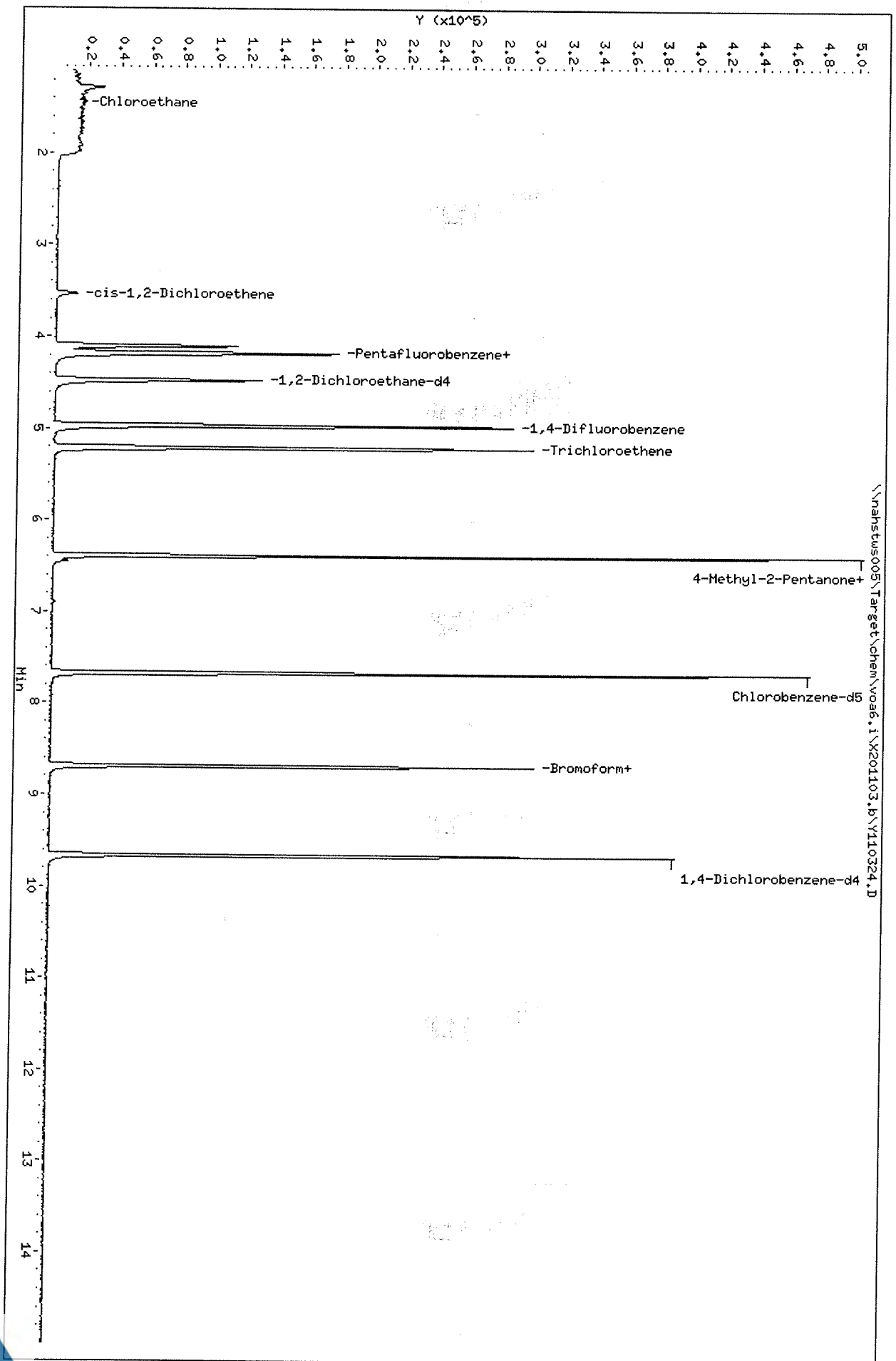
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	128973	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	216990	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	187199	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	75762	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	90572	44.4863	44.48
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	75198	45.4098	45.40
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	73859	42.5236	42.52
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	256519	51.3030	51.30
27 cis-1,2-Dichloroethene	96	3.545	3.530	(0.848)	5607	2.96448	74.11(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	85529	59.1477	1478.69

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110324.D
Date : 04-NOV-2020 06:35
Client ID: HS20101123-06
Sample Info: HS20101123-06;HS20101123-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110324.D

Date : 04-NOV-2020 06:35

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

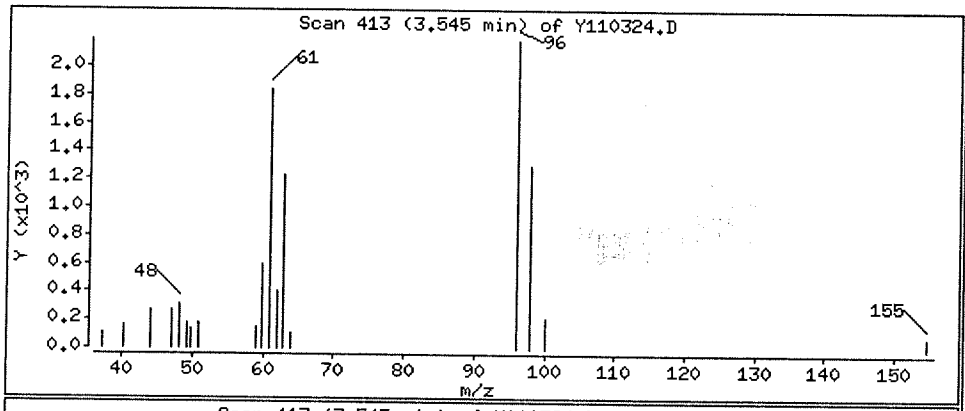
Operator: PC

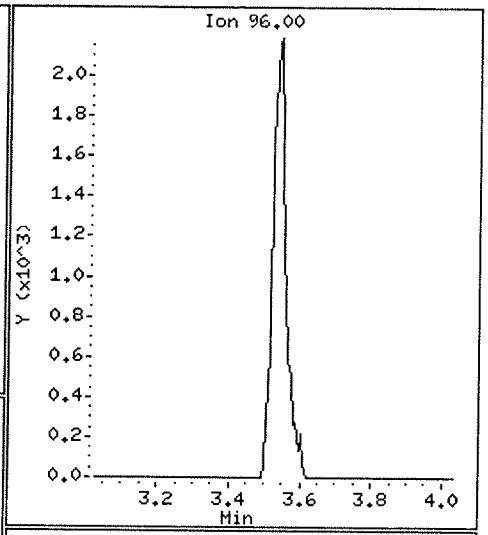
Column phase: DB624

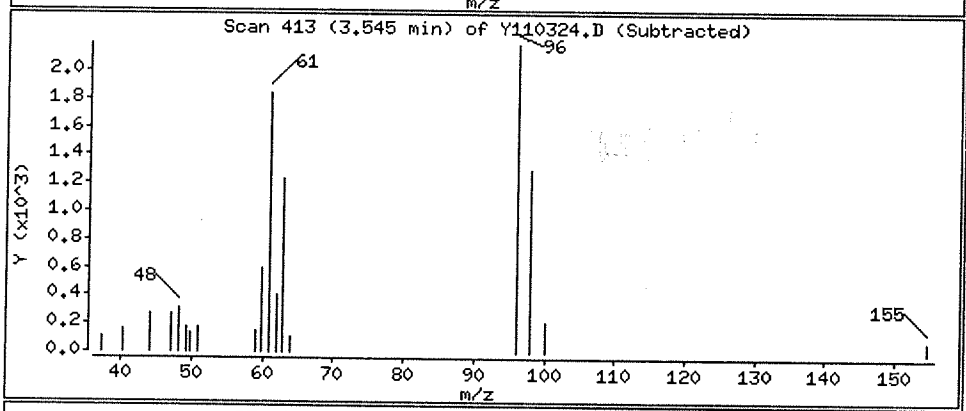
Column diameter: 0.18

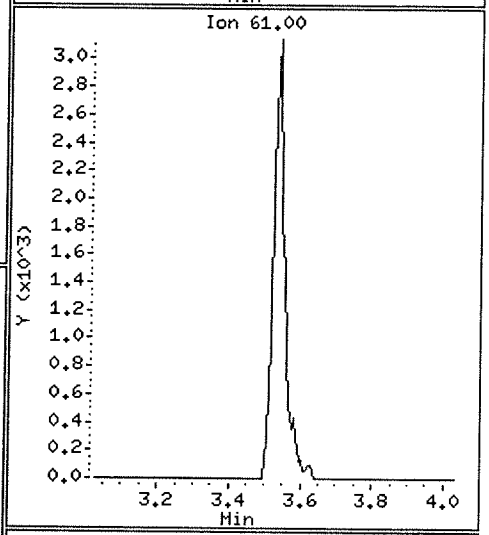
27 cis-1,2-Dichloroethene

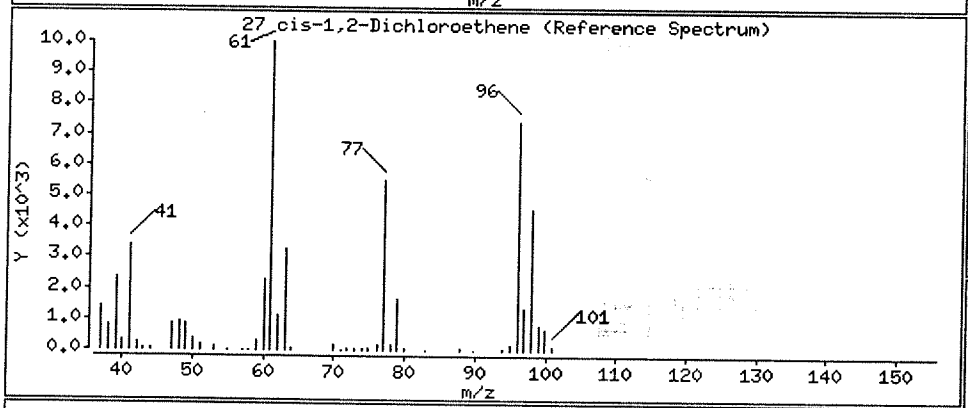
Concentration: 74.11 ug/l

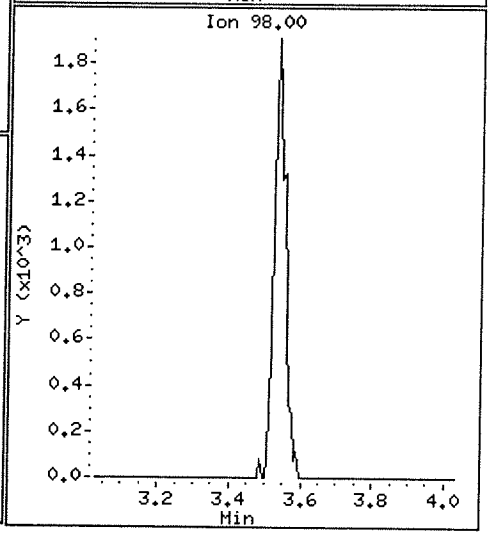


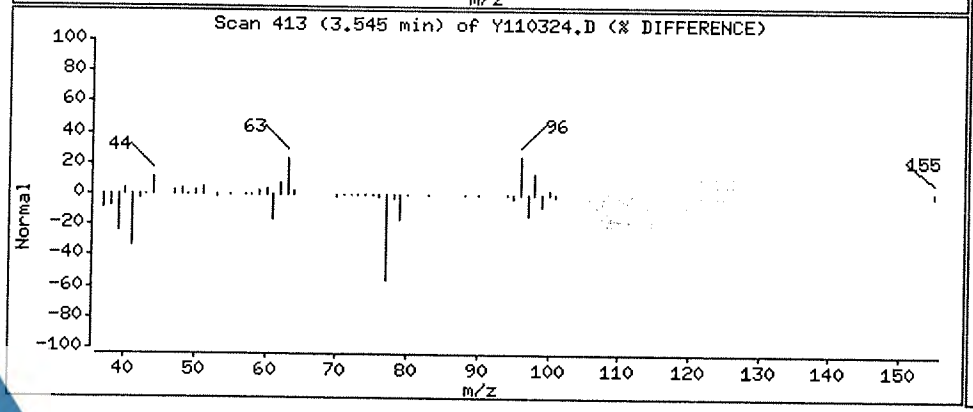












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110324.D

Date : 04-NOV-2020 06:35

Client ID: HS20101123-06

Instrument: voa6.i

Sample Info: HS20101123-06;HS20101123-06;;;

Purge Volume: 5.0

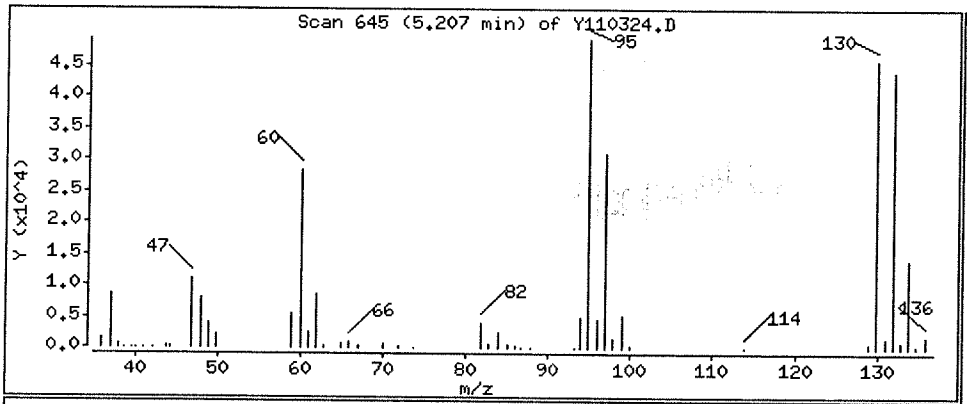
Operator: PC

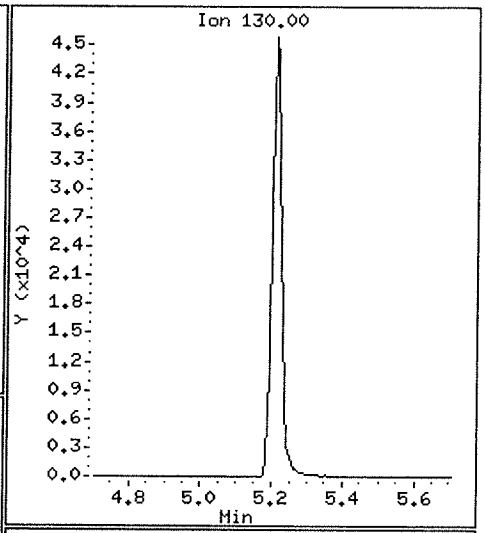
Column phase: DB624

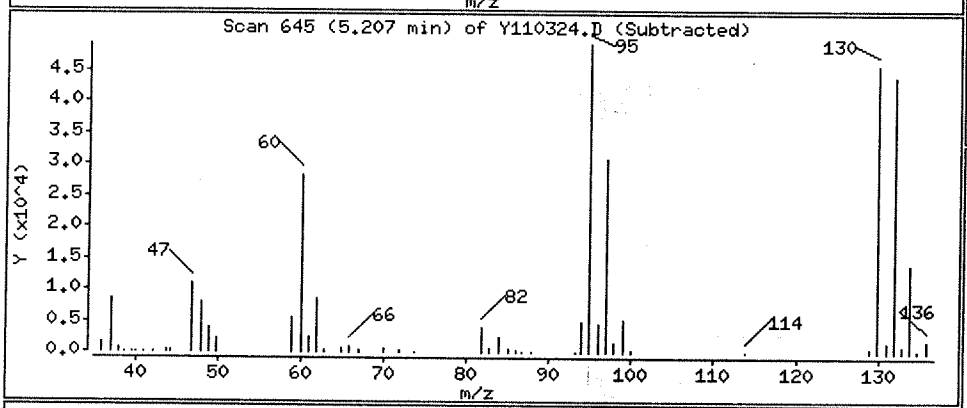
Column diameter: 0.18

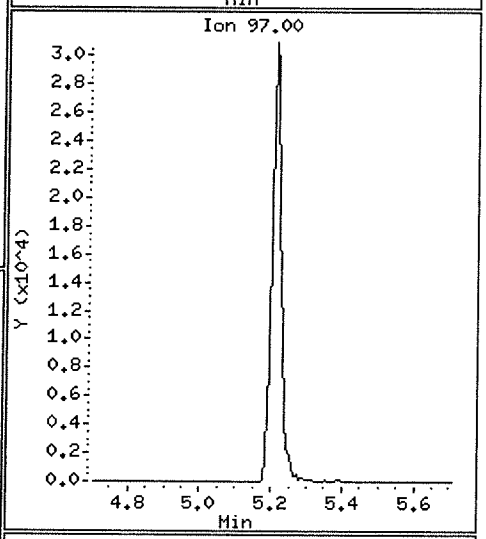
38 Trichloroethene

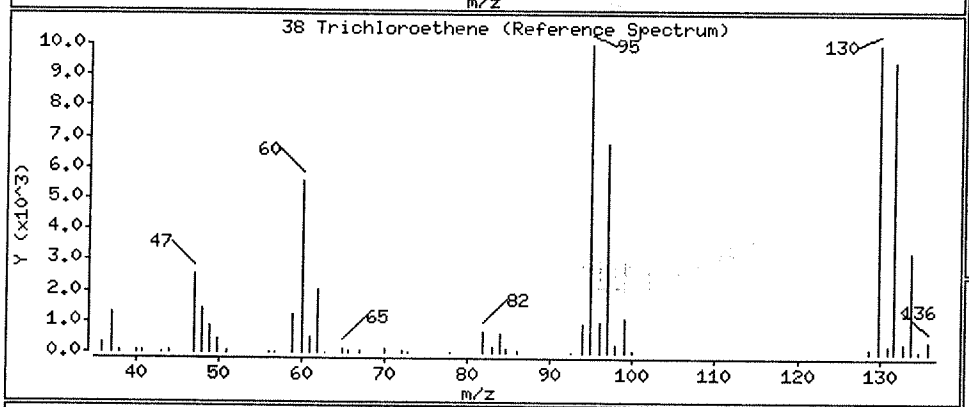
Concentration: 1478.69 ug/l

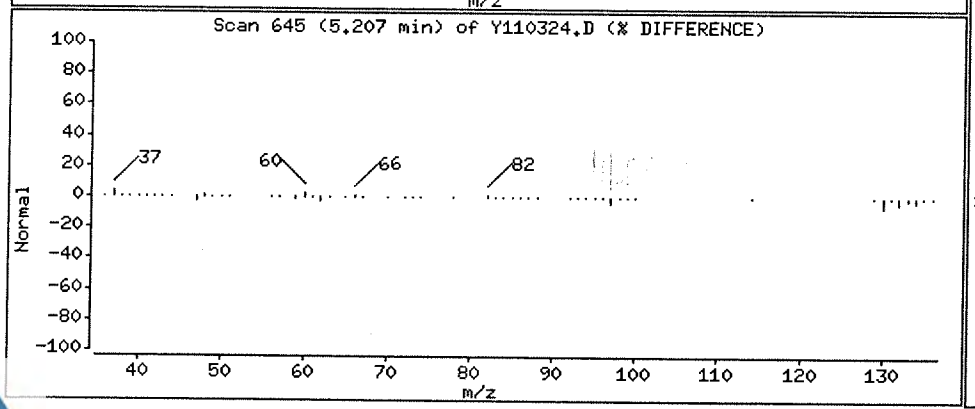


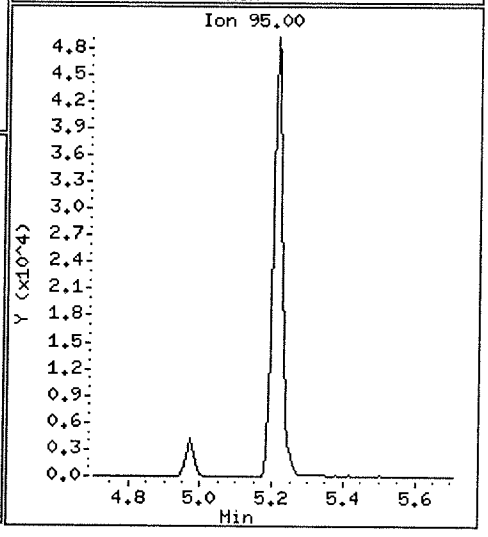












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D
Lab Smp Id: HS20101123-07 Client Smp ID: HS20101123-07
Inj Date : 04-NOV-2020 06:56
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-07;HS20101123-07;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 54
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

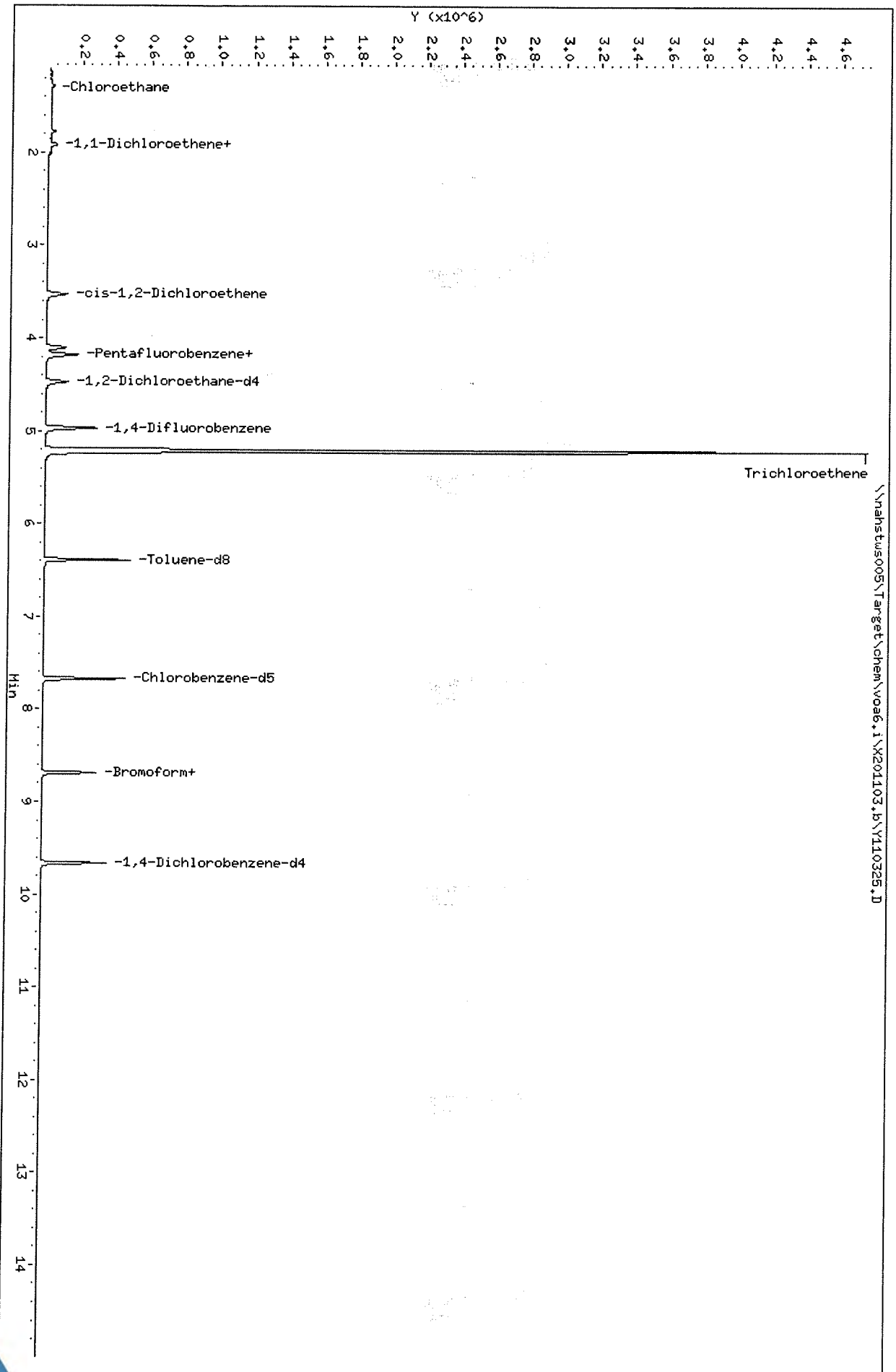
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	130520	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	218305	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	186679	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	71904	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	90677	44.0258	44.02
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	74458	45.0996	45.09
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	73376	41.7447	41.74
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	259313	52.0062	52.00
11 1,1-Dichloroethene	96	1.912	1.919	(0.456)	1997	0.81095	4.05(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	54674	28.5641	142.82
38 Trichloroethene	130	5.207	5.206	(1.048)	1209929	831.687	4158.43(A)
5 Vinyl Chloride	62	1.138	1.145	(0.272)	3057	1.06002	5.30(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D
Date : 04-NOV-2020 06:56
Client ID: HS20101123-07
Sample Info: HS20101123-07;HS20101123-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D

Date : 04-NOV-2020 06:56

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

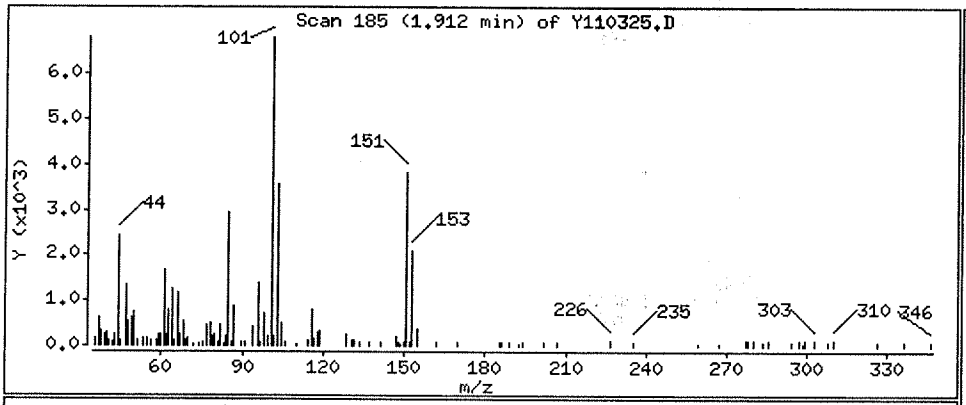
Operator: PC

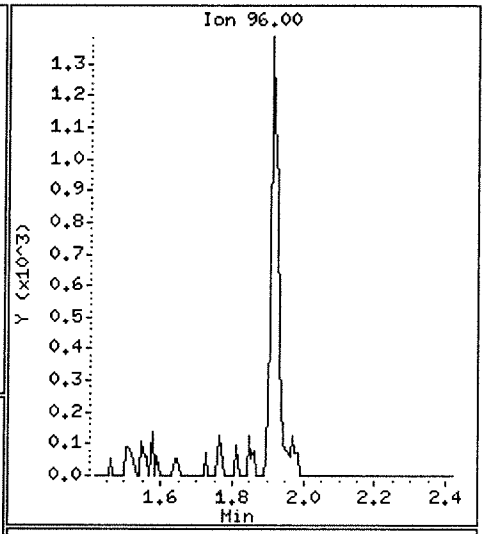
Column phase: DB624

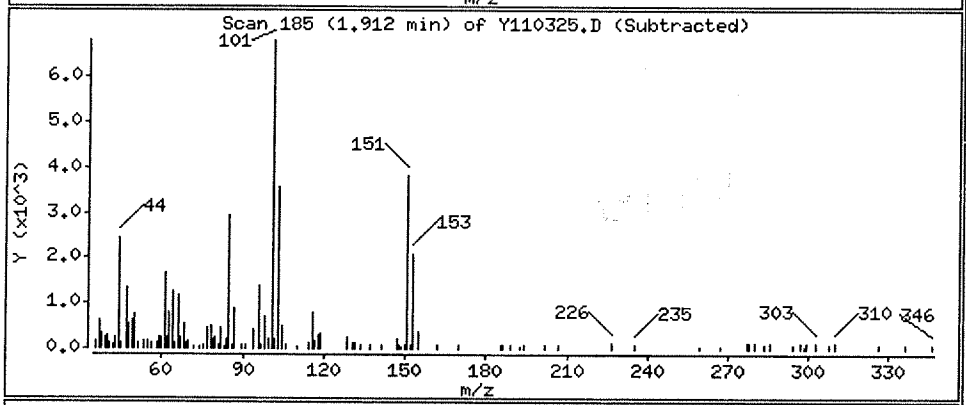
Column diameter: 0.18

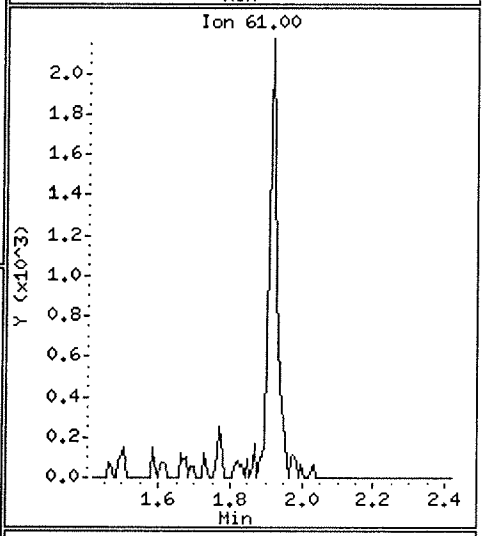
11 1,1-Dichloroethene

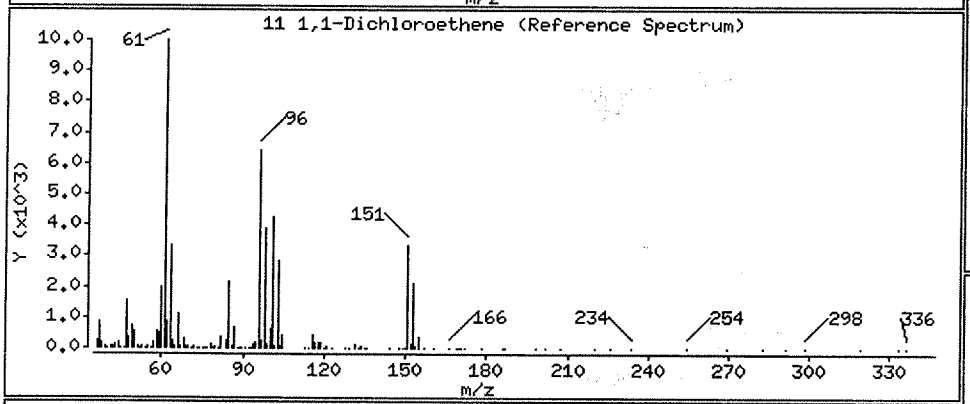
Concentration: 4.05 ug/l

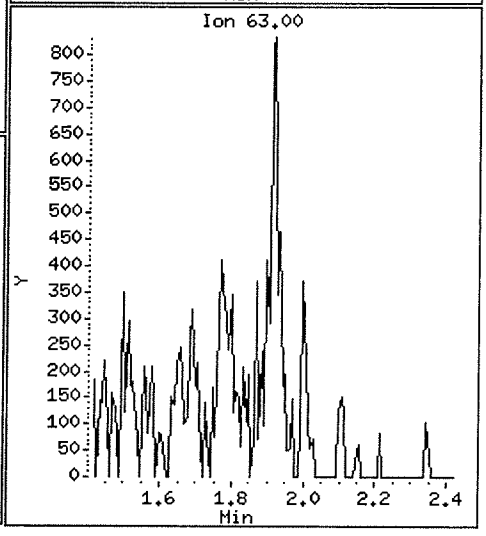


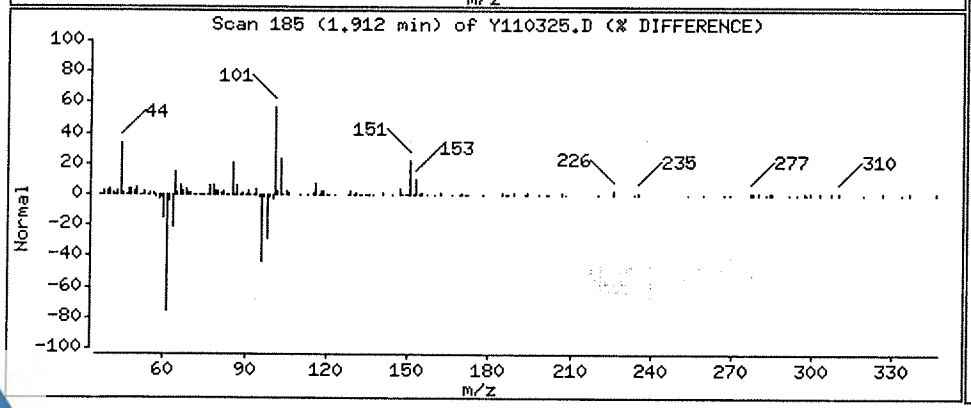












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D

Date : 04-NOV-2020 06:56

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

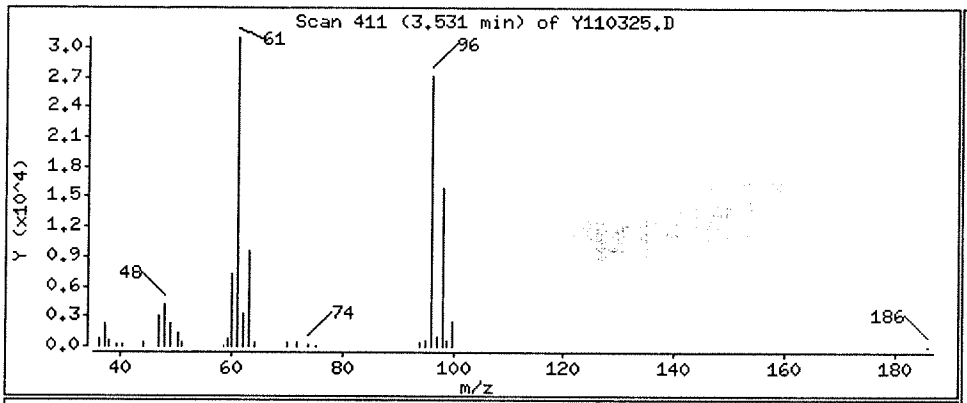
Operator: PC

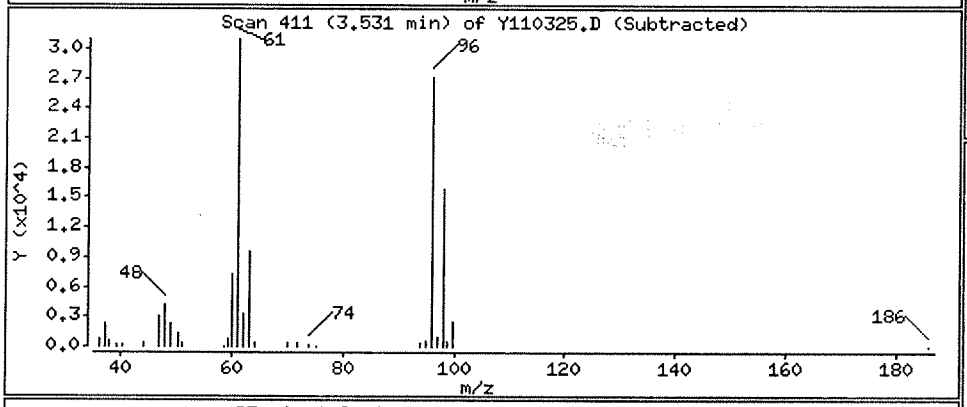
Column phase: DB624

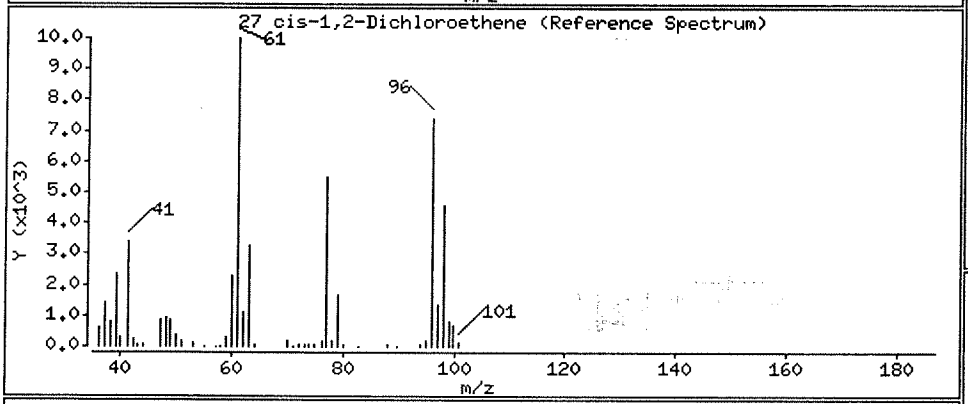
Column diameter: 0.18

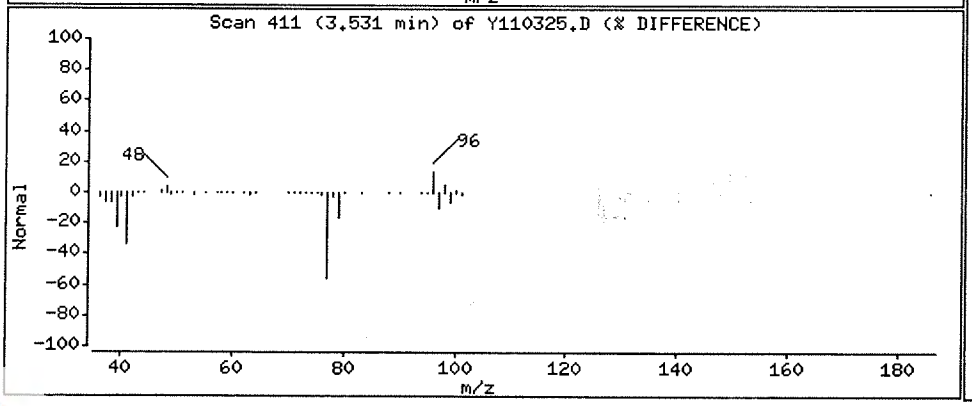
27 cis-1,2-Dichloroethene

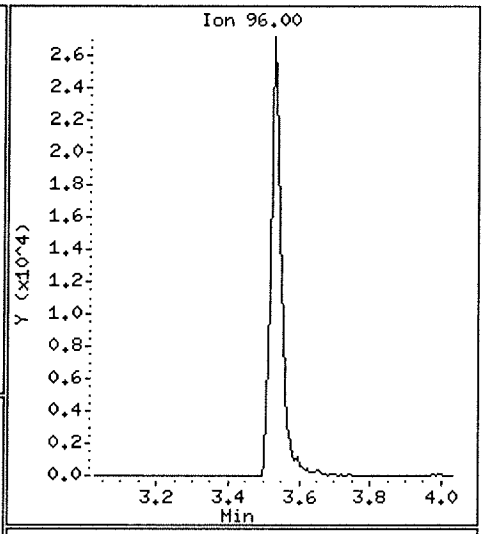
Concentration: 142.82 ug/l

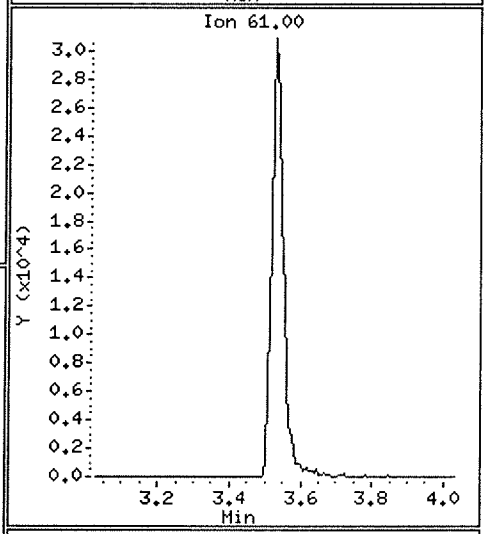


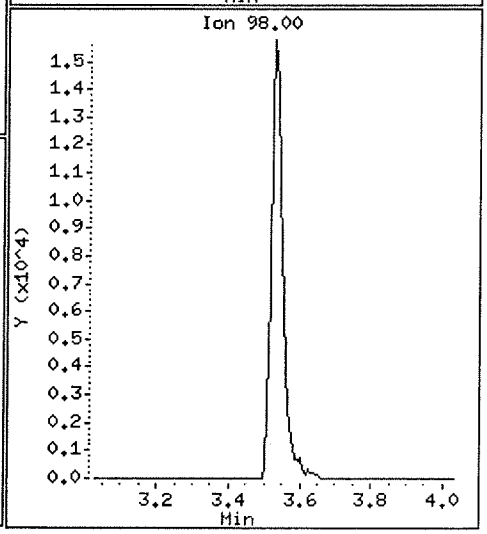












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D

Date : 04-NOV-2020 06:56

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

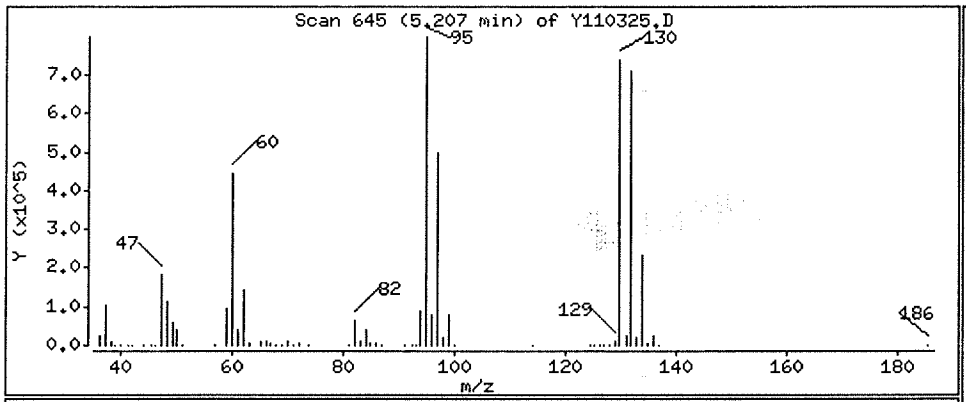
Operator: PC

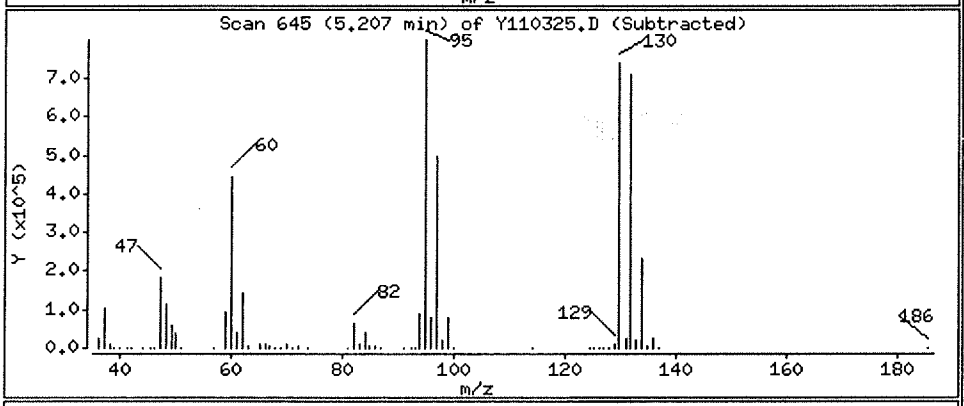
Column phase: DB624

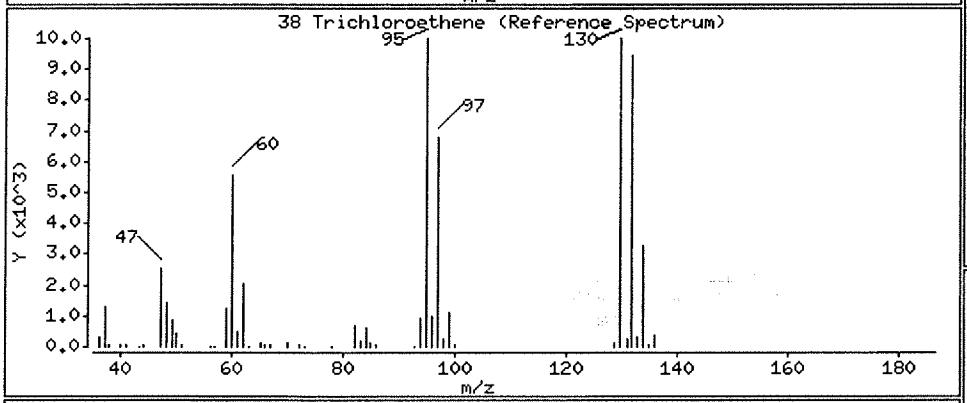
Column diameter: 0.18

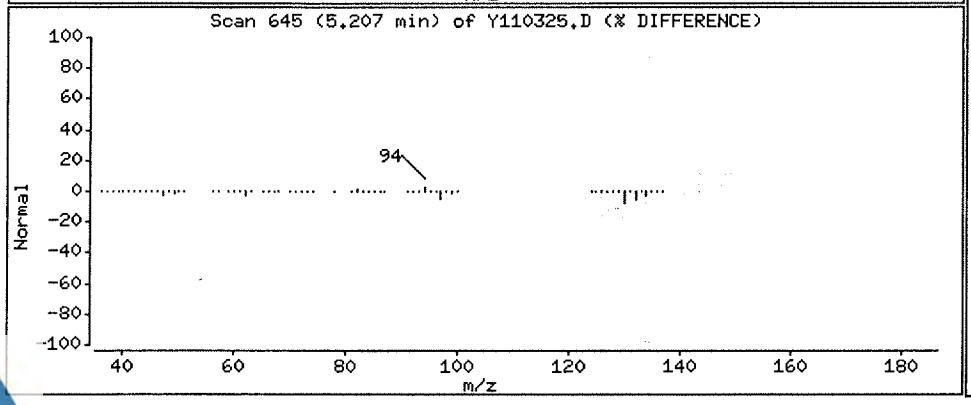
38 Trichloroethene

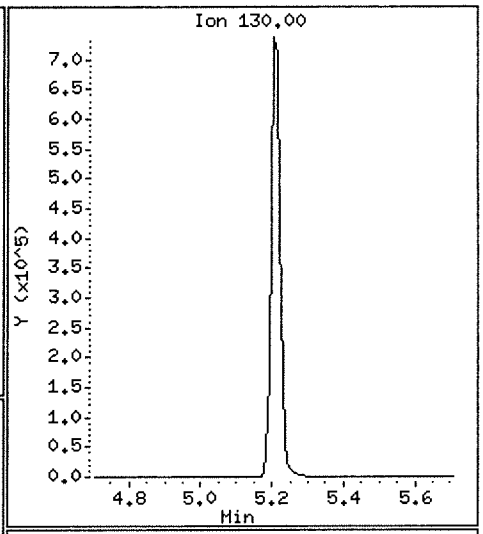
Concentration: 4158.43 ug/l

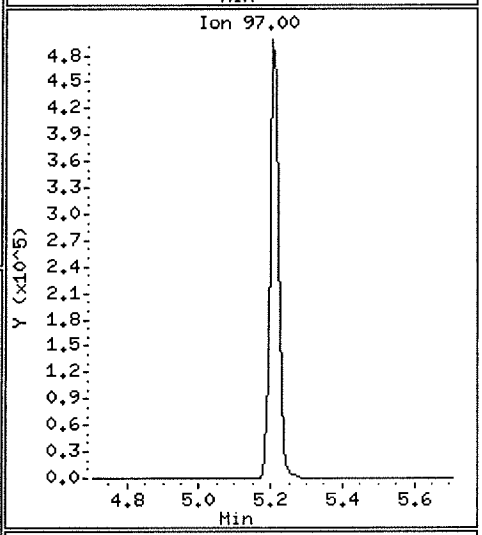


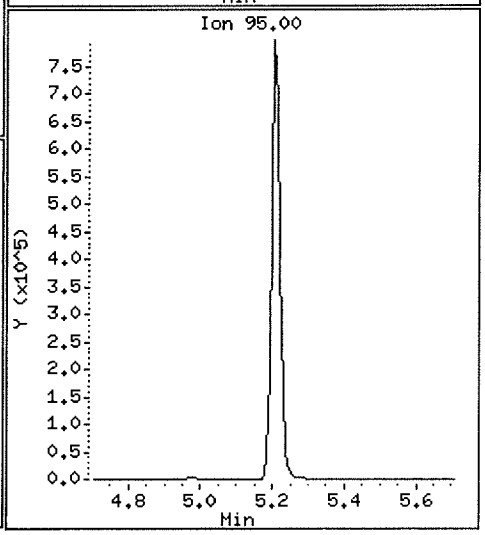












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110325.D

Date : 04-NOV-2020 06:56

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

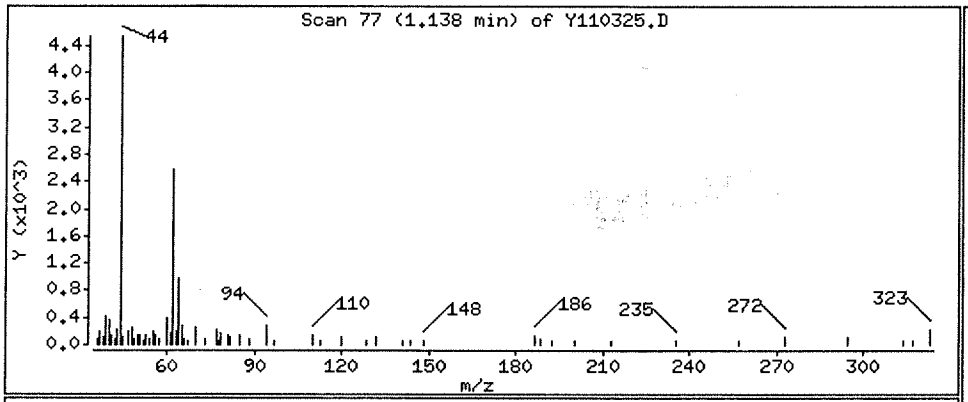
Operator: PC

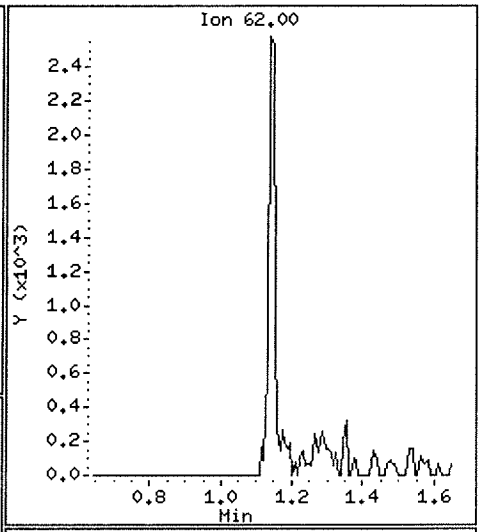
Column phase: DB624

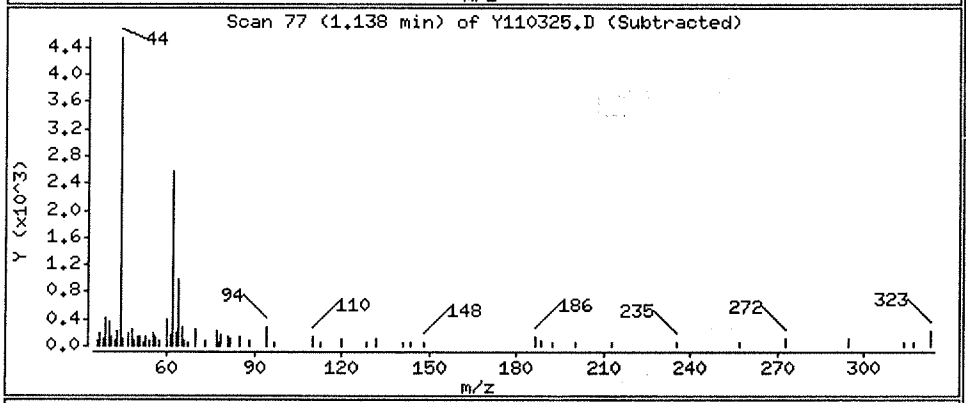
Column diameter: 0.18

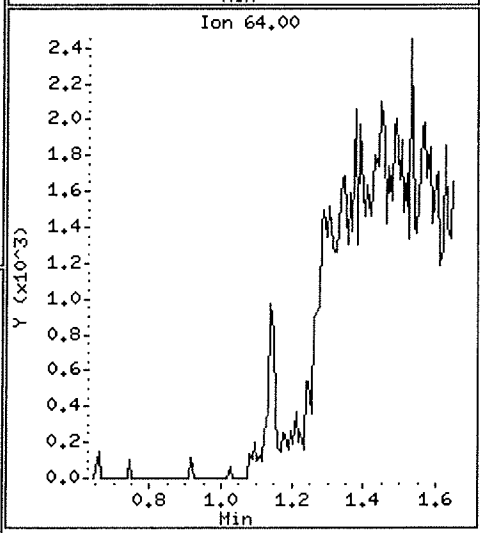
5 Vinyl Chloride

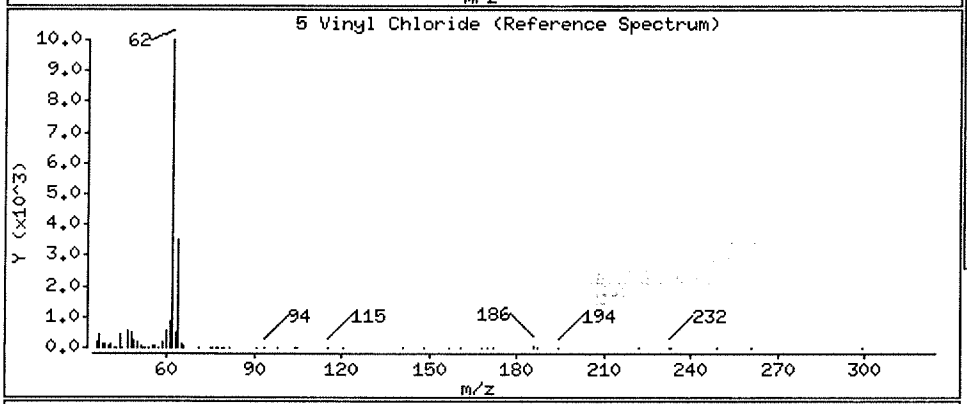
Concentration: 5.30 ug/l

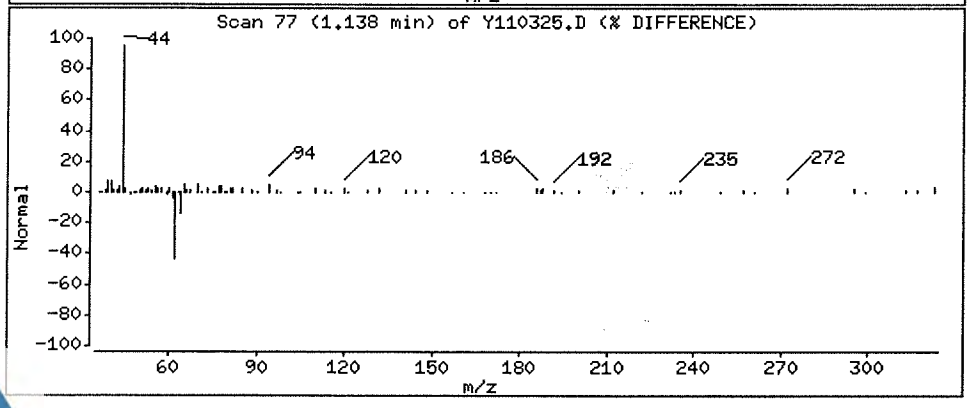












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110326.D
Lab Smp Id: HS20101123-07 Client Smp ID: HS20101123-07
Inj Date : 04-NOV-2020 07:17
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-07;HS20101123-07;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 55
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

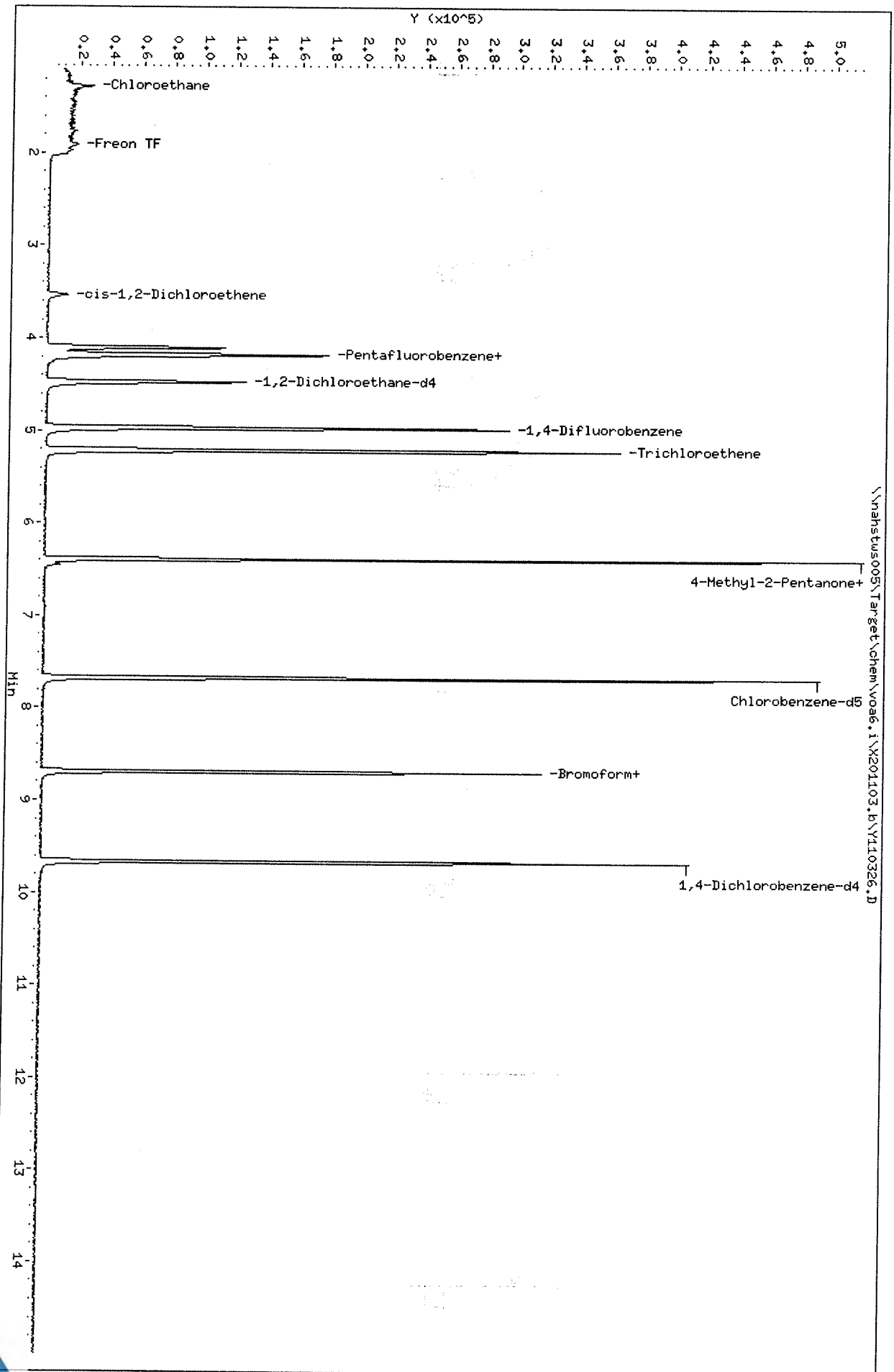
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	126956	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	216281	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	189071	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	75568	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	84803	42.3828	42.38
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	76223	45.5672	45.56
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	73992	43.2769	43.27
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	266341	52.7399	52.73
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.844)	5915	3.17700	158.85(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	98732	68.5020	3425.10

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110326.D
Date : 04-NOV-2020 07:17
Client ID: HS20101123-07
Sample Info: HS20101123-07;HS20101123-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110326.D

Date : 04-NOV-2020 07:17

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

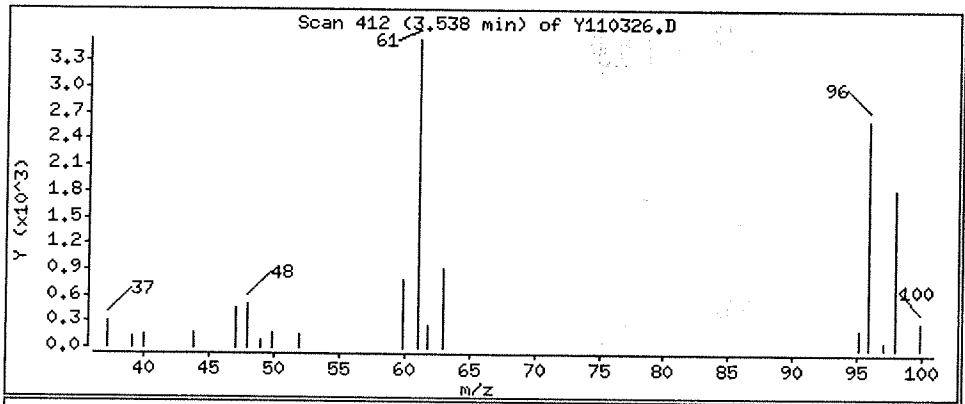
Operator: PC

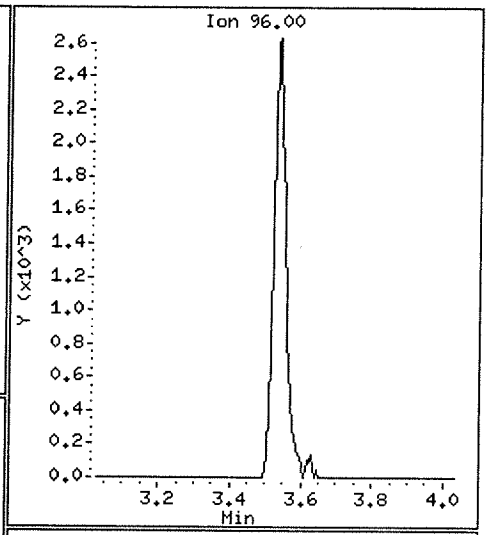
Column phase: DB624

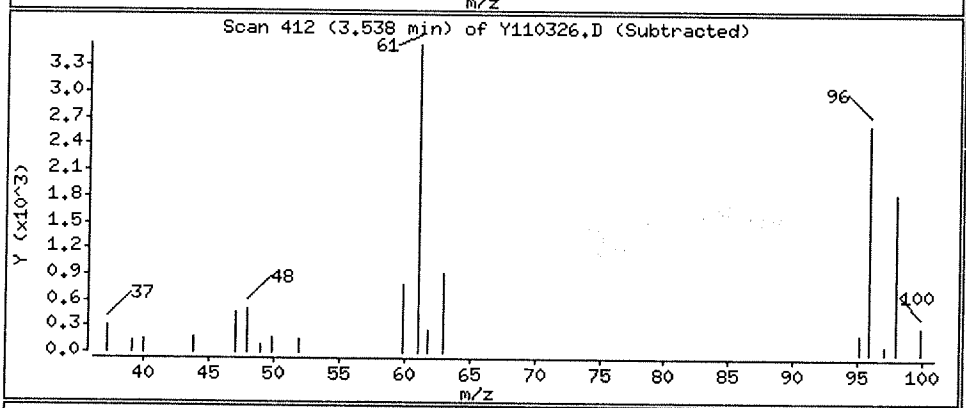
Column diameter: 0.18

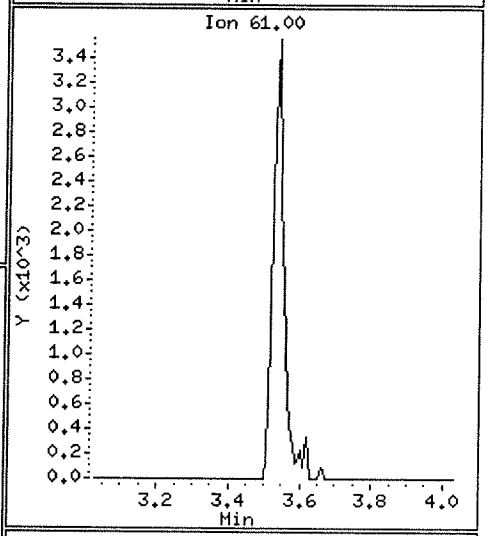
27 cis-1,2-Dichloroethene

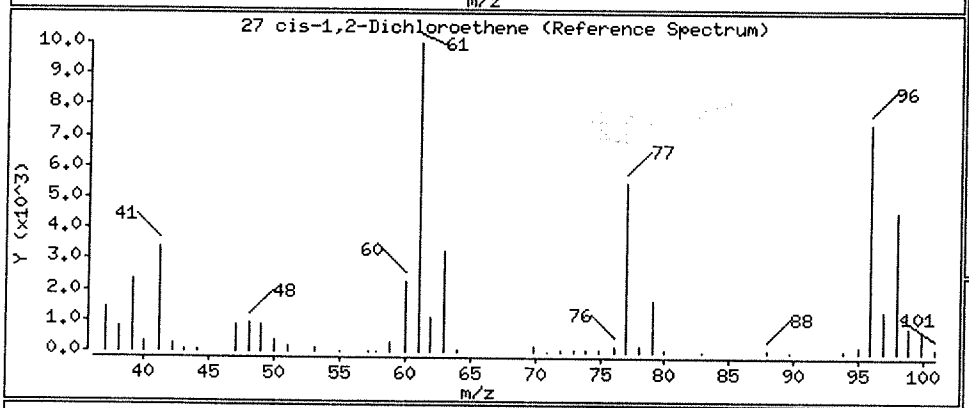
Concentration: 158.85 ug/l

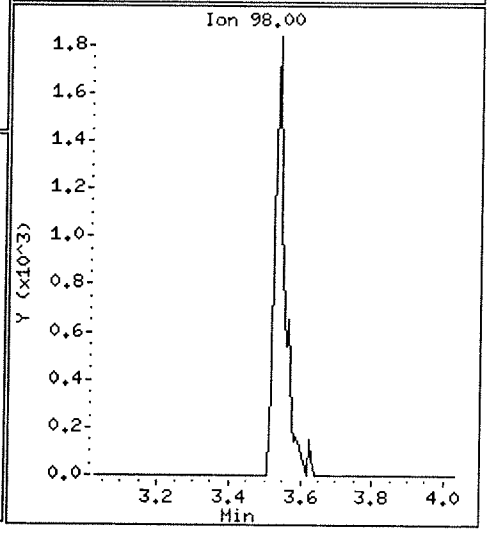


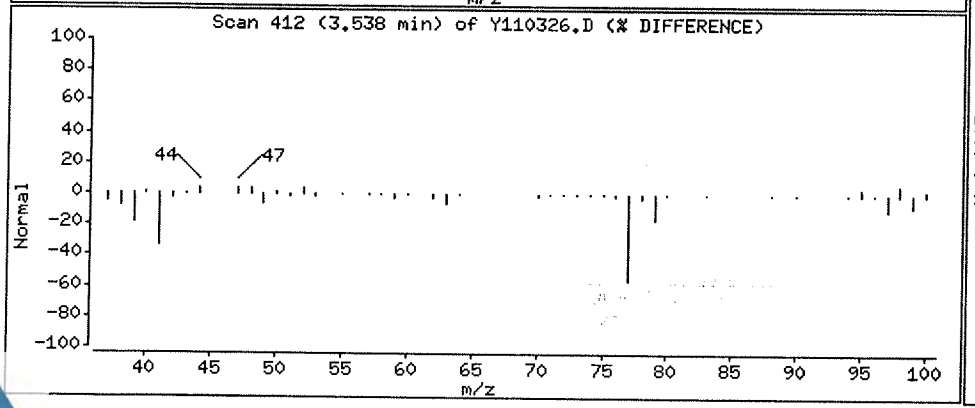












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110326.D

Date : 04-NOV-2020 07:17

Client ID: HS20101123-07

Instrument: voa6.i

Sample Info: HS20101123-07;HS20101123-07;;;

Purge Volume: 5.0

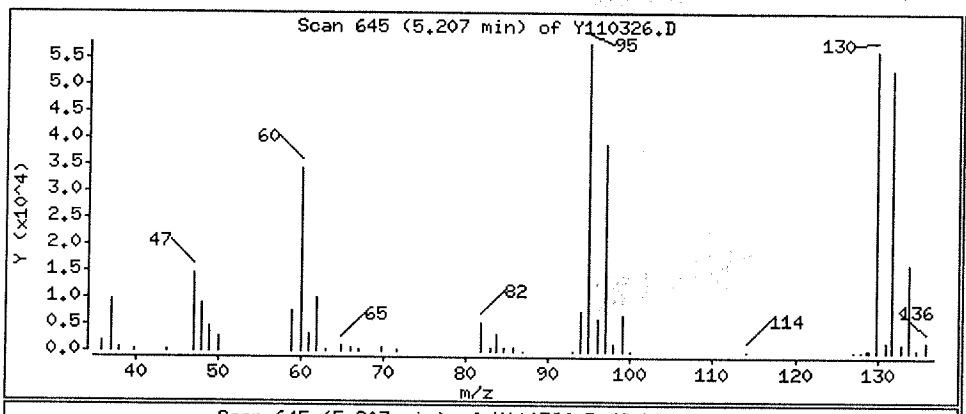
Operator: PC

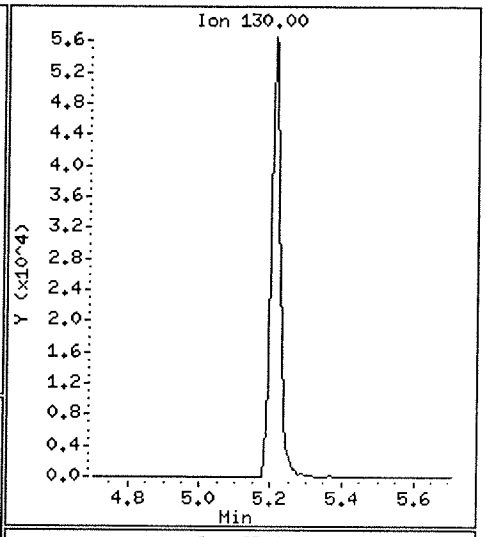
Column phase: DB624

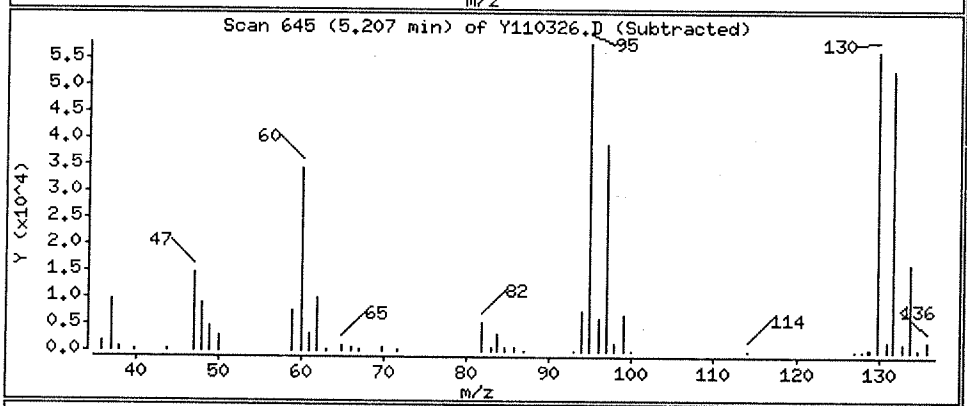
Column diameter: 0.18

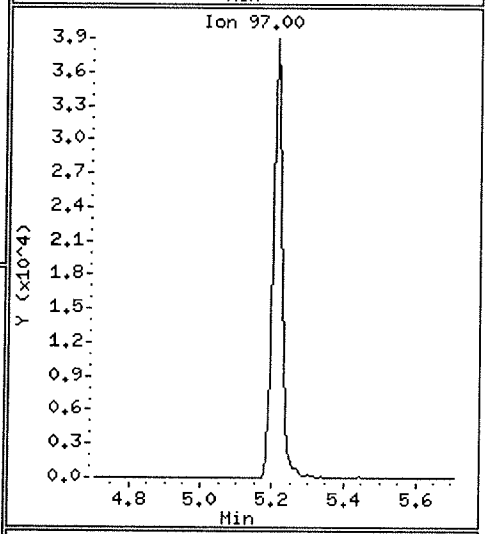
38 Trichloroethene

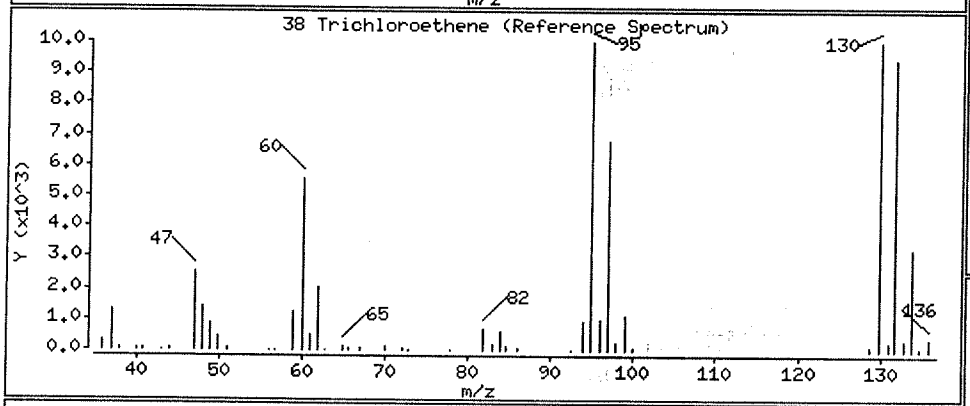
Concentration: 3425.10 ug/l

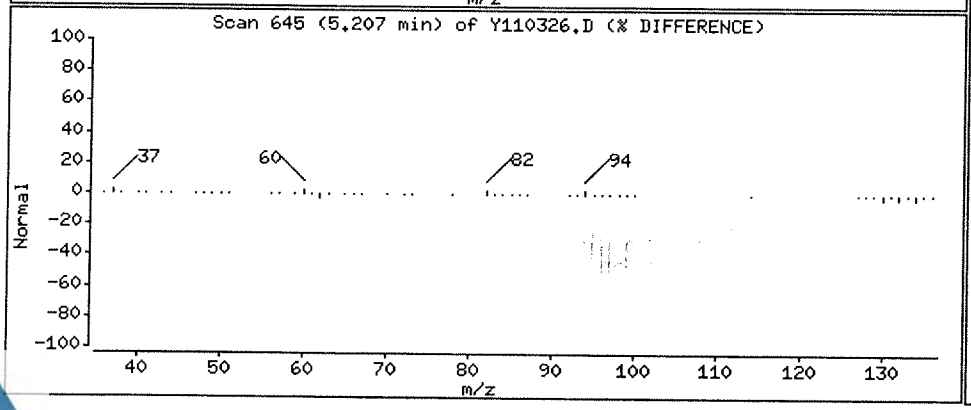


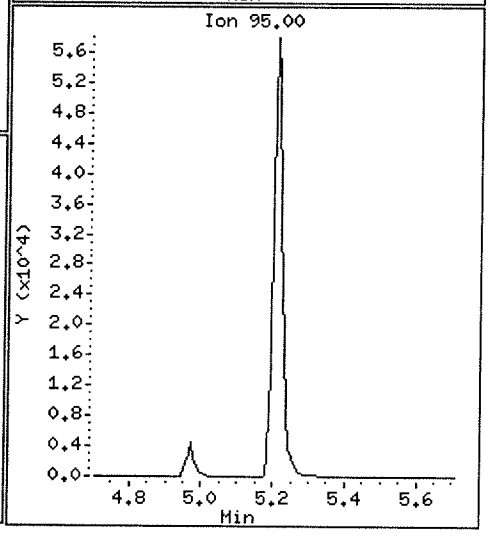












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D
Lab Smp Id: HS20101123-08 Client Smp ID: HS20101123-08
Inj Date : 04-NOV-2020 07:38
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-08;HS20101123-08;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 56
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

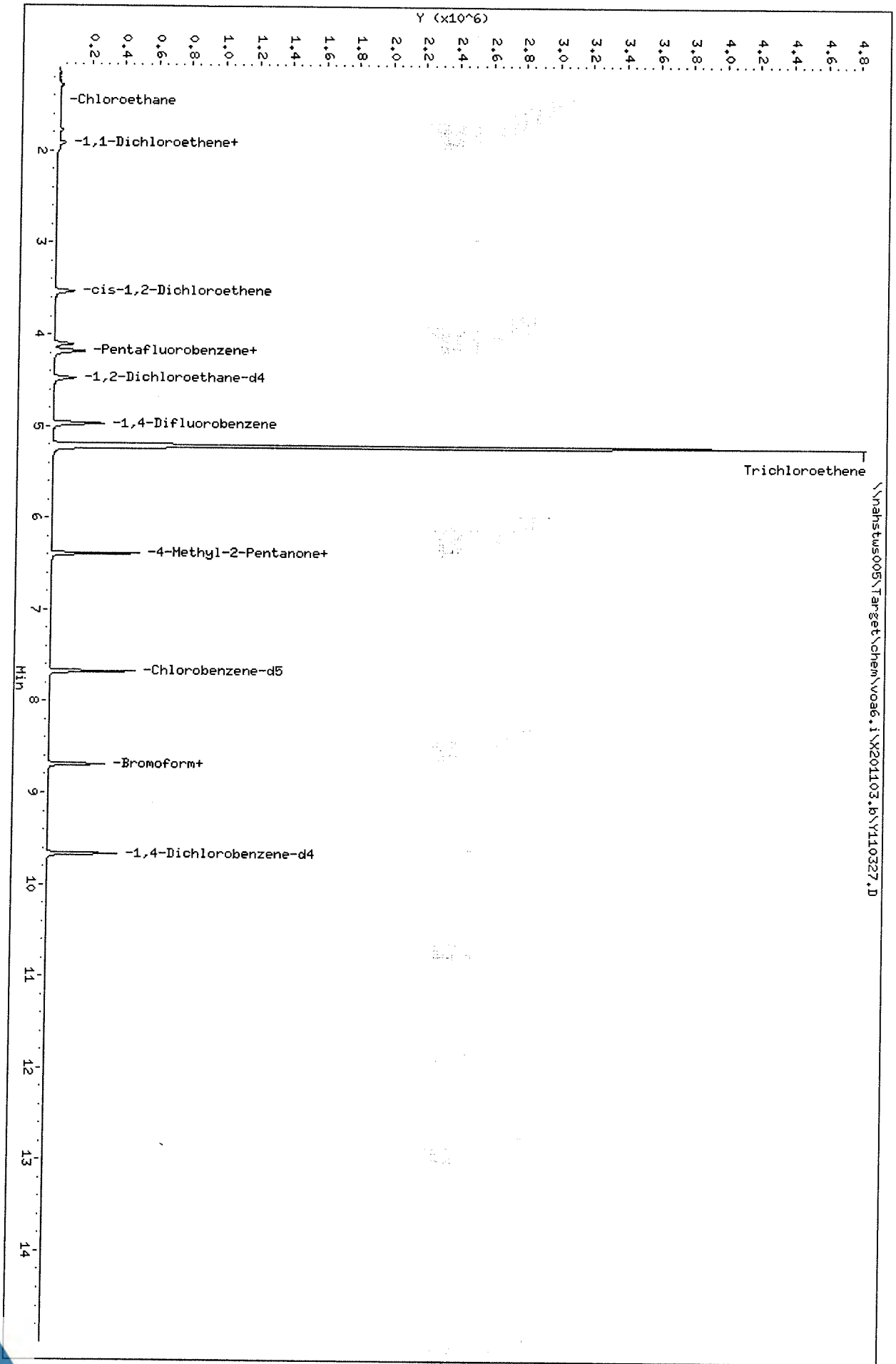
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	133580	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	225902	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	193708	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	81848	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	90410	42.9268	42.92
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	79422	46.3148	46.31
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	74164	41.2265	41.22
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	266084	51.4278	51.42
11 1,1-Dichloroethene	96	1.919	1.919	(0.458)	1618	0.64199	3.20(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	53486	27.3033	136.51
38 Trichloroethene	130	5.206	5.206	(1.048)	1204244	799.942	3999.70(A)
5 Vinyl Chloride	62	1.145	1.145	(0.273)	3307	1.12044	5.60(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D
Date : 04-NOV-2020 07:38
Client ID: HS20101123-08
Sample Info: HS20101123-08;HS20101123-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D

Date : 04-NOV-2020 07:38

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

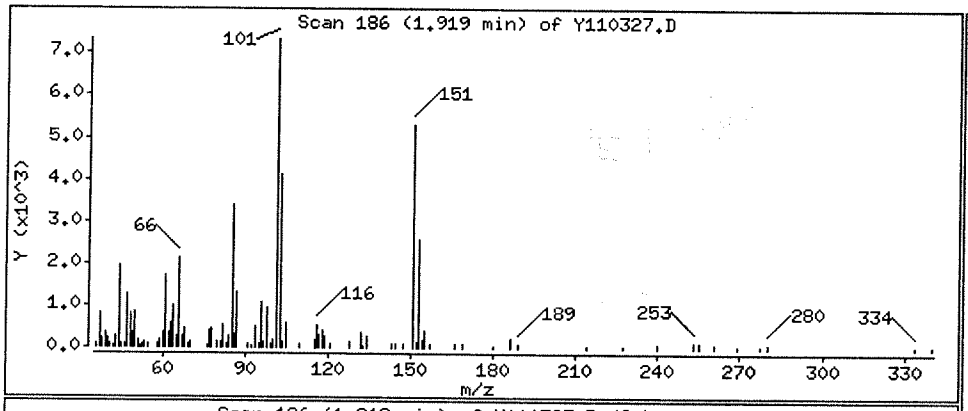
Operator: PC

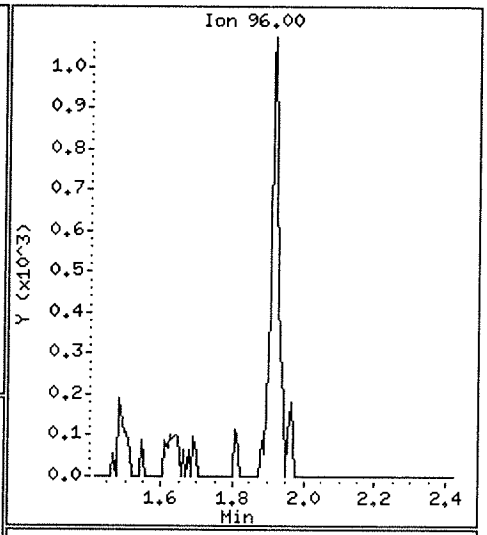
Column phase: DB624

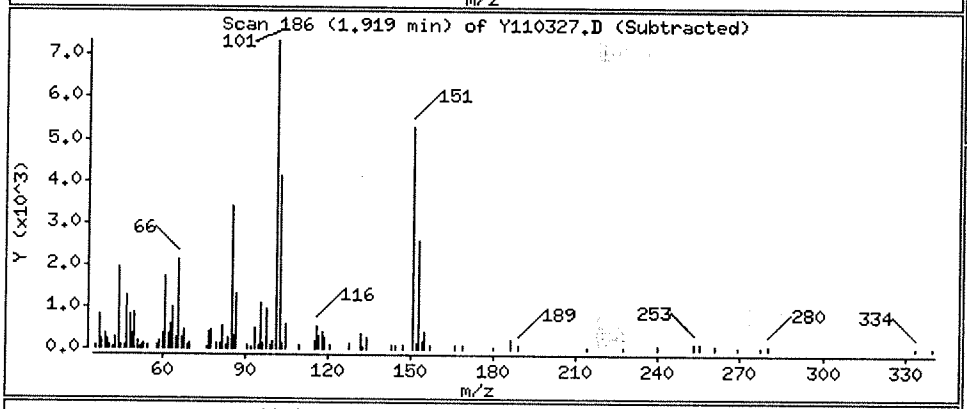
Column diameter: 0.18

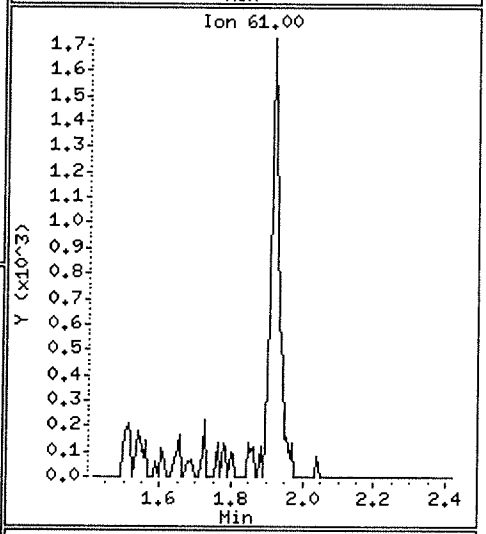
11 1,1-Dichloroethene

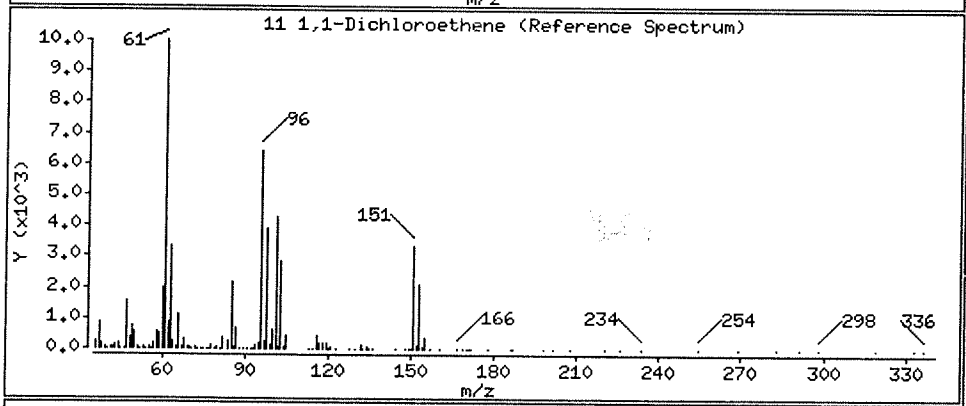
Concentration: 3.20 ug/l

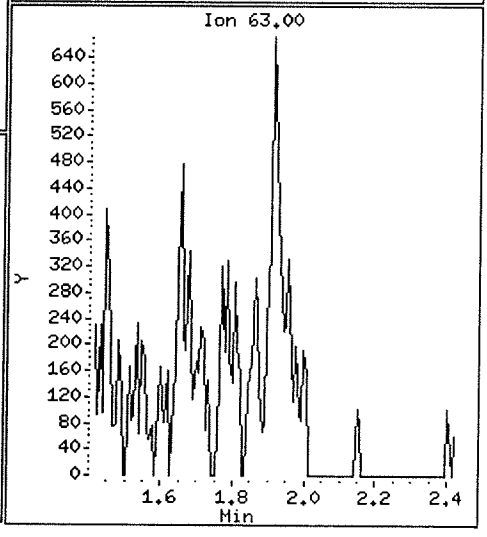


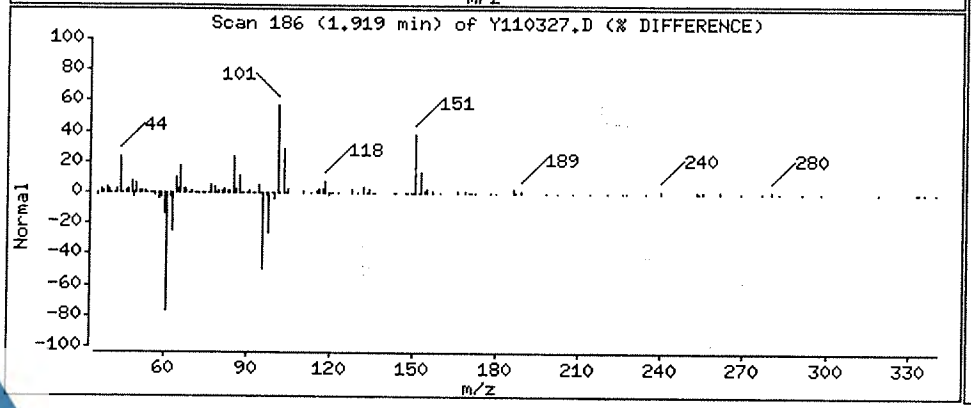












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D

Date : 04-NOV-2020 07:38

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

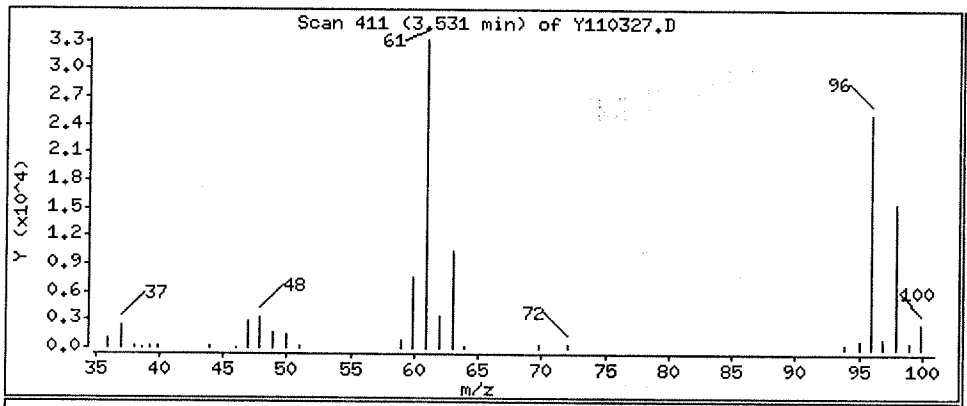
Operator: PC

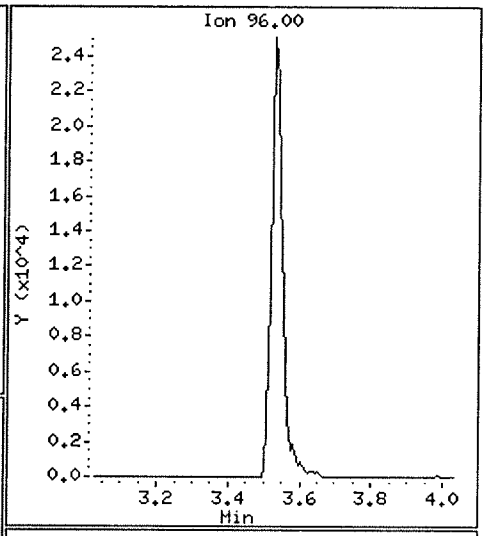
Column phase: DB624

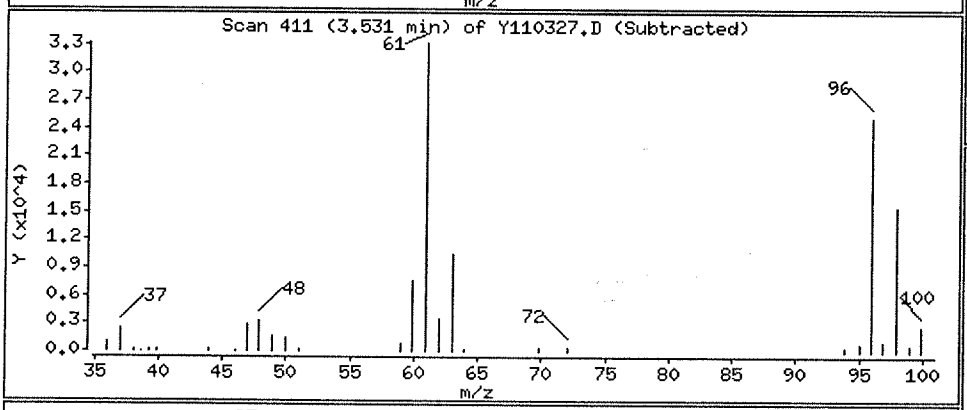
Column diameter: 0.18

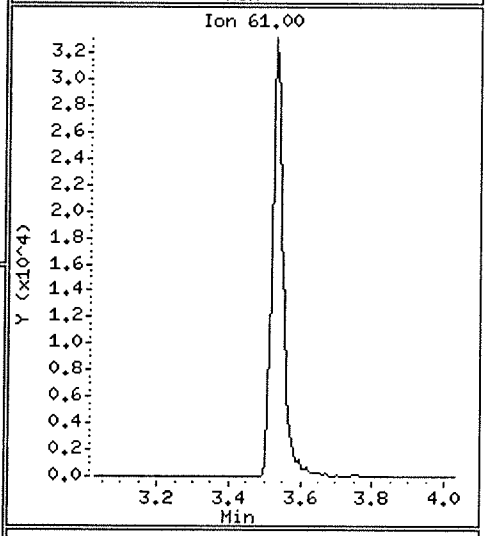
27 cis-1,2-Dichloroethene

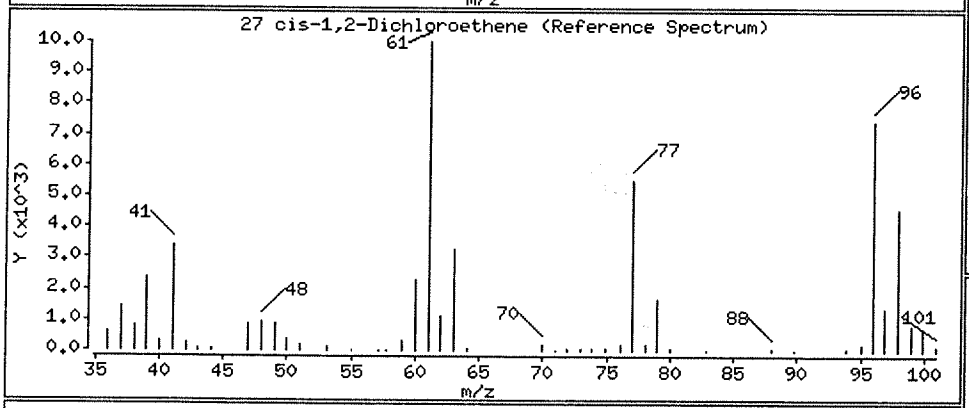
Concentration: 136.51 ug/l

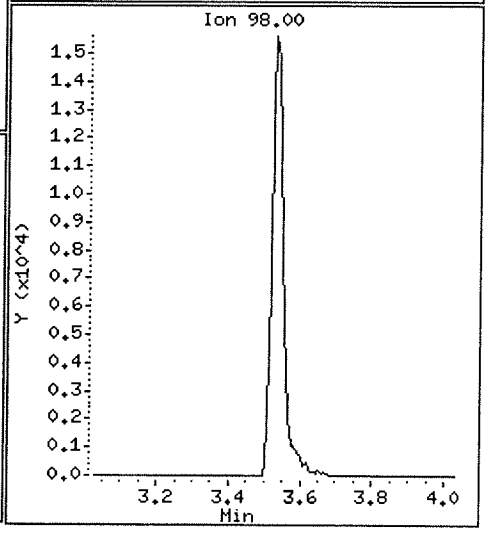


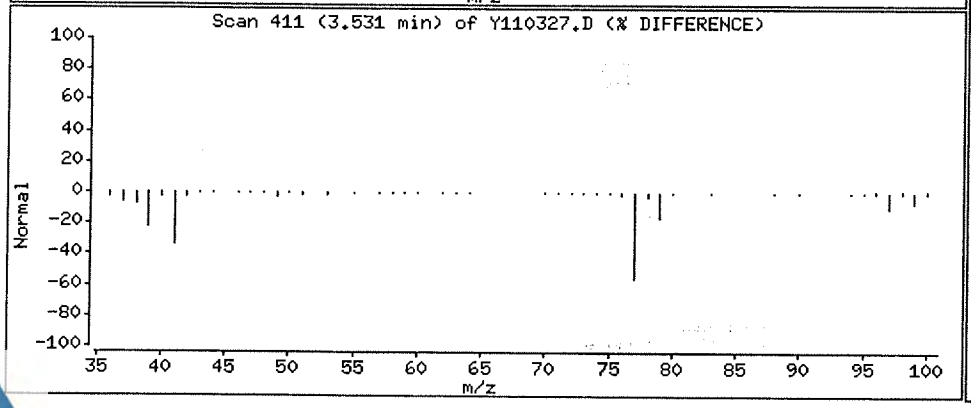












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D

Date : 04-NOV-2020 07:38

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

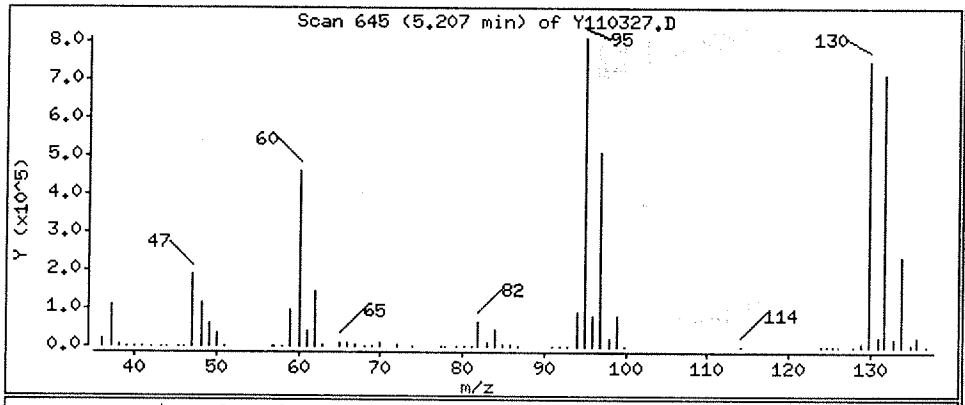
Operator: PC

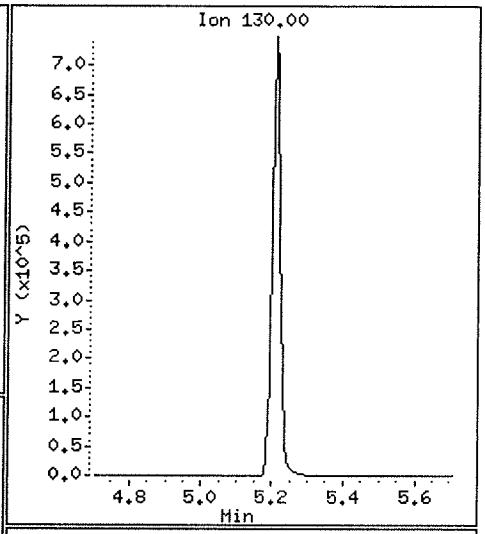
Column phase: DB624

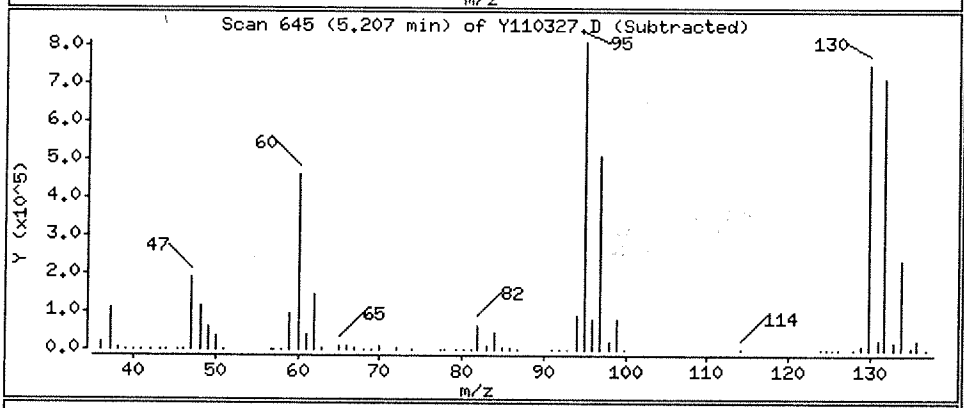
Column diameter: 0.18

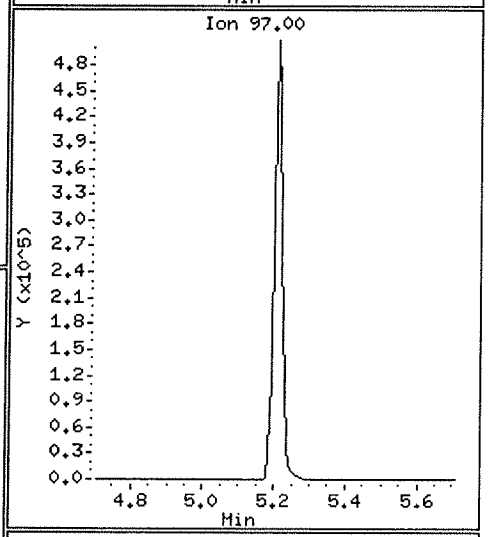
38 Trichloroethene

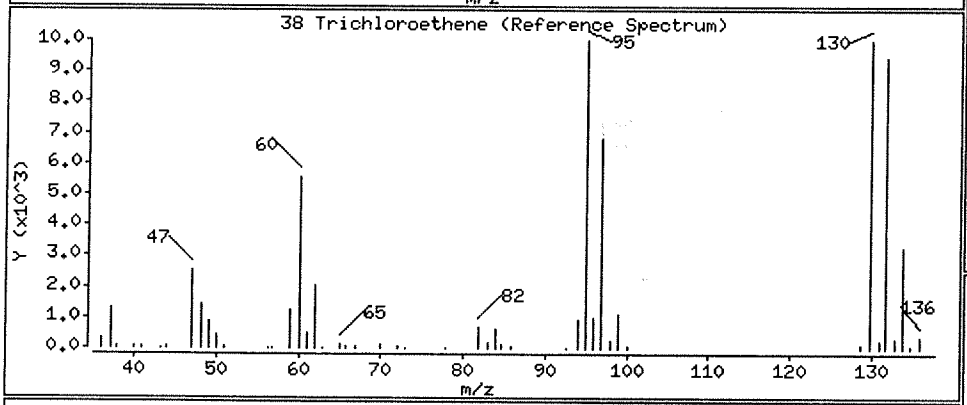
Concentration: 3999.70 ug/l

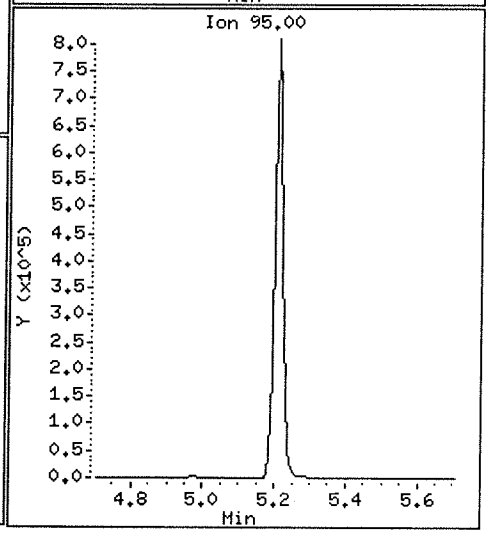


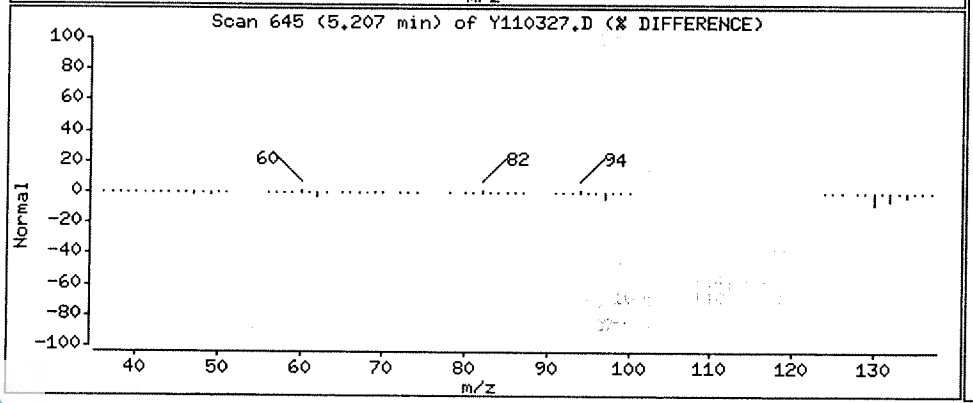












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110327.D

Date : 04-NOV-2020 07:38

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

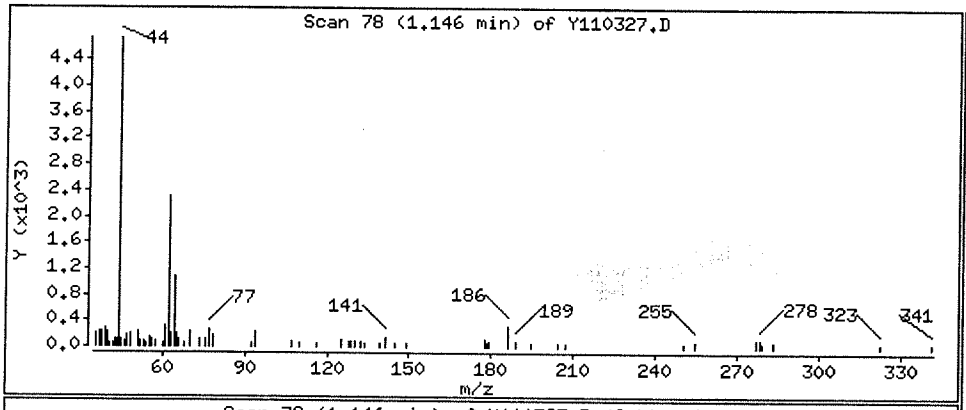
Operator: PC

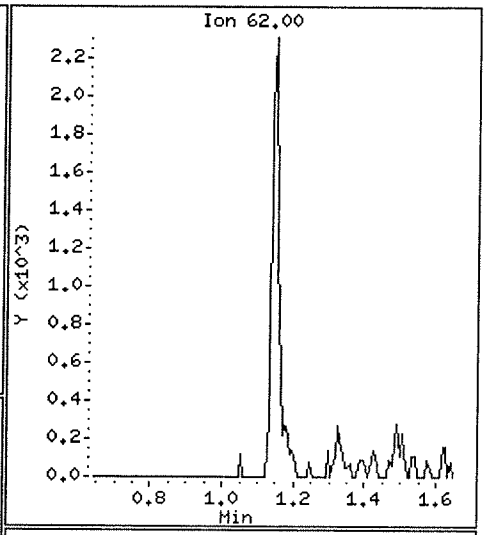
Column phase: DB624

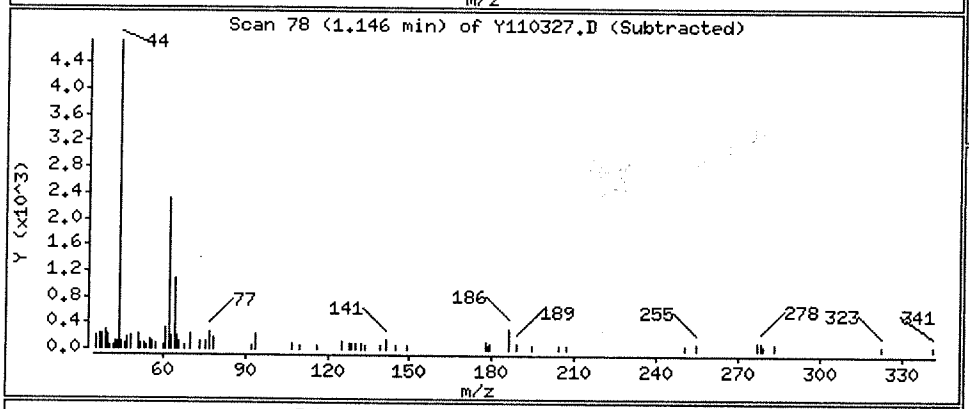
Column diameter: 0.18

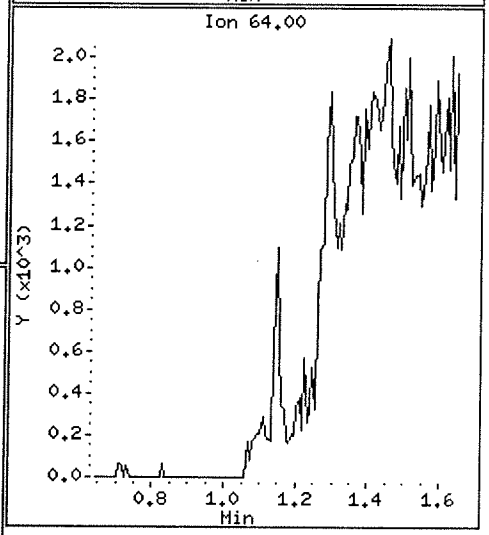
5 Vinyl Chloride

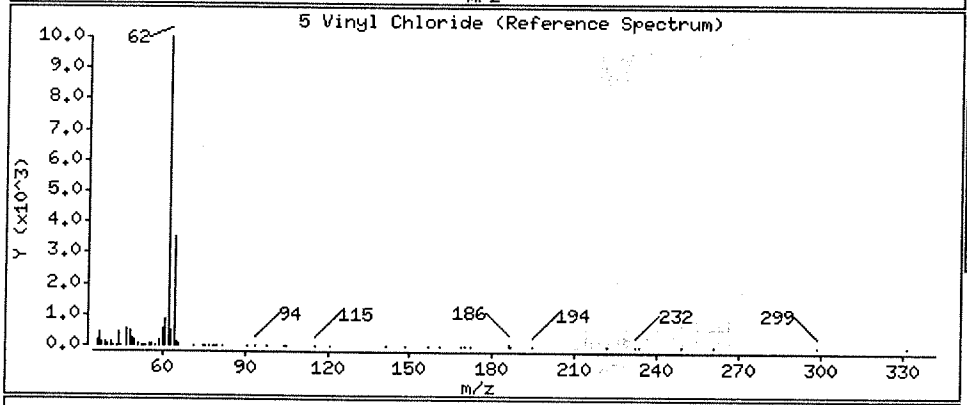
Concentration: 5.60 ug/l

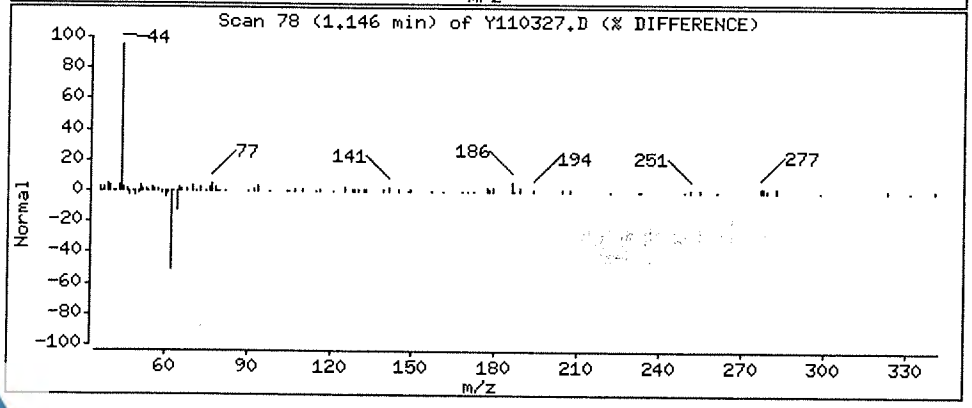












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110328.D Page 1
Report Date: 30-Nov-2020 16:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110328.D
Lab Smp Id: HS20101123-08 Client Smp ID: HS20101123-08
Inj Date : 04-NOV-2020 07:59
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-08;HS20101123-08;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 57
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

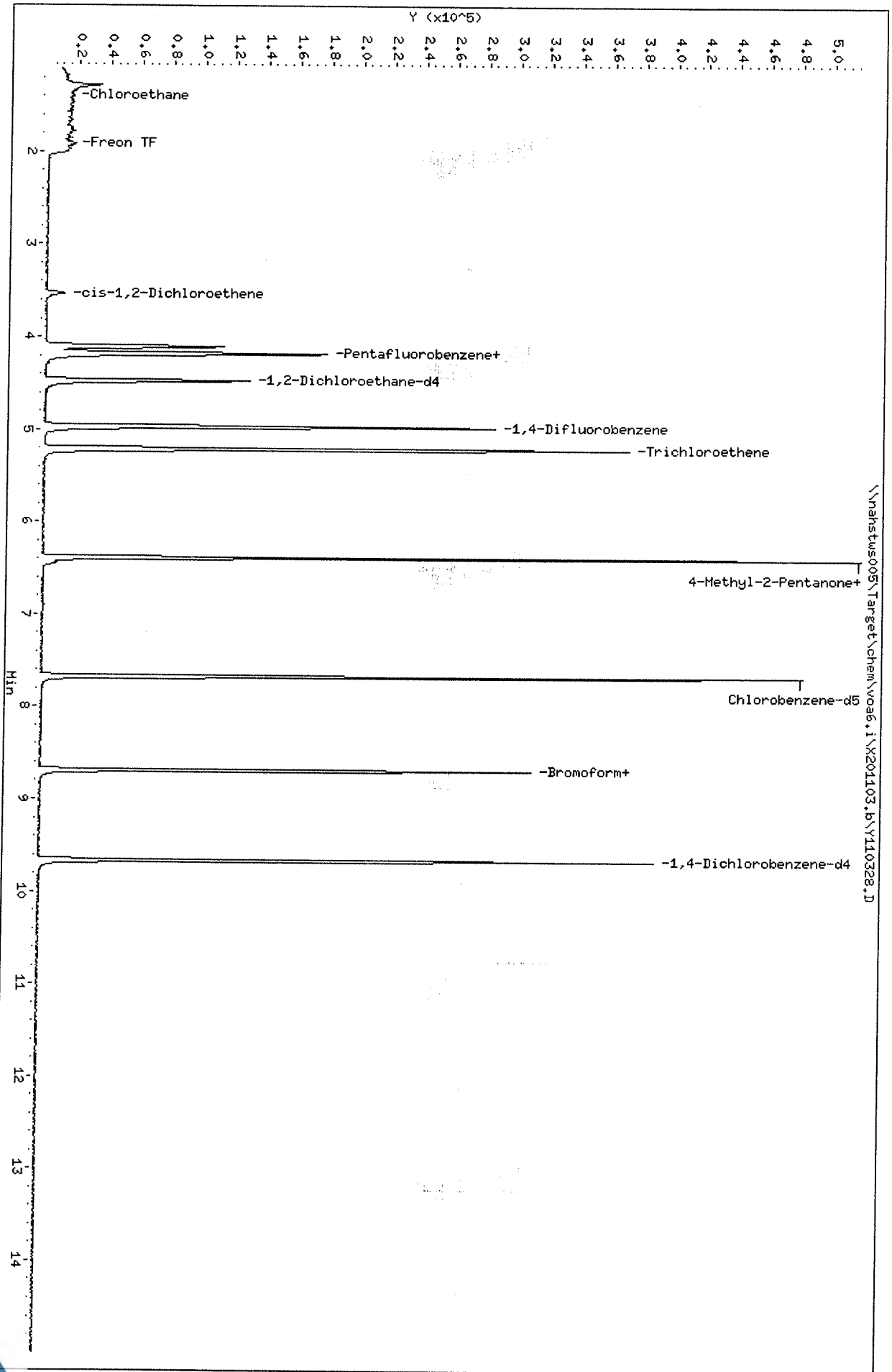
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	129262	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	218392	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	189579	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	74046	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	86647	42.5272	42.52
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	74972	44.7299	44.72
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.979)	72542	41.6719	41.67
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	256556	50.6662	50.66
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.844)	5784	3.05122	152.56(a)
38 Trichloroethene	130	5.207	5.206	(1.048)	104430	71.7551	3587.75

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110328.D
Date : 04-NOV-2020 07:59
Client ID: HS20101123-08
Sample Info: HS20101123-08;HS20101123-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110328.D

Date : 04-NOV-2020 07:59

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

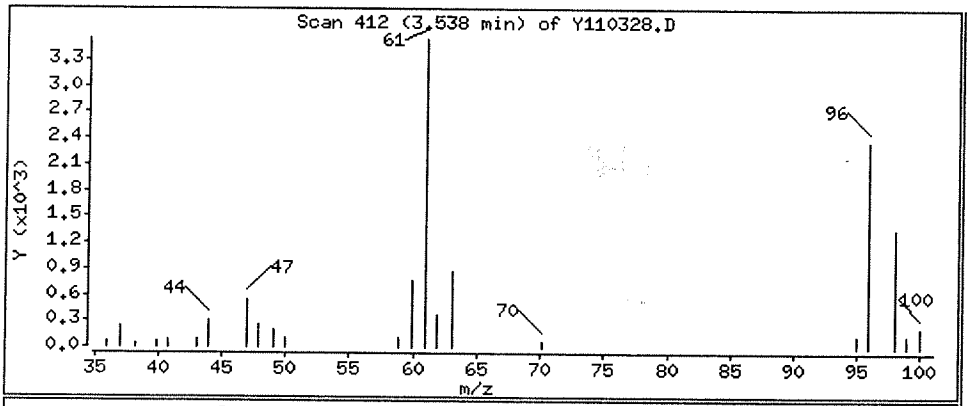
Operator: PC

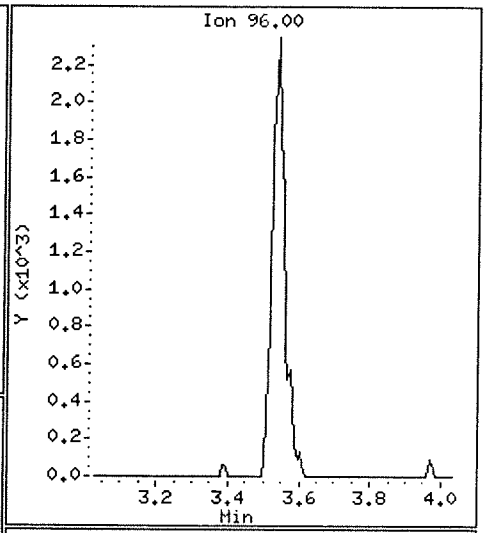
Column phase: DB624

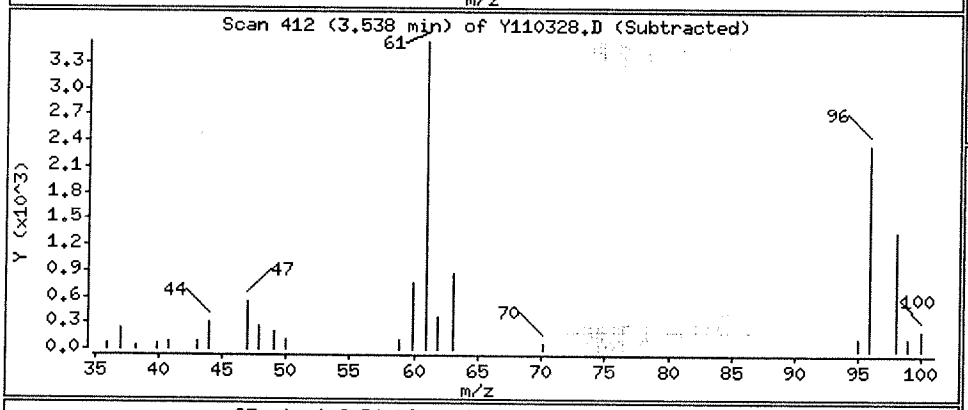
Column diameter: 0.18

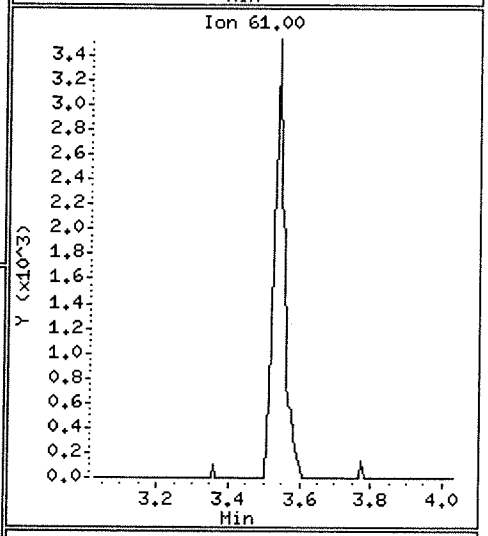
27 cis-1,2-Dichloroethene

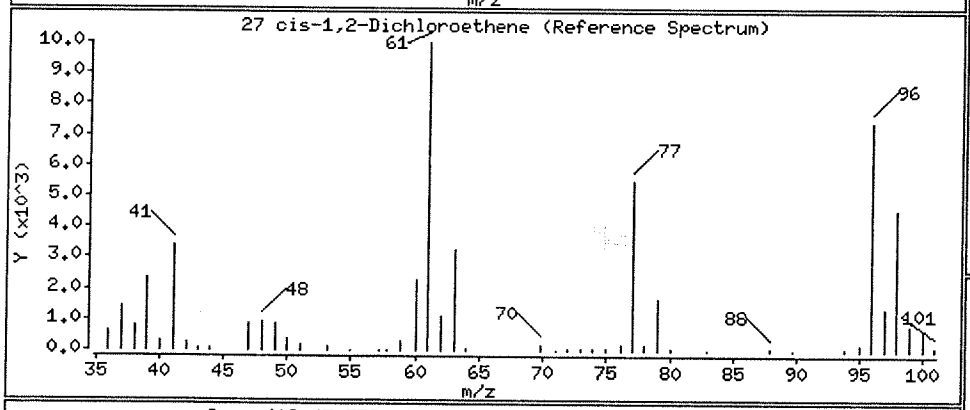
Concentration: 152.56 ug/l

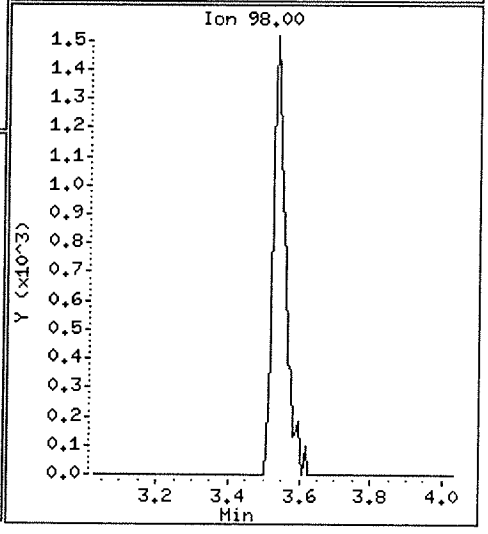


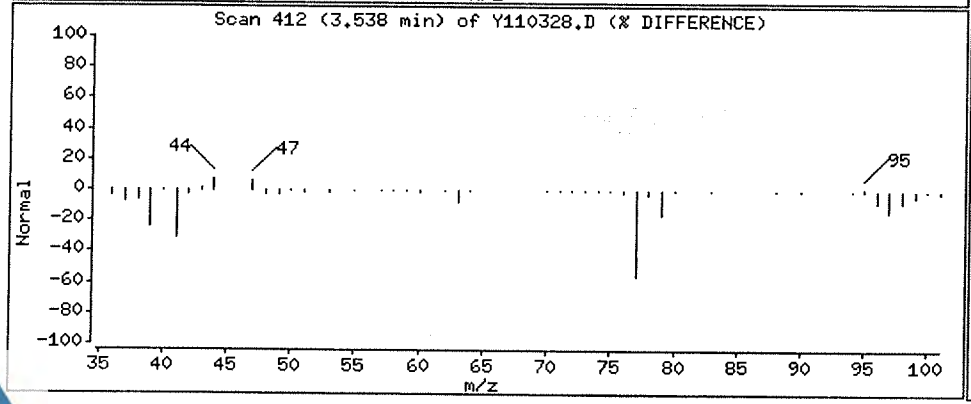












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110328.D

Date : 04-NOV-2020 07:59

Client ID: HS20101123-08

Instrument: voa6.i

Sample Info: HS20101123-08;HS20101123-08;;;

Purge Volume: 5.0

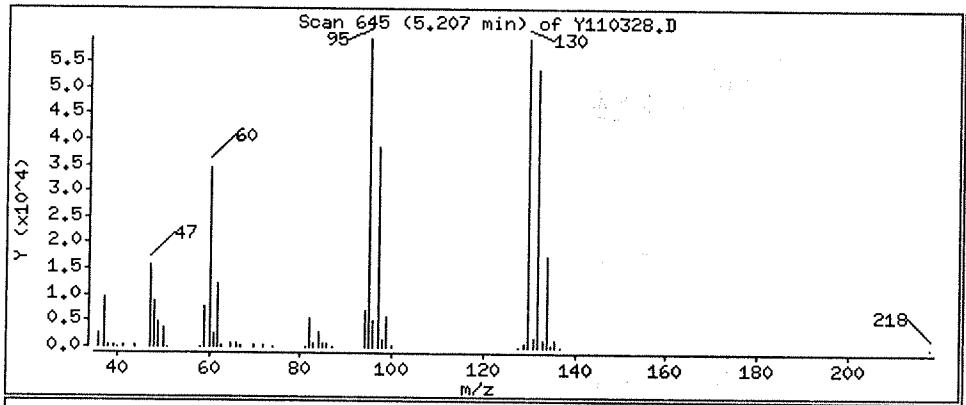
Operator: PC

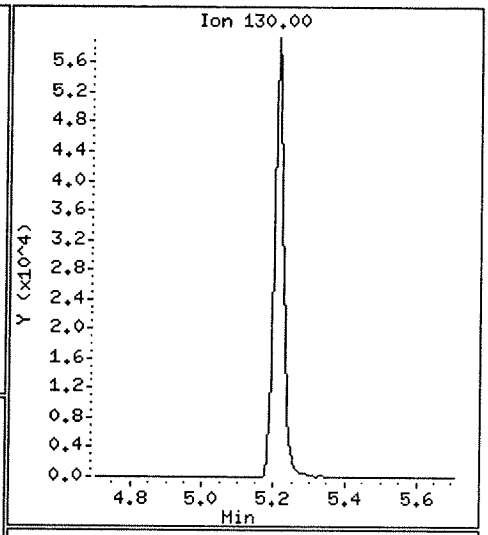
Column phase: DB624

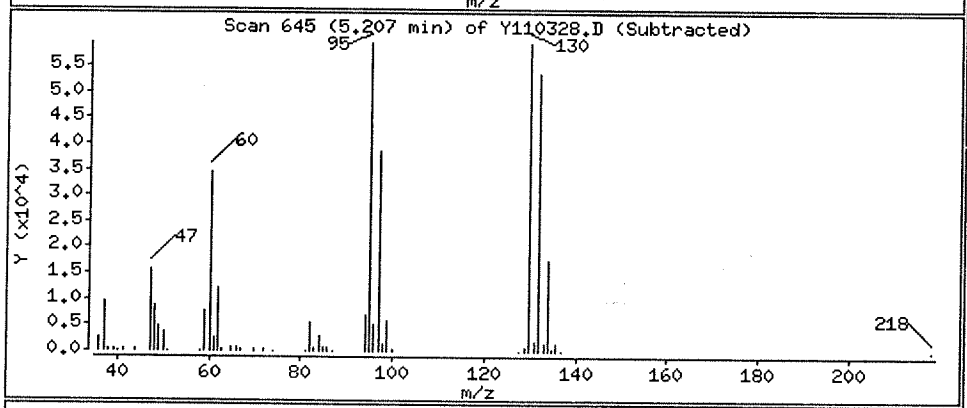
Column diameter: 0.18

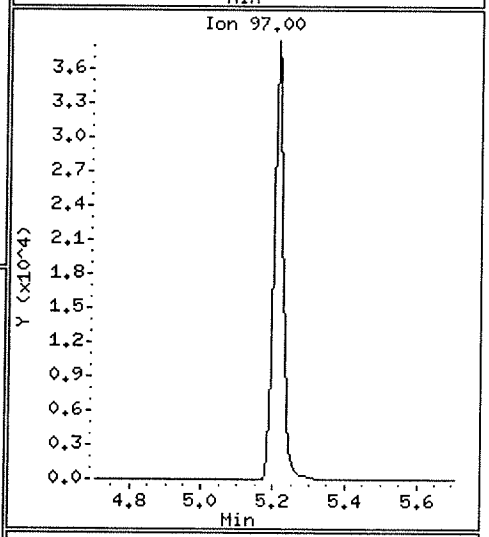
38 Trichloroethene

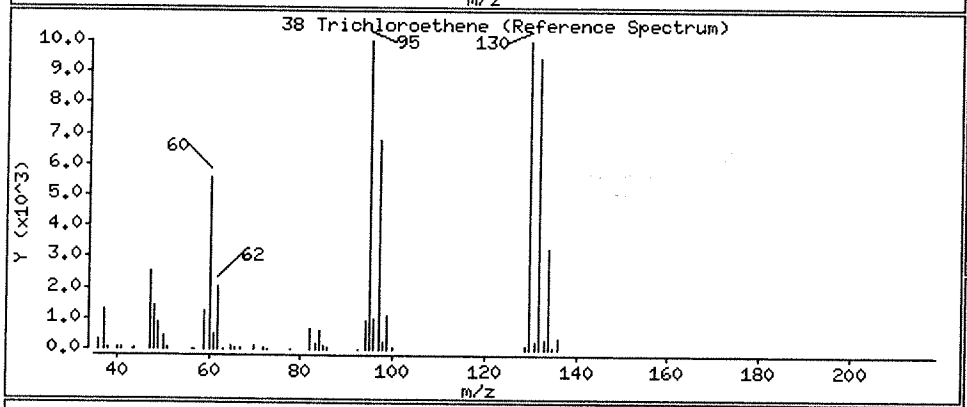
Concentration: 3587.75 ug/l

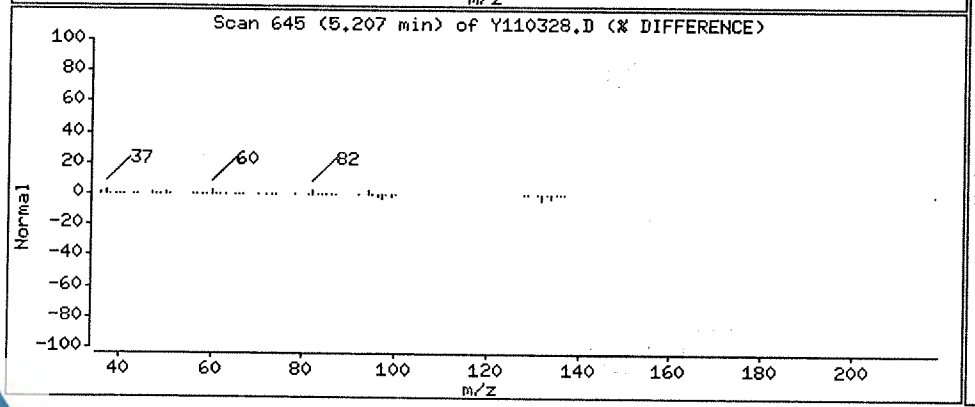


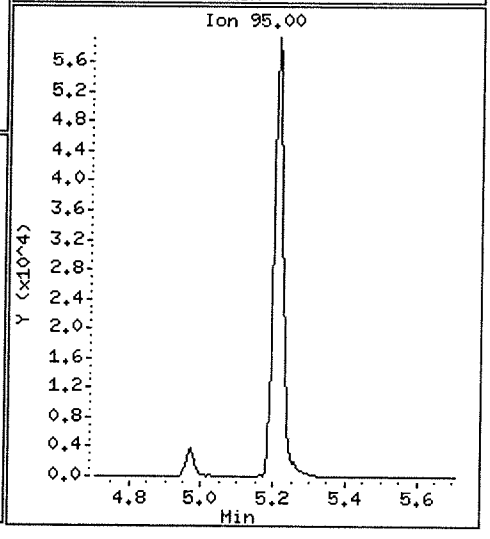












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D
Lab Smp Id: HS20101123-09 Client Smp ID: HS20101123-09
Inj Date : 04-NOV-2020 08:20
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-09;HS20101123-09;;;
Misc Info : HS18090001;WATER;0;50;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 58
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

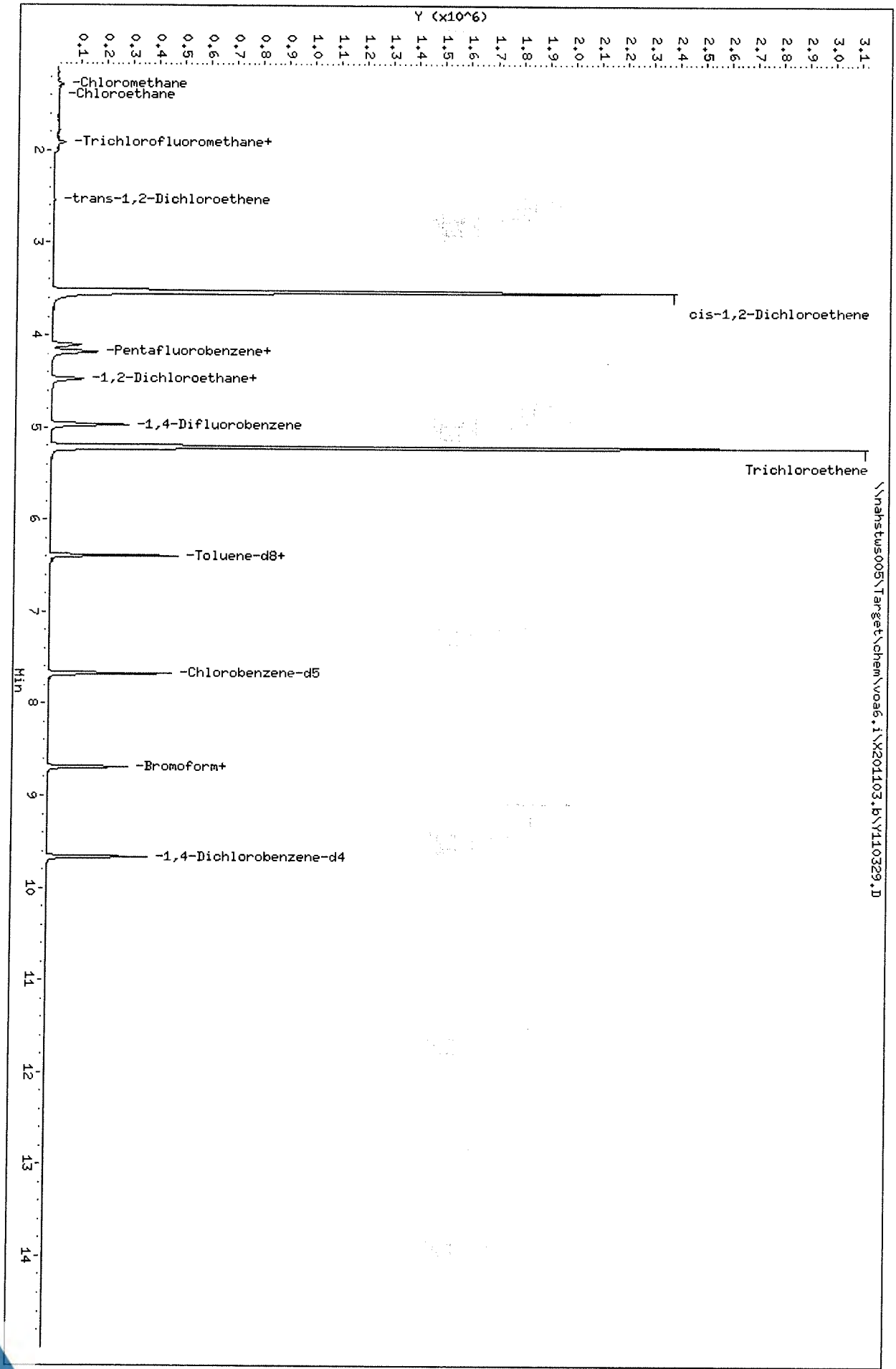
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	125520	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	214670	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	183436	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	71887	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	88722	44.7666	44.76
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	72606	44.7676	44.76
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	72820	43.0787	43.07
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	252232	51.4804	51.48
11 1,1-Dichloroethene	96	1.912	1.919	(0.457)	5404	2.28190	114.09(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	2227	0.96211	48.10(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	1021230	554.788	27739.37(A)
38 Trichloroethene	130	5.207	5.206	(1.048)	796771	556.963	27848.13(A)
5 Vinyl Chloride	62	1.145	1.145	(0.274)	2846	1.02617	51.30(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D
Date : 04-NOV-2020 08:20
Client ID: HS20101123-09
Sample Info: HS20101123-09;HS20101123-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D

Date : 04-NOV-2020 08:20

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

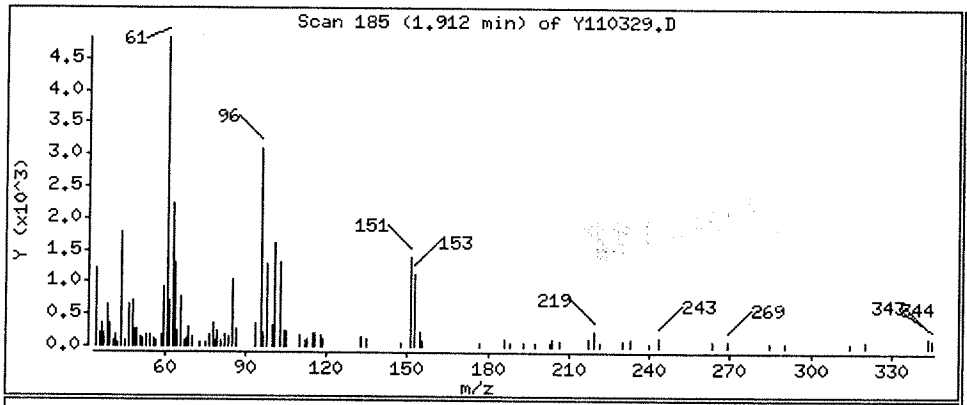
Operator: PC

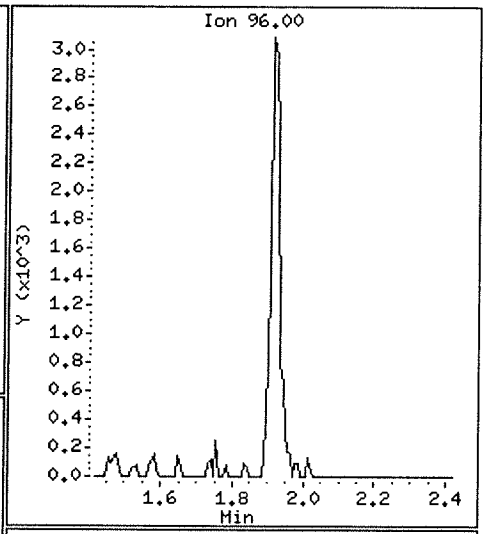
Column phase: DB624

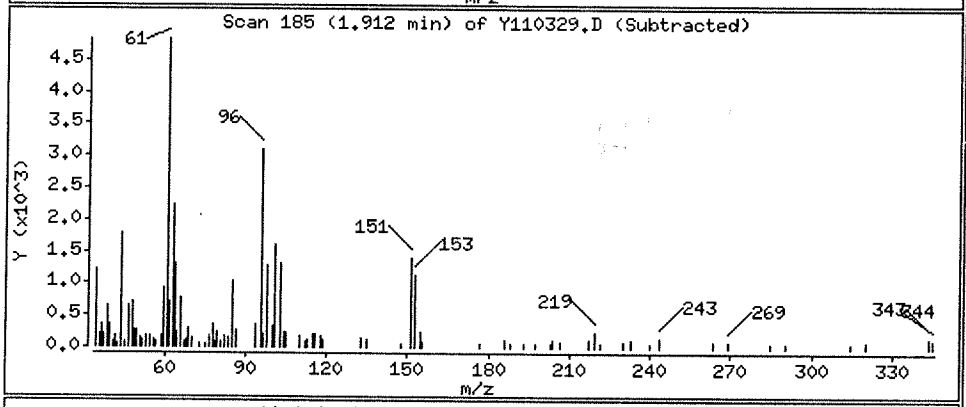
Column diameter: 0.18

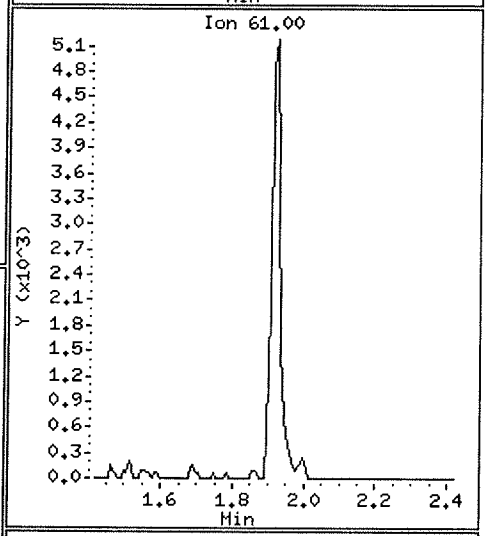
11 1,1-Dichloroethene

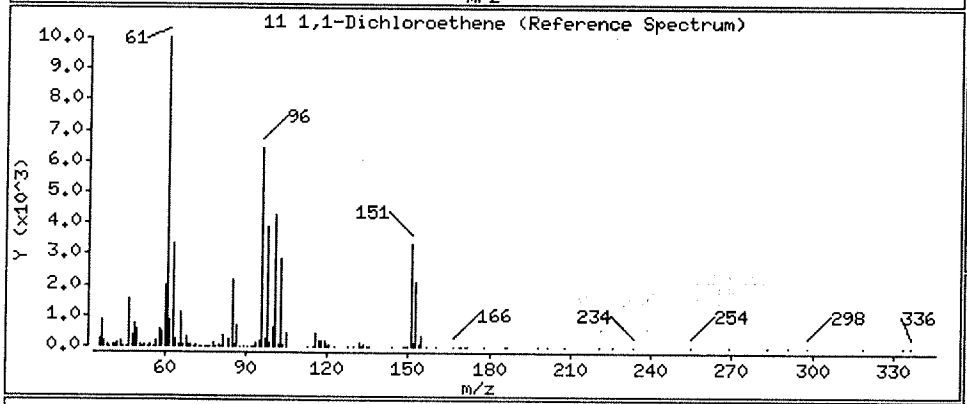
Concentration: 114.09 ug/l

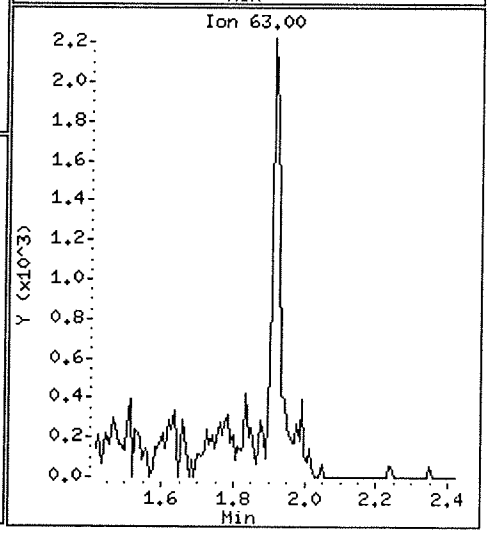


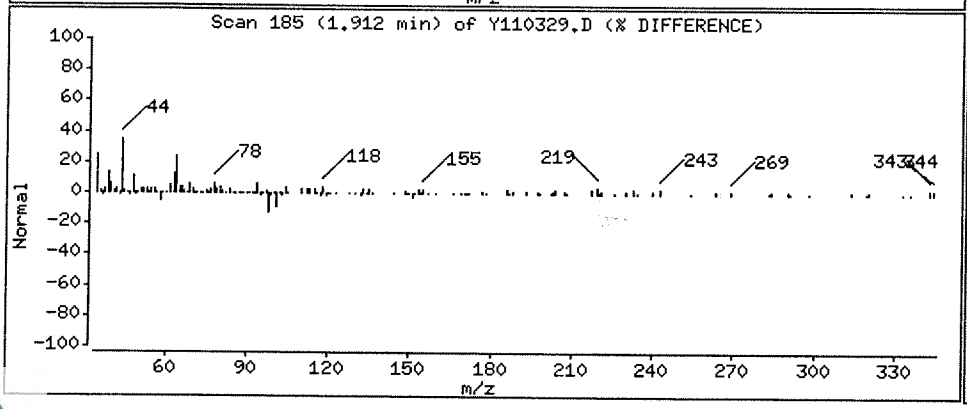












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D

Date : 04-NOV-2020 08:20

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

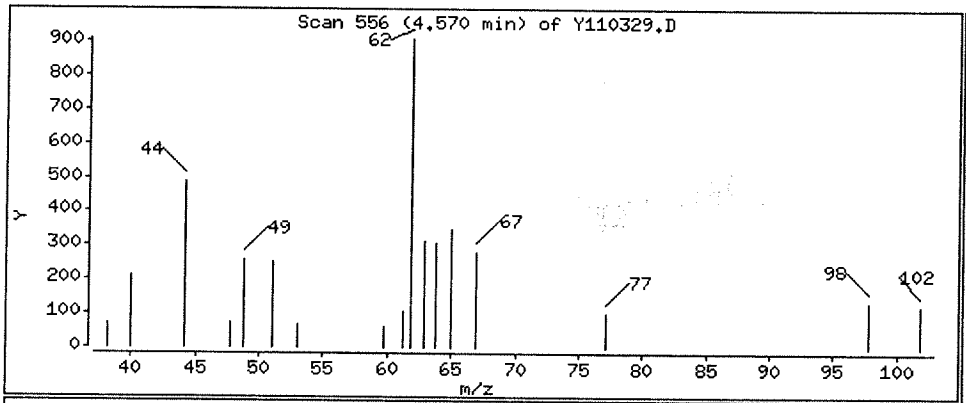
Operator: PC

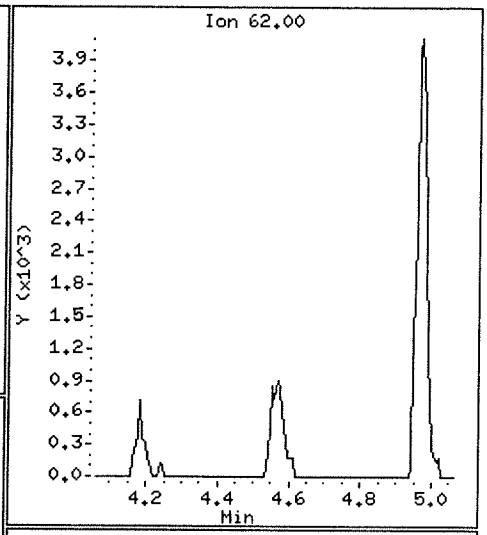
Column phase: DB624

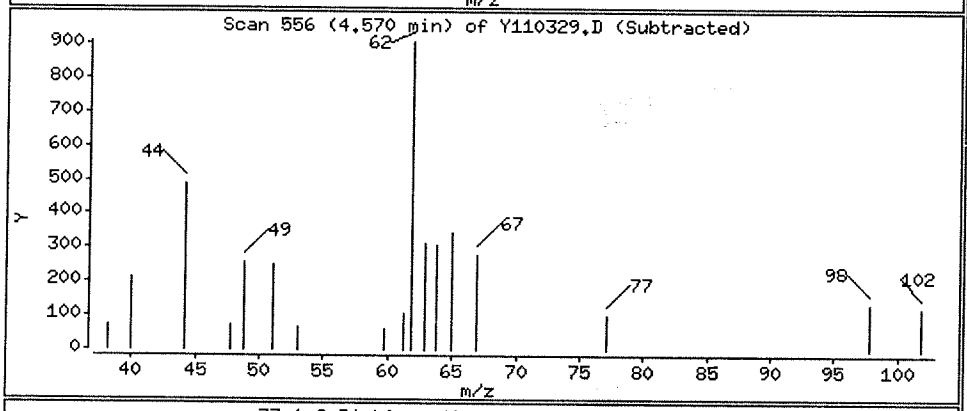
Column diameter: 0.18

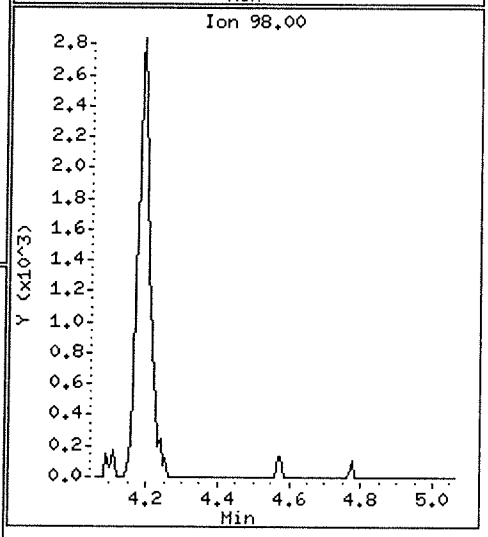
33 1,2-Dichloroethane

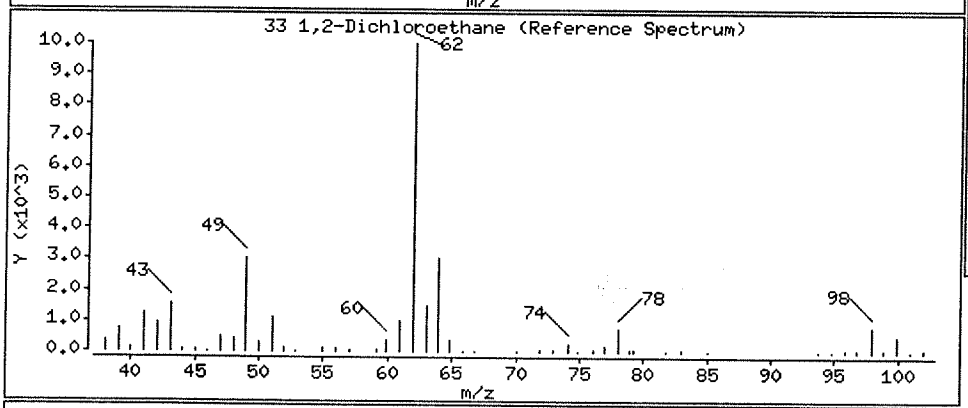
Concentration: 48.10 ug/l

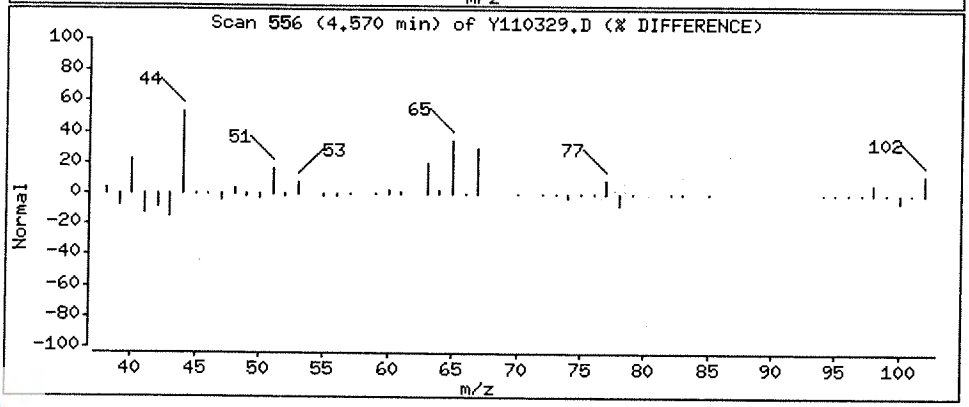












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D

Date : 04-NOV-2020 08:20

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

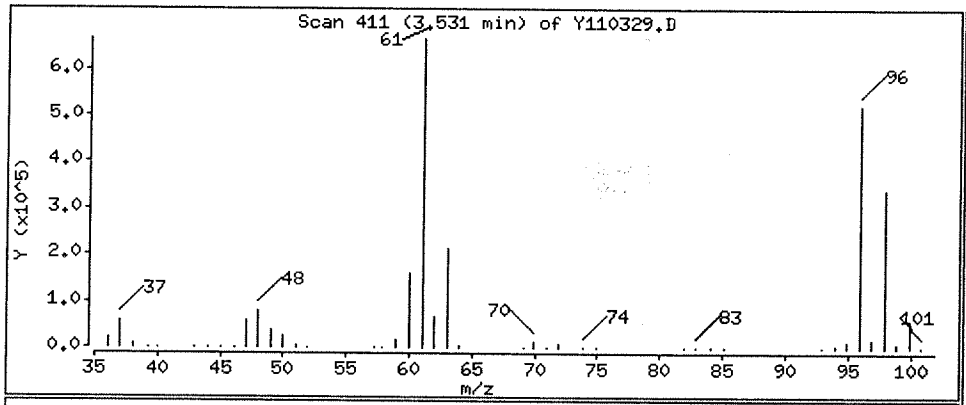
Operator: PC

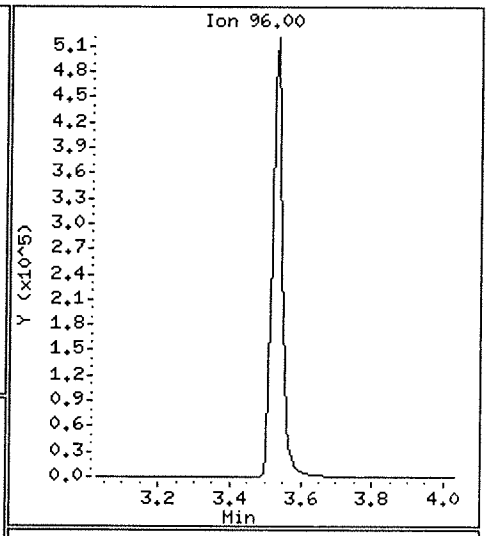
Column phase: DB624

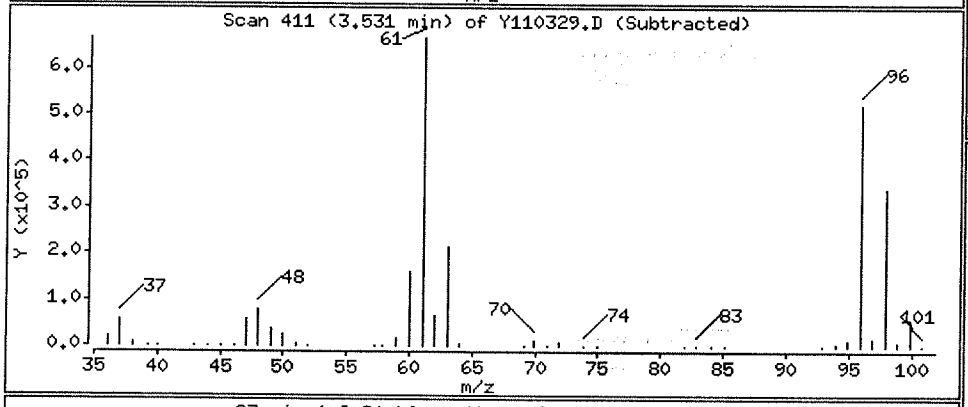
Column diameter: 0.18

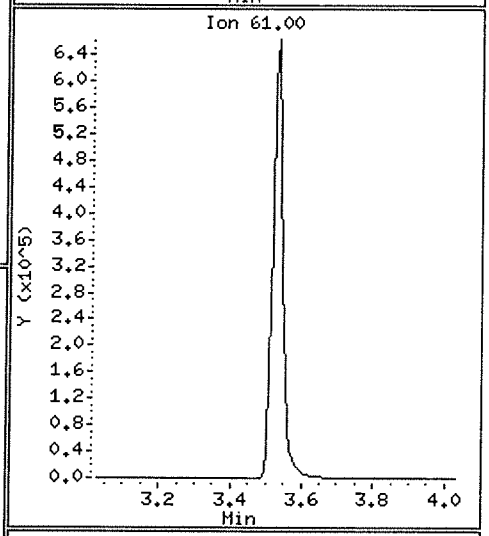
27 cis-1,2-Dichloroethene

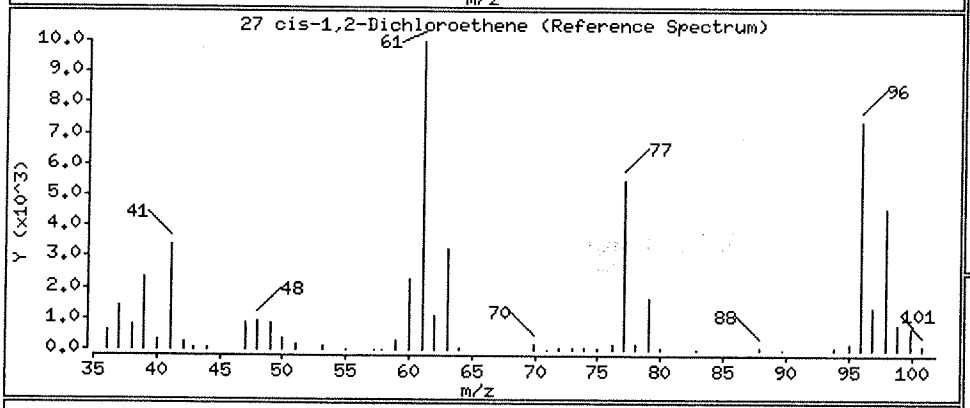
Concentration: 27739.37 ug/l

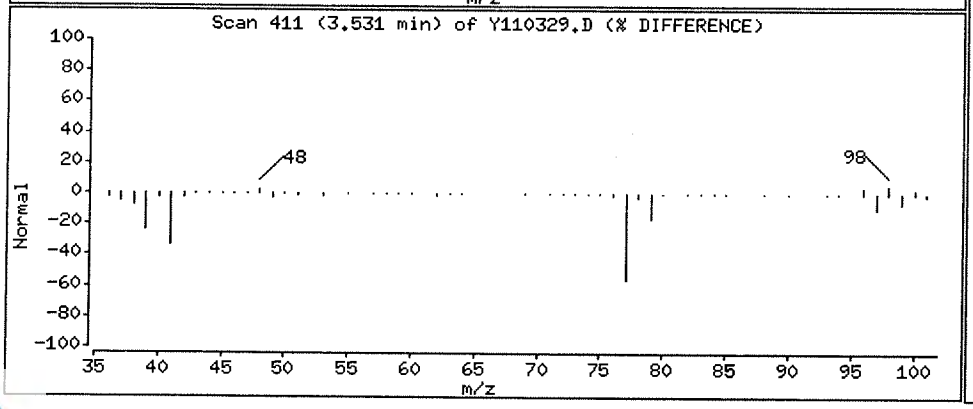


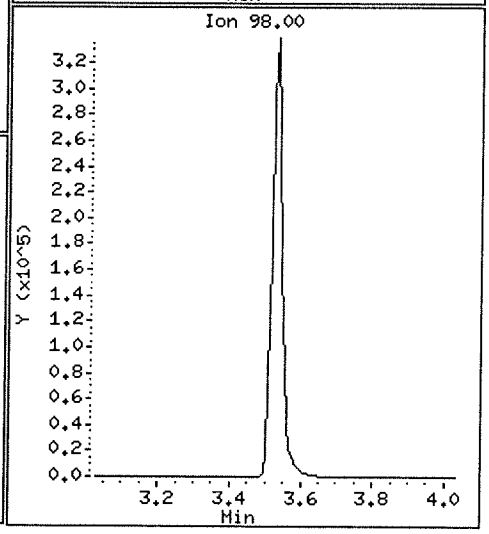












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D

Date : 04-NOV-2020 08:20

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

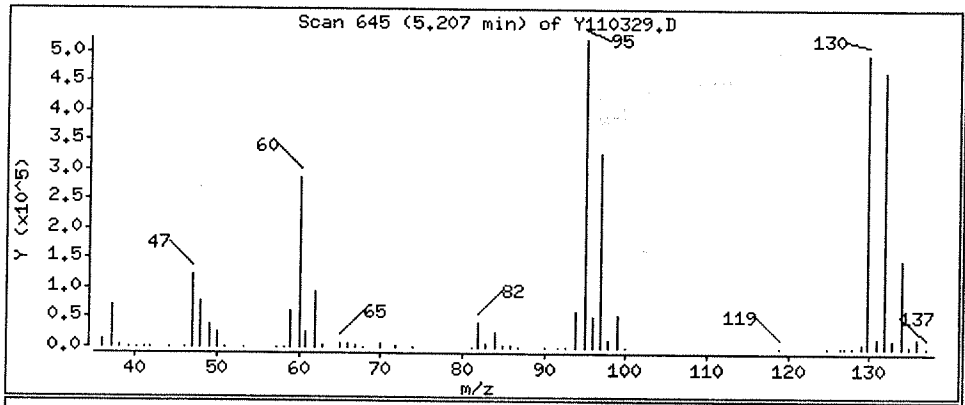
Operator: PC

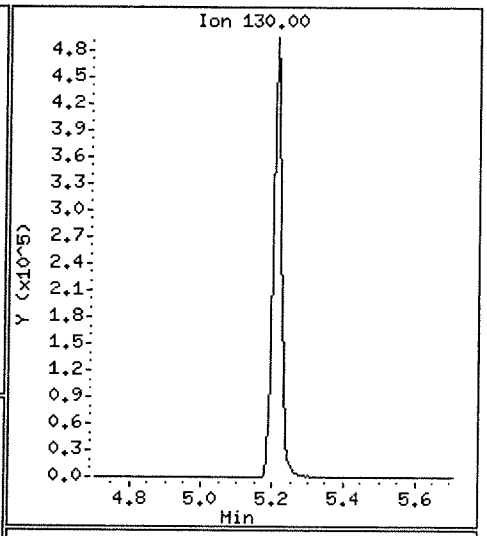
Column phase: DB624

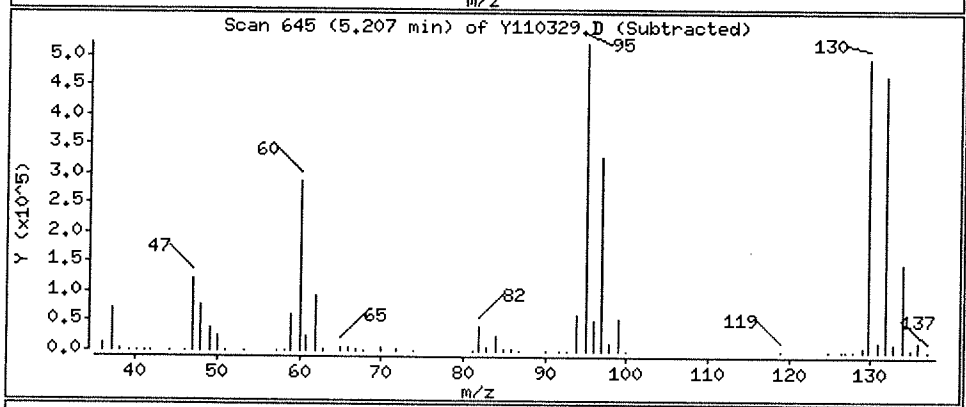
Column diameter: 0.18

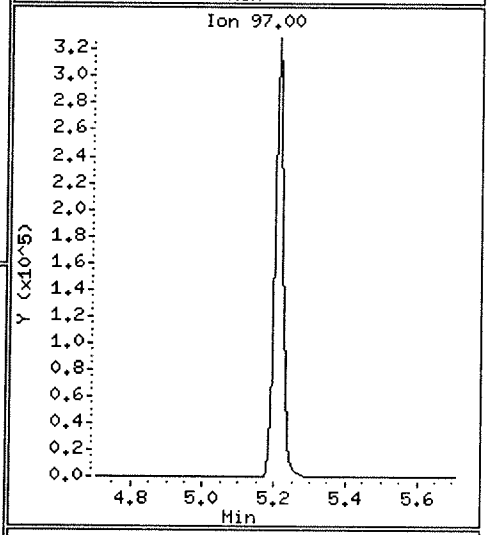
38 Trichloroethene

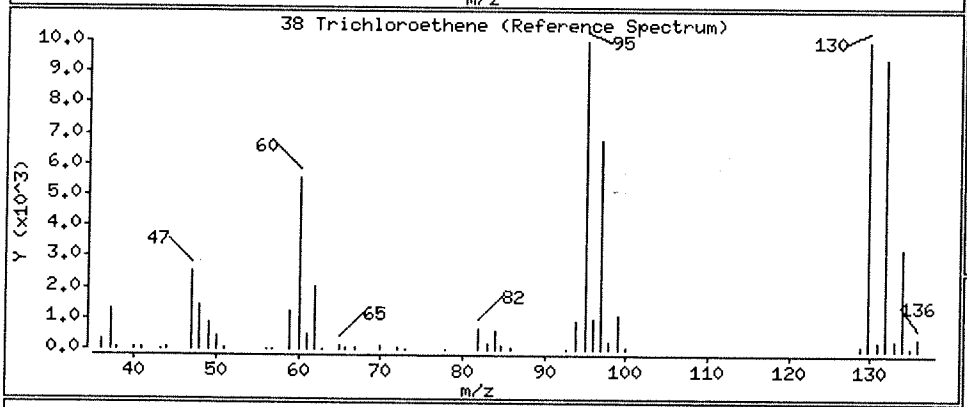
Concentration: 27848.13 ug/l

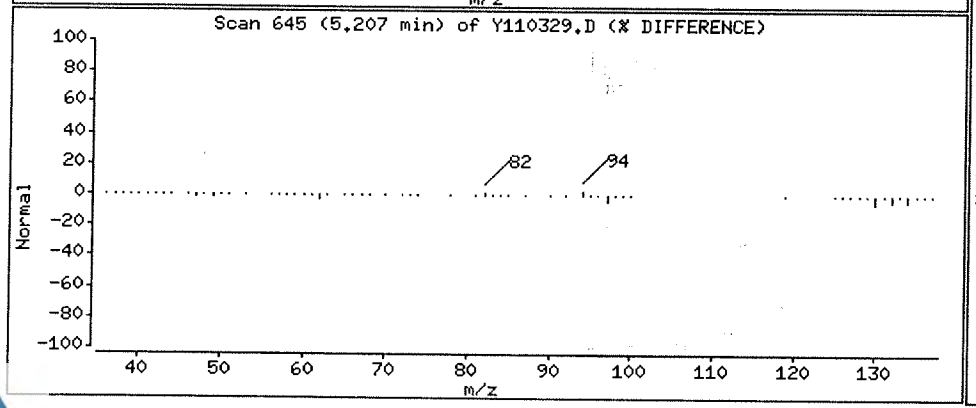


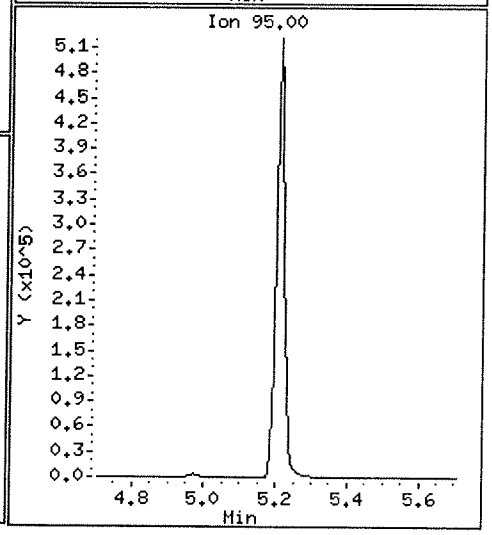












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110329.D

Date : 04-NOV-2020 08:20

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

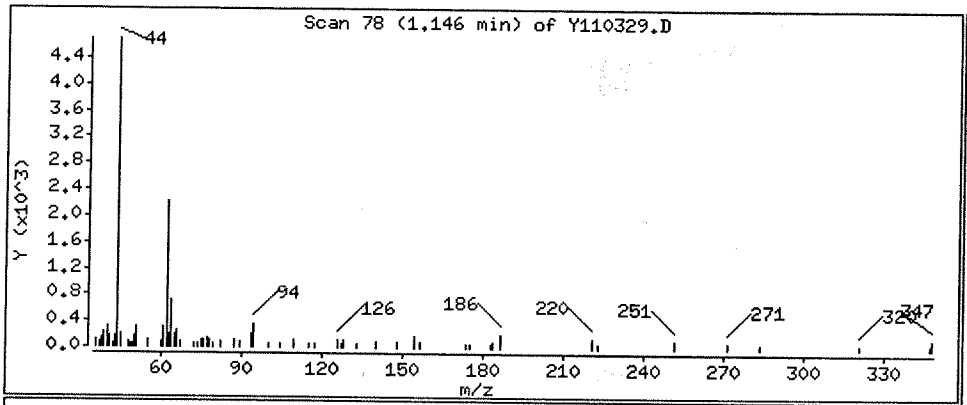
Operator: PC

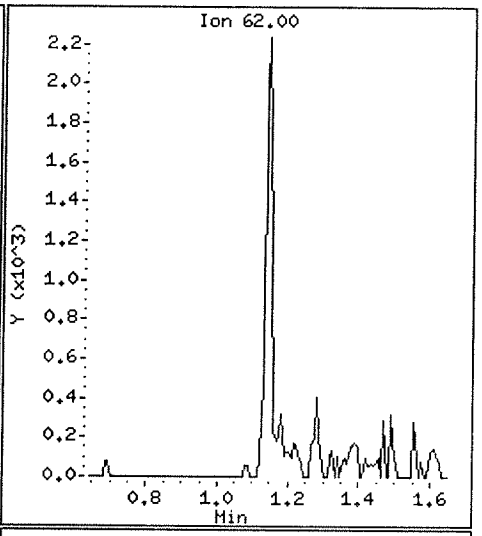
Column phase: DB624

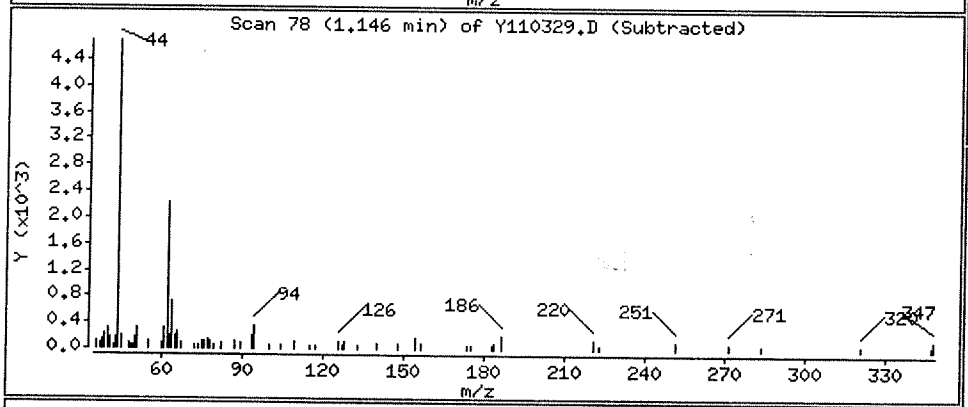
Column diameter: 0.18

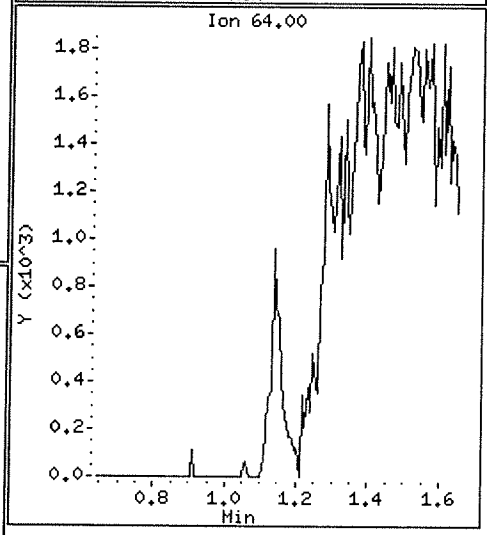
5 Vinyl Chloride

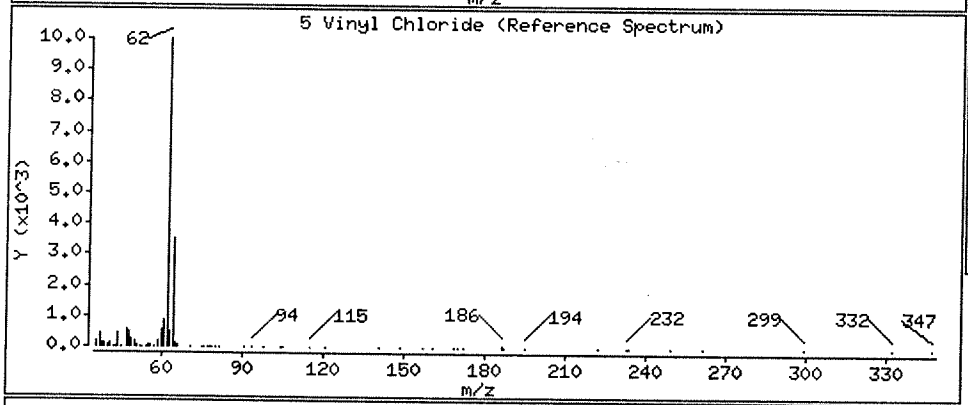
Concentration: 51.30 ug/l

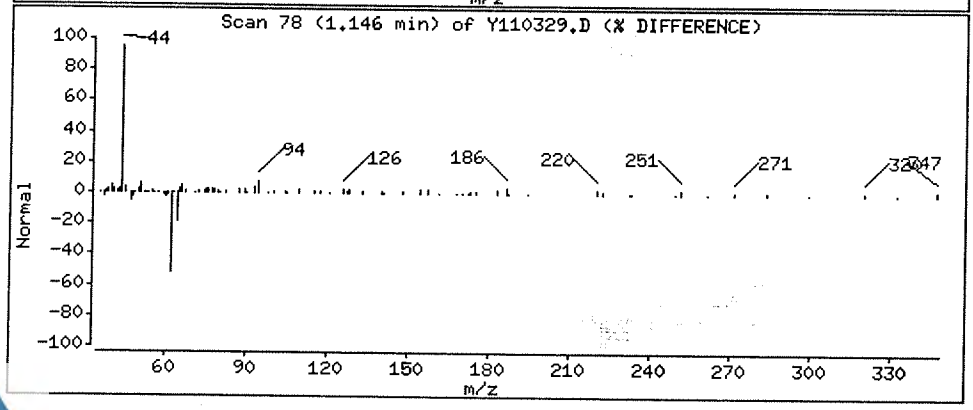












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110330.D Page 1
Report Date: 30-Nov-2020 16:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110330.D
Lab Smp Id: HS20101123-09 Client Smp ID: HS20101123-09
Inj Date : 04-NOV-2020 08:41
Operator : PC Inst ID: voa6.i
Smp Info : HS20101123-09;HS20101123-09;;;
Misc Info : HS18090001;WATER;0;500;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 15:51 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 59
Dil Factor: 500.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14
Processing Host: NAHSTW7056

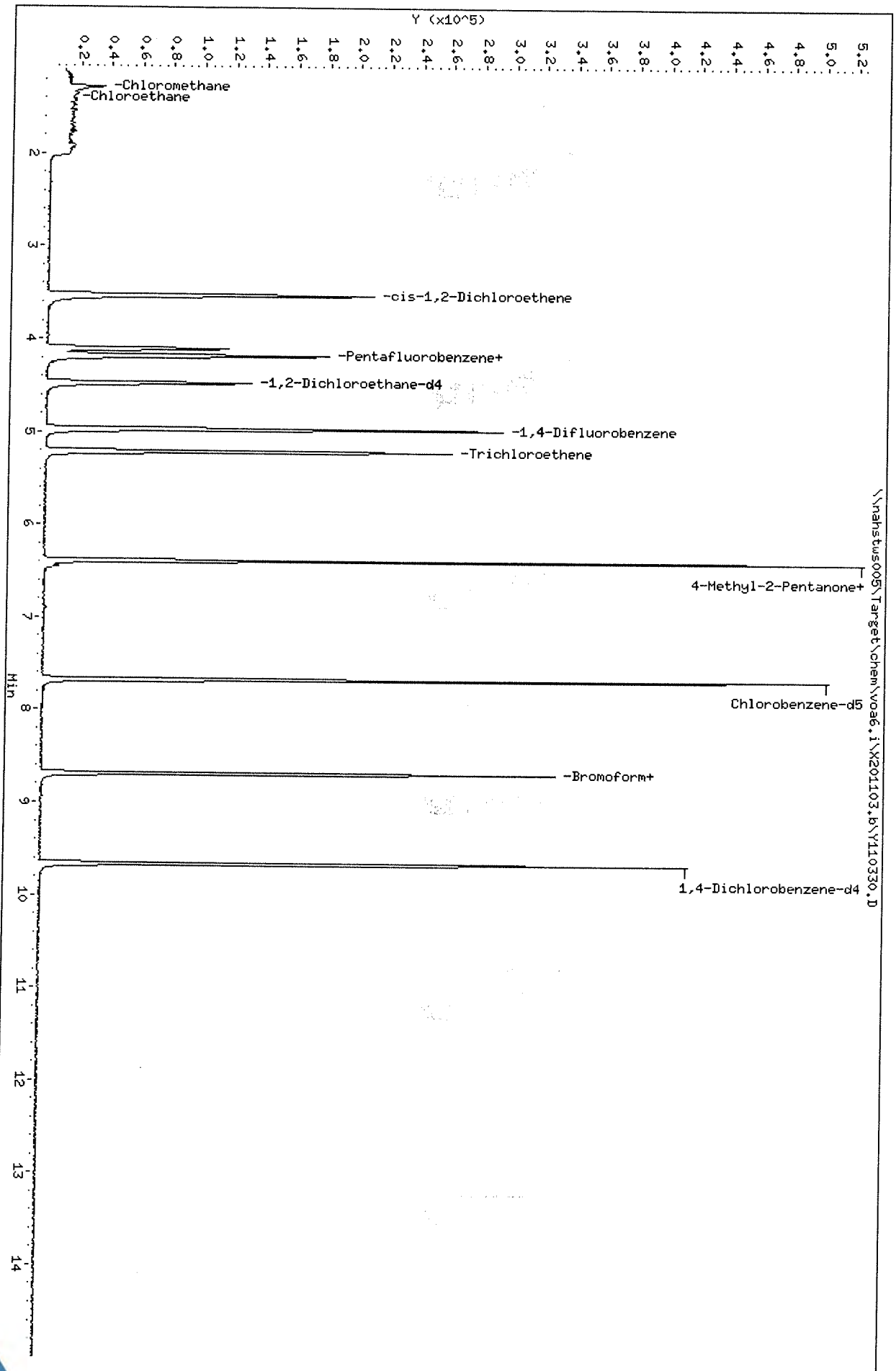
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	500.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	128272	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	217446	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	197669	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	81342	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	90345	44.6129	44.61
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	79357	45.3840	45.38
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	74459	43.1033	43.10
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	269077	50.9641	50.96
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	98122	52.1616	26080.78
38 Trichloroethene	130	5.207	5.206	(1.048)	74366	51.3200	25660.01

Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110330.D
Date : 04-NOV-2020 08:41
Client ID: HS20101123-09
Sample Info: HS20101123-09;HS20101123-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110330.D

Date : 04-NOV-2020 08:41

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

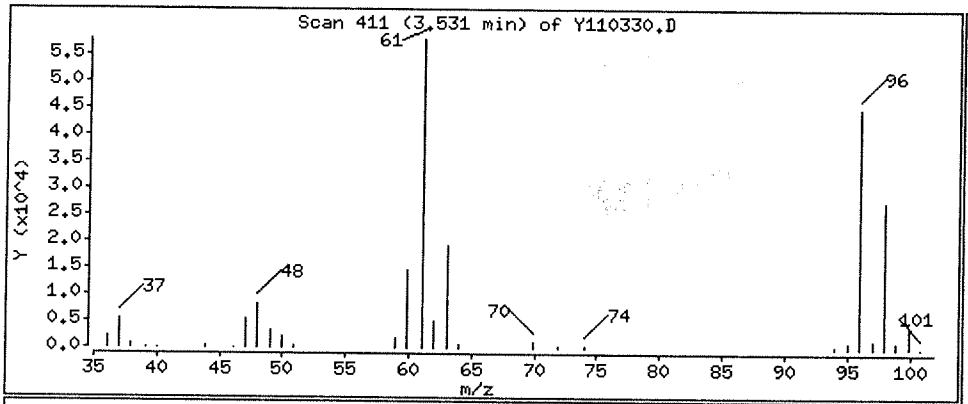
Operator: PC

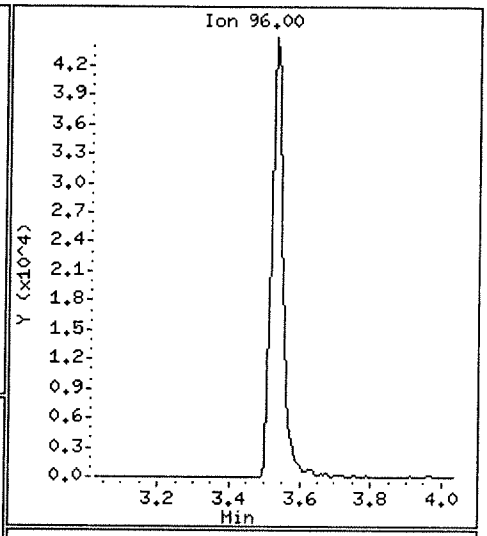
Column phase: DB624

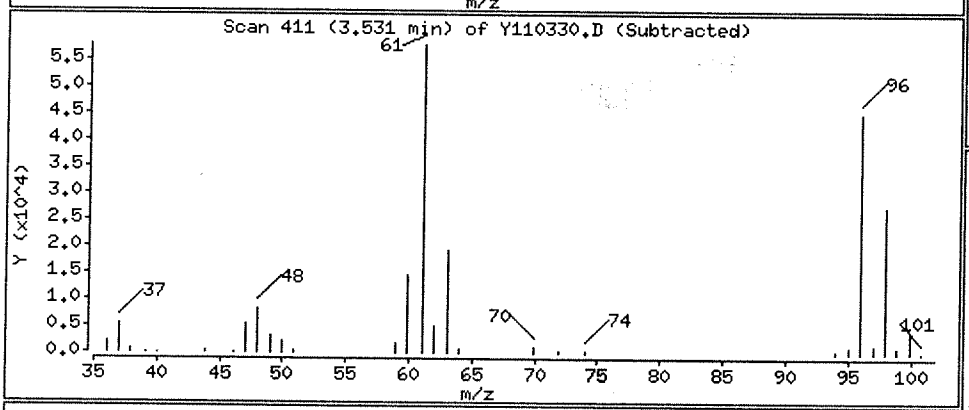
Column diameter: 0.18

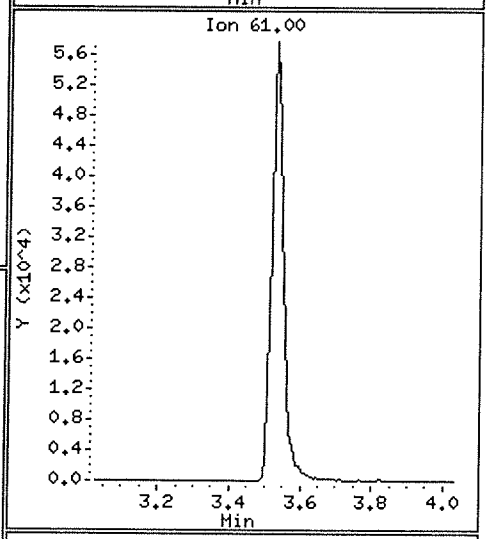
27 cis-1,2-Dichloroethene

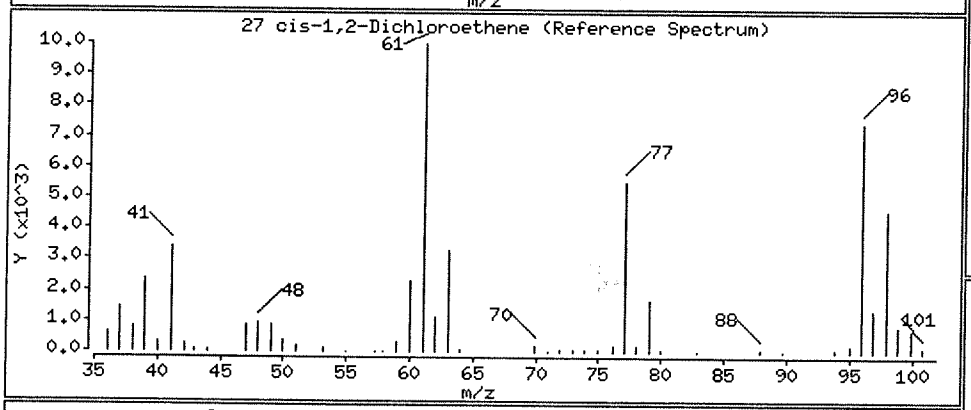
Concentration: 26080.78 ug/l

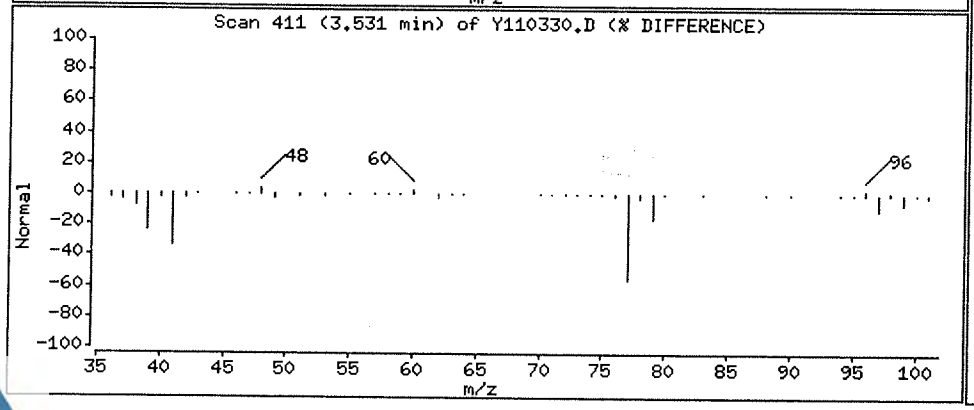


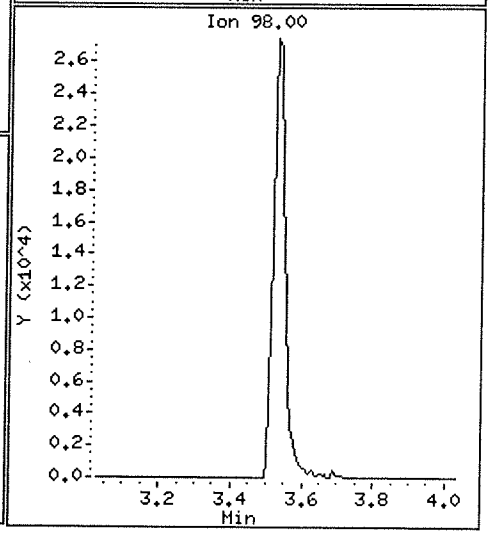












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110330.D

Date : 04-NOV-2020 08:41

Client ID: HS20101123-09

Instrument: voa6.i

Sample Info: HS20101123-09;HS20101123-09;;;

Purge Volume: 5.0

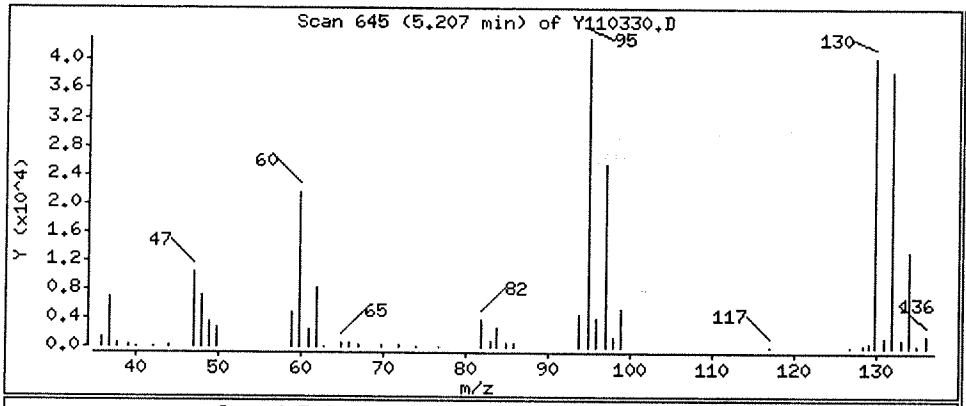
Operator: PC

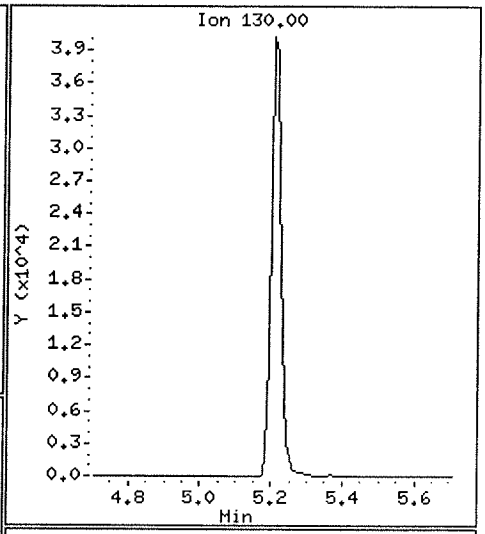
Column phase: DB624

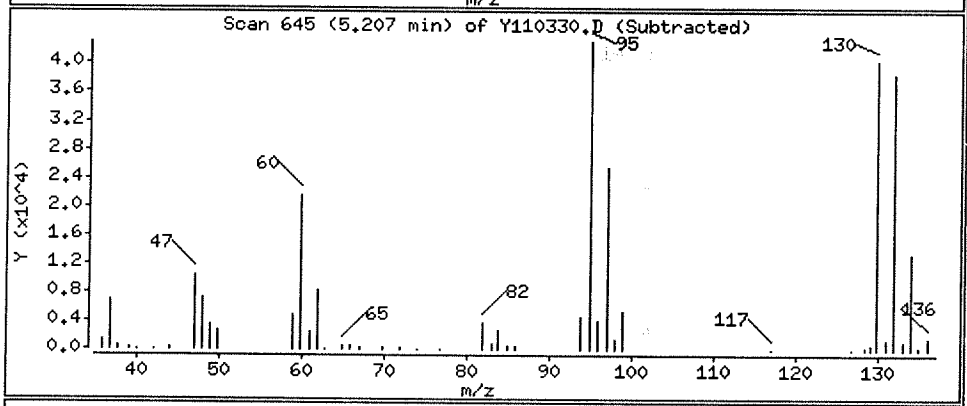
Column diameter: 0.18

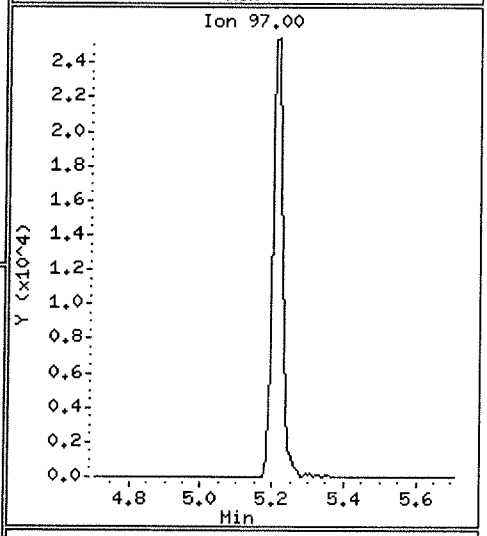
38 Trichloroethene

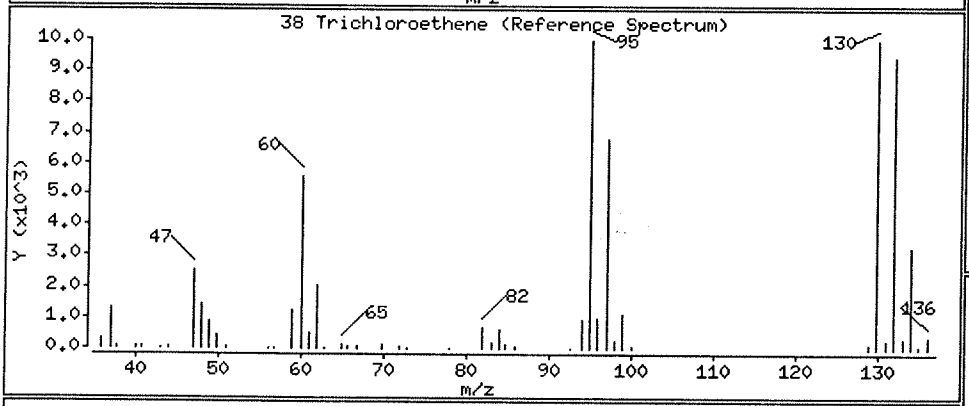
Concentration: 25660.01 ug/l

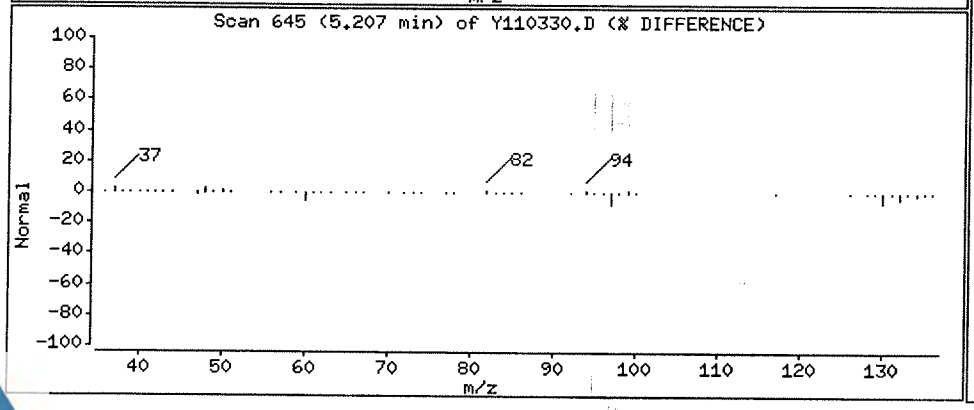


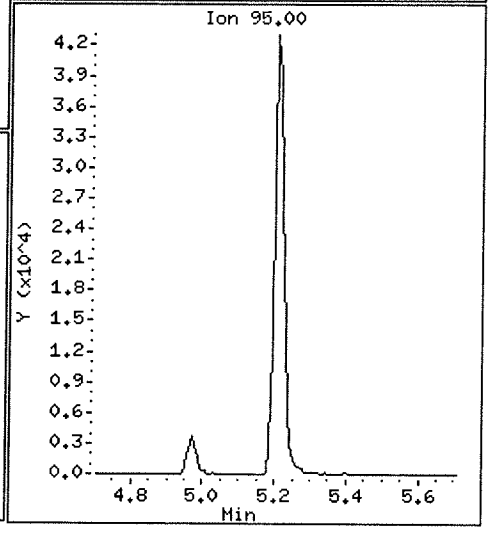












Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110331.D Page 1
Report Date: 30-Nov-2020 16:07

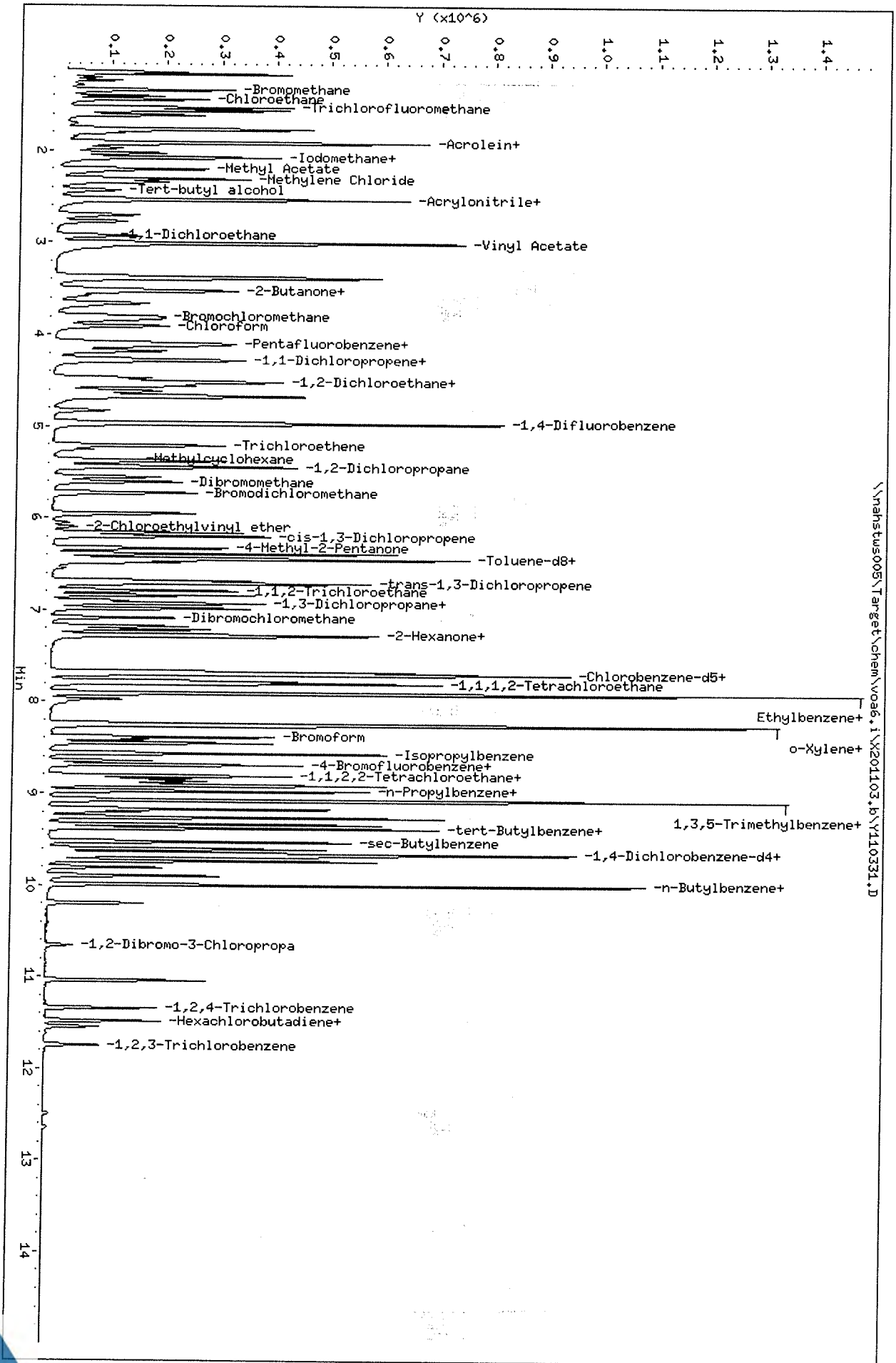
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X201103.b\Y110331.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 04-NOV-2020 09:02
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X201103.b\8260W.m
Meth Date : 30-Nov-2020 16:06 voa6.i Quant Type: ISTD
Cal Date : 03-NOV-2020 15:30 Cal File: X110311.D
Als bottle: 60 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SLCBI-HOU.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	135414	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	266659	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	251257	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	118163	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	116683	50.0000	54.14
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	108996	50.0000	48.90
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	96356	50.0000	52.83
$	48 Toluene-d8	98	6.388	6.388	(0.833)	324315	50.0000	48.32
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	74299	50.0000	47.94
	11 1,1-Dichloroethene	96	1.919	1.919	(0.459)	124920	50.0000	48.89
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	140897	50.0000	49.00
	27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	95109	50.0000	47.89
	17 Methylene Chloride	84	2.305	2.305	(0.551)	83311	50.0000	44.80
	38 Trichloroethene	130	5.206	5.206	(1.048)	84955	50.0000	47.80
	5 Vinyl Chloride	62	1.145	1.145	(0.274)	149710	50.0000	50.03



Data File: \\nahstws005\Target\chem\voa6.i\X201103.b\Y110331.D
Date : 04-NOV-2020 09:02
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

HS20101123 RSK175 Raw Data

ALS WO# HS20101123

FID04 -Logbook

Batch: 26730 **Analyst:** Nosa Izekor

Date: 01-24-2017 **Reviewer:**

Method: RSK 175 ICAL **Laboratory:** Houston

Comments: Target Sequence 170124

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	ICAL1	CALIB_1	01-24-2017 09:06 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	ICAL2	CALIB_2	01-24-2017 09:30 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	ICAL3	CALIB_3	01-24-2017 09:59 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	ICAL4	CALIB_4	01-24-2017 10:15 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	ICAL5	CALIB_5	01-24-2017 10:39 am	1.00	0.00 mL	0.00 mL	005.D	Liquid	Y	NA
6	ICAL6	CALIB_6	01-24-2017 10:57 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	ICAL7	CALIB_7	01-24-2017 11:13 am	1.00	0.00 mL	0.00 mL	007.D	Liquid	Y	NA
8	ICV	METHSPIKI	01-24-2017 12:05 pm	1.00	0.00 mL	0.00 mL	008.D	Liquid	Y	NA
9	LCS-170124	LCS	01-24-2017 12:24 pm	1.00	0.00 mL	0.00 mL	009.D	Liquid	Y	NA
10	LCSD-170124	LCSD	01-24-2017 12:40 pm	1.00	0.00 mL	0.00 mL	010.D	Liquid	Y	NA
11	MBLK-170124	MBLK	01-24-2017 12:57 pm	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS17010778-01	SAMP	01-24-2017 01:14 pm	1.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS17010779-01	SAMP	01-24-2017 01:31 pm	1.00	0.00 mL	0.00 mL	013.D	Liquid	Y	NA
14	HS17010779-01DUP	SAMP	01-24-2017 01:47 pm	1.00	0.00 mL	0.00 mL	014.D	Liquid	Y	NA
15	CCV	CCV	01-24-2017 02:01 pm	1.00	0.00 mL	0.00 mL	015.D	Liquid	Y	NA

Chemical	Value
ICAL STD ID	30010700217
ICV STD ID	30010700610

FORM 3
WATER GASES METHOD SPIKE RECOVERY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Matrix Spike - ENG SC Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Ethene	16.800	19.090	114	75-125
Methane	9.647	9.597	99	75-125
Ethane	18.043	19.657	109	75-125
Propane	26.463	27.238	103	75-125
N-Butane	34.955	36.010	103	75-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

_____

FORM III GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

LAB FILE ID: RF10: 001 RF25: 002 RF50: 003
RF100: 004 RF250: 005 RF500: 006

COMPOUND	RF10	RF25	RF50	RF100	RF250	RF500
Ethene	535.608	567.359	564.985	516.024	665.282	425.678
Methane	968.912	978.238	1019.699	880.798	960.713	930.704
Ethane	602.493	670.177	658.908	597.201	808.513	817.630
Propane	500	1279	2602	4785	18294	38286
N-Butane	438	936	2034	3864	18446	42817

FORM VI GASES

FORM 6
GASES INITIAL CALIBRATION DATA

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS2010112

Instrument ID: FID-4 Calibration Date(s): 01/24/17 01/24/17

Column: RTX-PLOT ID: 0.53 (mm) Calibration Time(s): 0906 1113

RF1000: 007

COMPOUND	RF1000	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MA
Ethene	828.858	AVRG		586.256273		21.932	
Methane	1081.580	AVRG		974.377787		6.550	
Ethane	999.335	AVRG		736.322546		19.885	
Propane	96509	2ORDR	0.97987006	1.529e-003	-4.58e-009	0.9991365	0
N-Butane	114164	2ORDR	2.46870151	1.834e-003	-5.54e-009	0.9980766	0

FORM VI GASES

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Lab Smp Id: ICAL1 Client Smp ID: ICAL1
Inj Date : 24-JAN-2017 09:06
Operator : JA Inst ID: FID-4.i
Smp Info : ICAL1;ICAL1;;;
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:06 Cal File: 001.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	374	0.38600	0.383(a)
2 Ethene	1.553	1.556	-0.003	361	0.67400	0.615(a)
3 Ethane	1.716	1.723	-0.007	435	0.72200	0.590(a)
4 Propane	4.073	4.113	-0.040	500	1.05900	1.743
5 N-Butane	7.640	7.690	-0.050	438	1.39800	3.271

QC Flag Legend

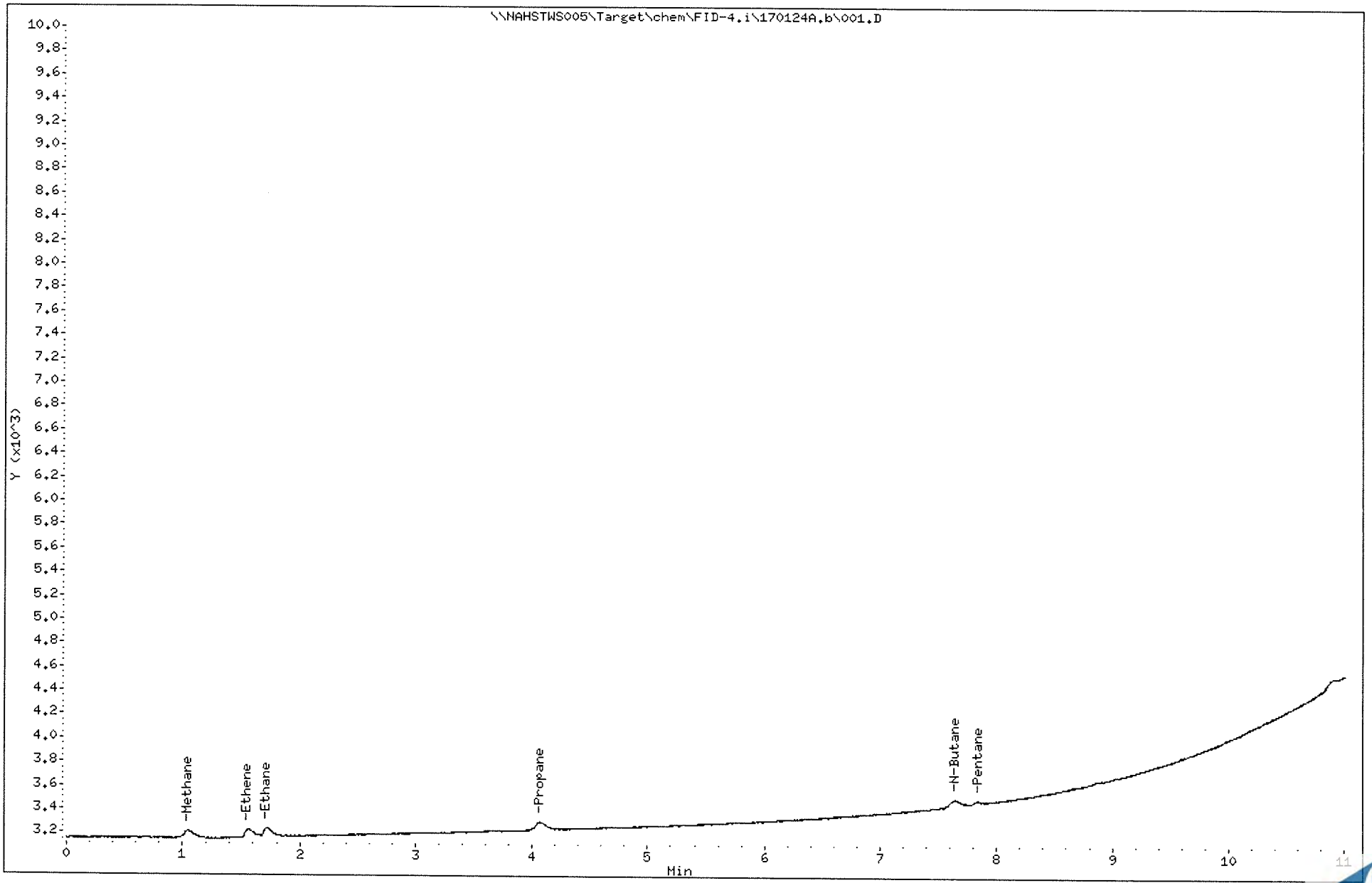
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\001.D
Date : 24-JAN-2017 09:06
Client ID: ICAL1
Sample Info: ICAL1;ICAL1;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: JA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Lab Smp Id: ICAL2 Client Smp ID: ICAL2
Inj Date : 24-JAN-2017 09:30
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL2;ICAL2;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:59 Cal File: 003.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

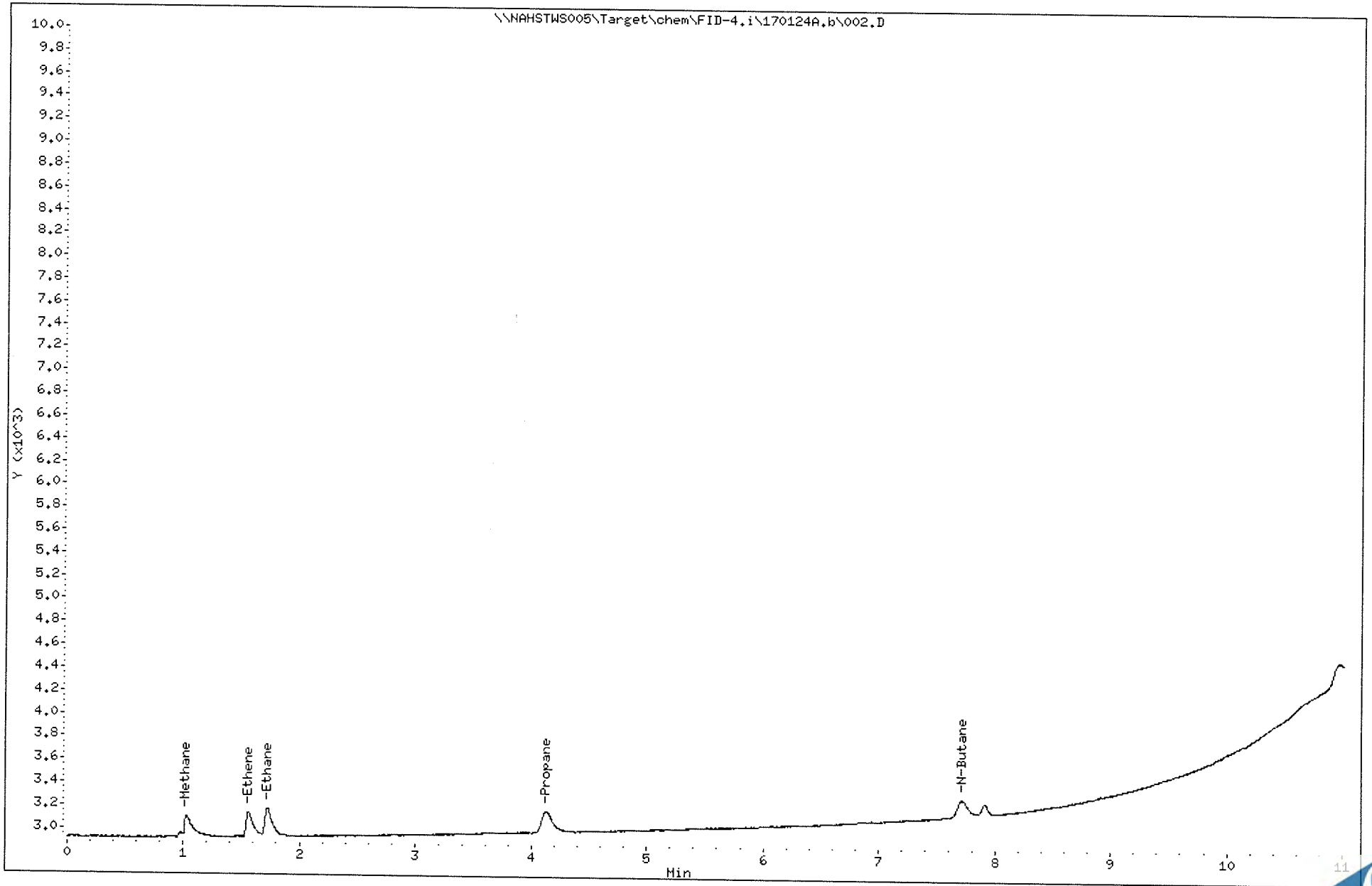
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	944	0.96500	0.968
2 Ethene	1.560	1.556	0.004	956	1.68500	1.630
3 Ethane	1.723	1.723	0.000	1209	1.80400	1.641
4 Propane	4.123	4.113	0.010	1279	2.64600	2.927
5 N-Butane	7.716	7.690	0.026	936	3.49600	4.180

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\002.D
Date : 24-JAN-2017 09:30
Client ID: ICAL2
Sample Info: ICAL2;ICAL2;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Lab Smp Id: ICAL3 Client Smp ID: ICAL3
Inj Date : 24-JAN-2017 09:59
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL3;ICAL3;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

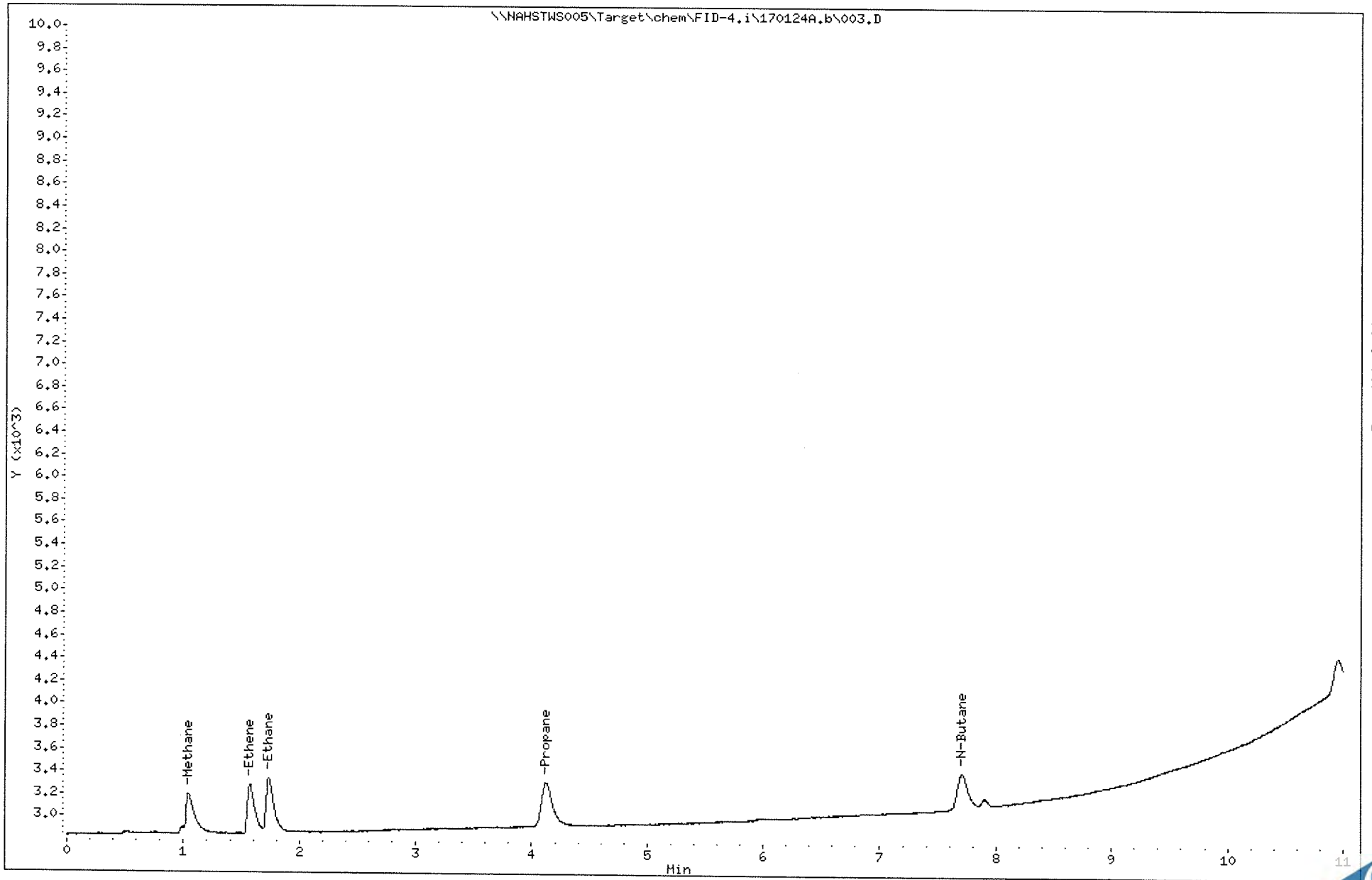
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	1967	1.92900	2.018
2 Ethene	1.570	1.556	0.014	1904	3.37000	3.247
3 Ethane	1.736	1.723	0.013	2378	3.60900	3.229
4 Propane	4.123	4.113	0.010	2602	5.29300	4.926
5 N-Butane	7.703	7.690	0.013	2034	6.99100	6.176

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\003.D
Date : 24-JAN-2017 09:59
Client ID: ICAL3
Sample Info: ICAL3;ICAL3;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Lab Smp Id: ICAL4 Client Smp ID: ICAL4
Inj Date : 24-JAN-2017 10:15
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL4;ICAL4;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 09:30 Cal File: 002.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	1.033	1.030	0.003	3399	3.85900	3.488
2 Ethene	1.563	1.556	0.007	3478	6.74000	5.932
3 Ethane	1.726	1.723	0.003	4310	7.21700	5.853
4 Propane	4.120	4.113	0.007	4785	10.5850	8.190
5 N-Butane	7.703	7.690	0.013	3864	13.9820	9.473(M)

QC Flag Legend

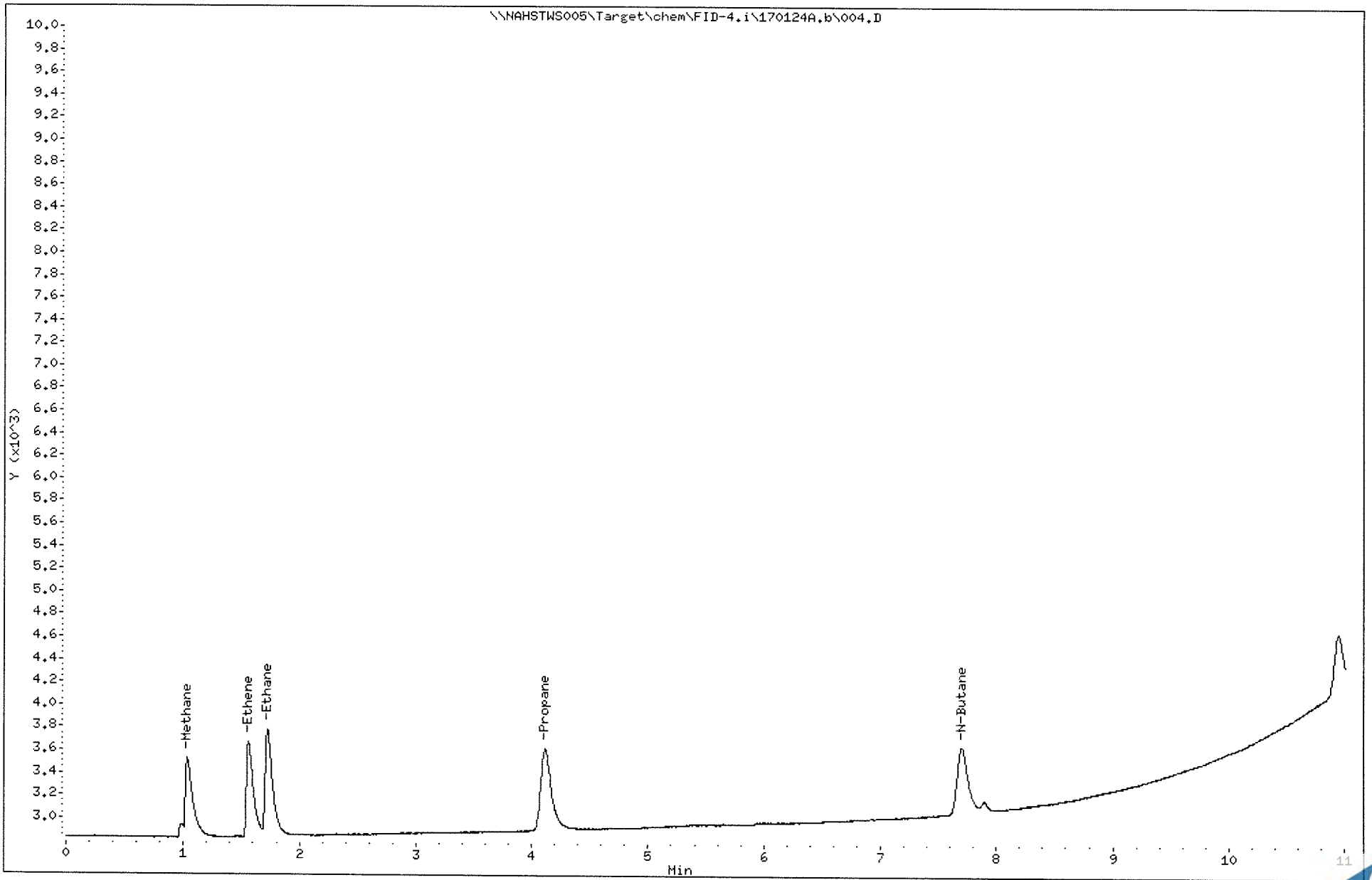
M - Compound response manually integrated.

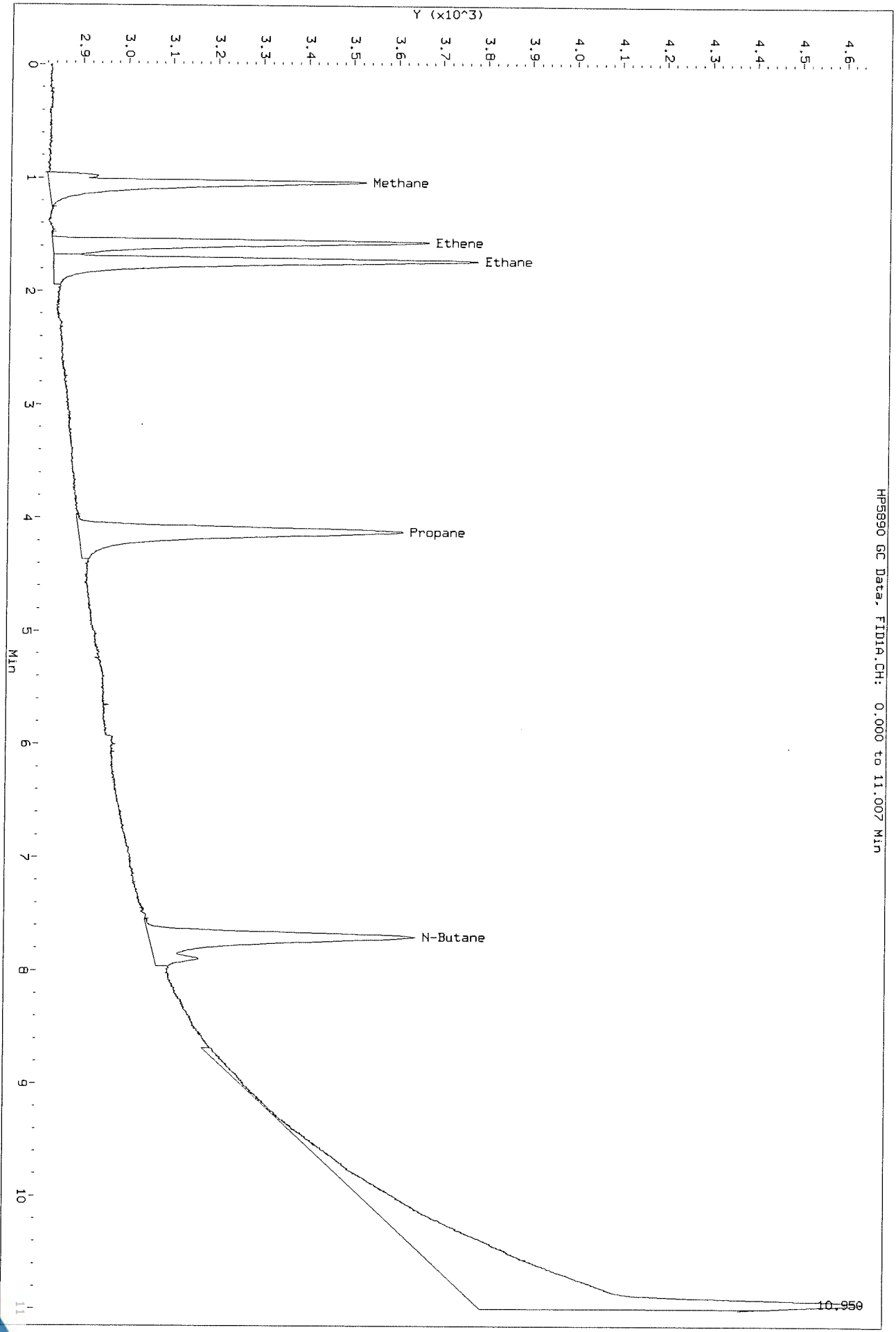
Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\004.D
Date : 24-JAN-2017 10:15
Client ID: ICAL4
Sample Info: ICAL4;ICAL4;;;

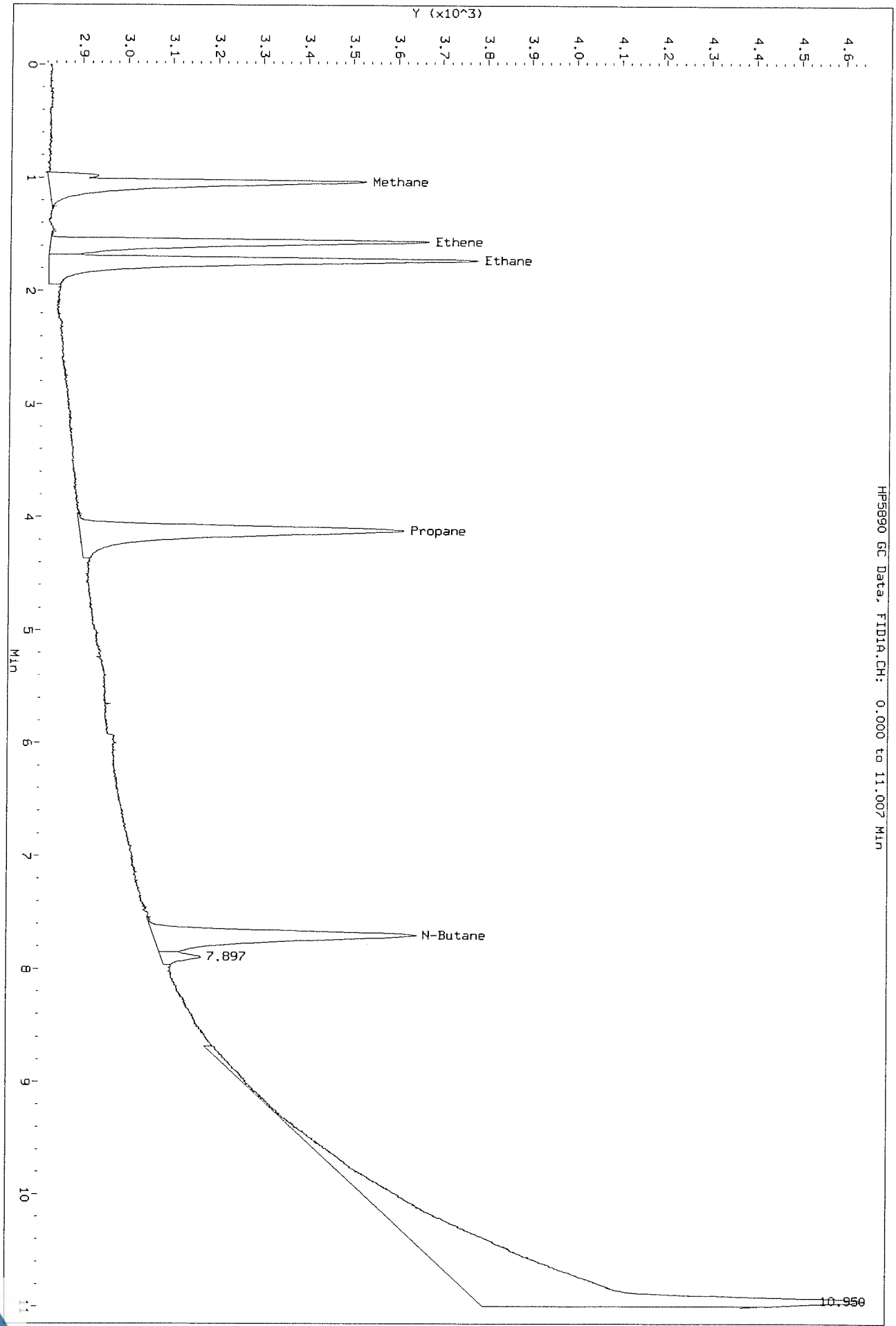
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\BEFORE\004.D
Injection Date: 24-JAN-2017 10:15
Instrument: FID-4.i
Client Sample ID: ICAL4
Y (x10^3)
Methane
Ethene
Ethane
Propane
N-Butane
Min
HP5890 GC Data, FID1A.CH: 0.000 to 11.007 Min
10.950


Data File: \\nahstws005\Target\chem\FID-4.i\2017-ICAL\170124.b\004.D
Injection Date: 24-JAN-2017 10:15
Instrument: FID-4.i
Client Sample ID: ICAL4
Y (x10^3)
2.9
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.1
4.2
4.3
4.4
4.5
4.6
0
1
2
3
4
5
6
7
8
9
10
11
Min
Methane
Ethene
Ethane
Propane
N-Butane
7.897
10.950
HP5890 GC Data, FID1A.CH: 0.000 to 11.007 Min

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Lab Smp Id: ICAL5 Client Smp ID: ICAL5
Inj Date : 24-JAN-2017 10:39
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL5;ICAL5;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.043	1.030	0.013	9268	9.64700	9.511
2 Ethene	1.570	1.556	0.014	11210	16.8500	19.121
3 Ethane	1.733	1.723	0.010	14588	18.0430	19.811
4 Propane	4.120	4.113	0.007	18294	26.4630	27.415
5 N-Butane	7.700	7.690	0.010	18446	34.9550	34.419(M)

QC Flag Legend

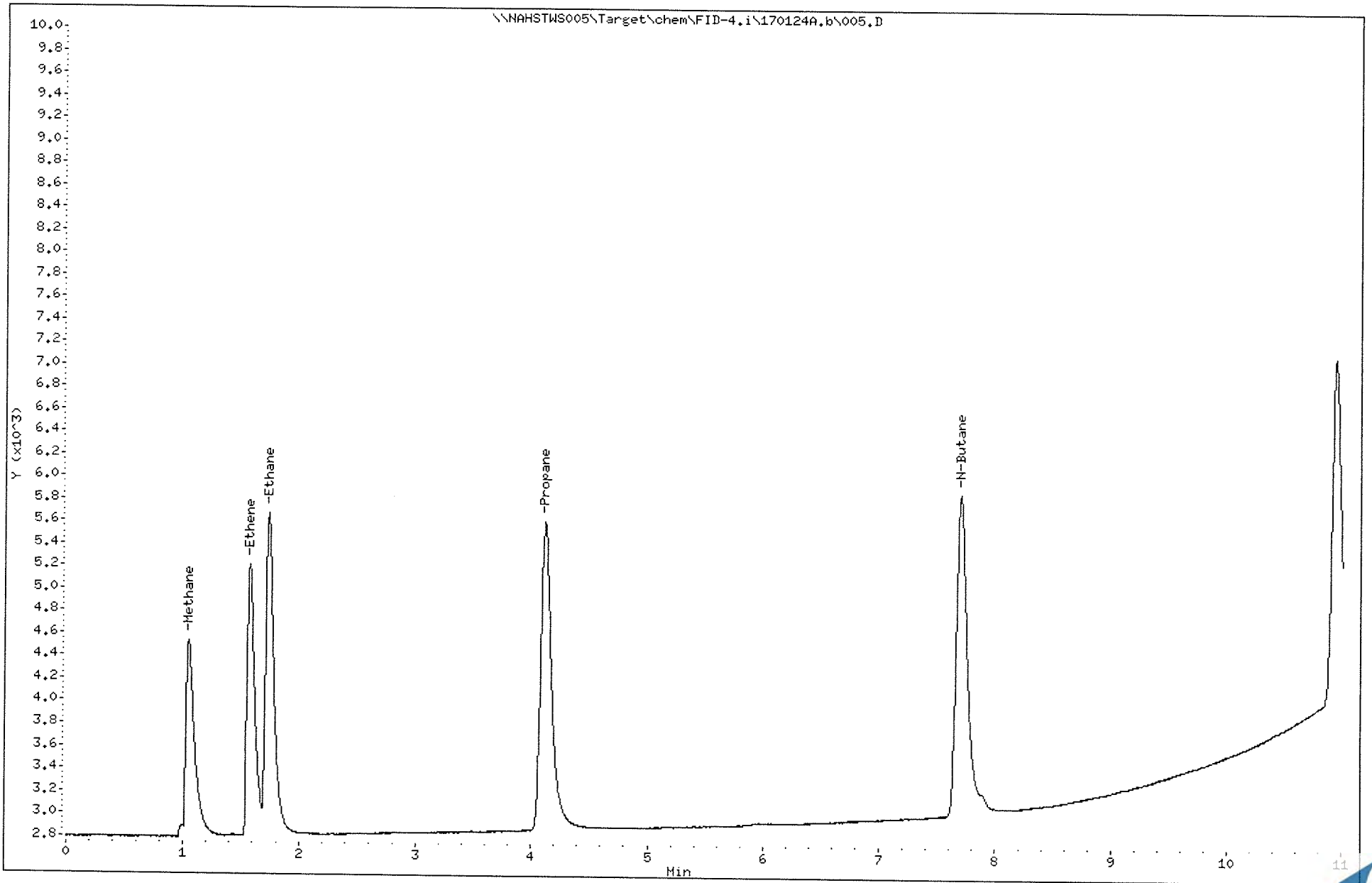
M - Compound response manually integrated.

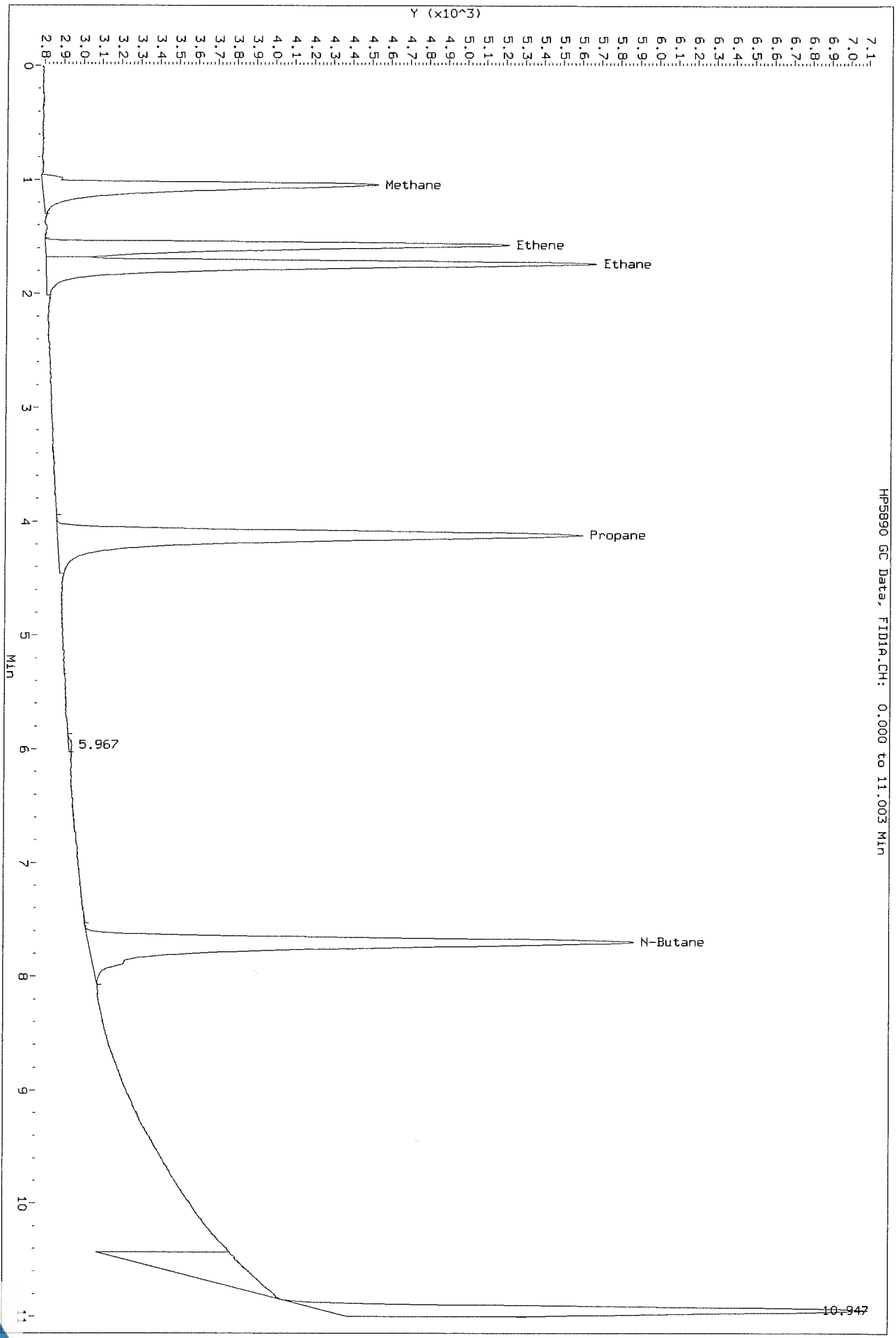
Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\005.D
Date : 24-JAN-2017 10:39
Client ID: ICAL5
Sample Info: ICAL5;ICAL5;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53

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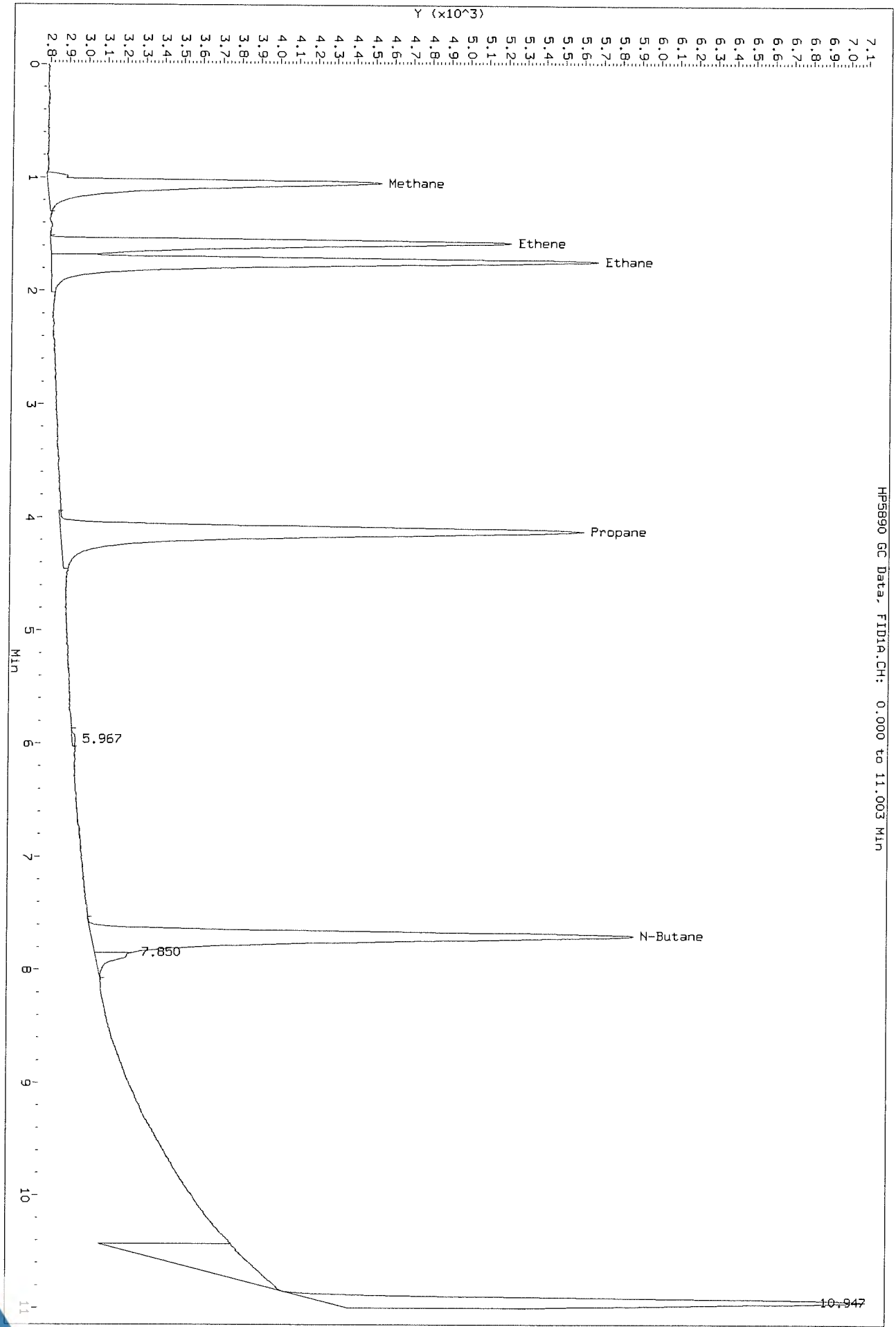
Injection Date: 24-JAN-2017 10:39
Instrument: FID-4.i
Client Sample ID: ICAL5
HP5890 GC Data, FIDiA.CH: 0.000 to 11.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
5.967
N-Butane
10.947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Injection Date: 24-JAN-2017 10:39
Instrument: FID-4.i
Client Sample ID: ICAL5
HP5890 GC Data, FID1A.CH: 0.000 to 11.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
Propane
5.967
N-Butane
7.850
10.947

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Lab Smp Id: ICAL6 Client Smp ID: ICAL6
Inj Date : 24-JAN-2017 10:57
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL6;ICAL6;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:39 Cal File: 005.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

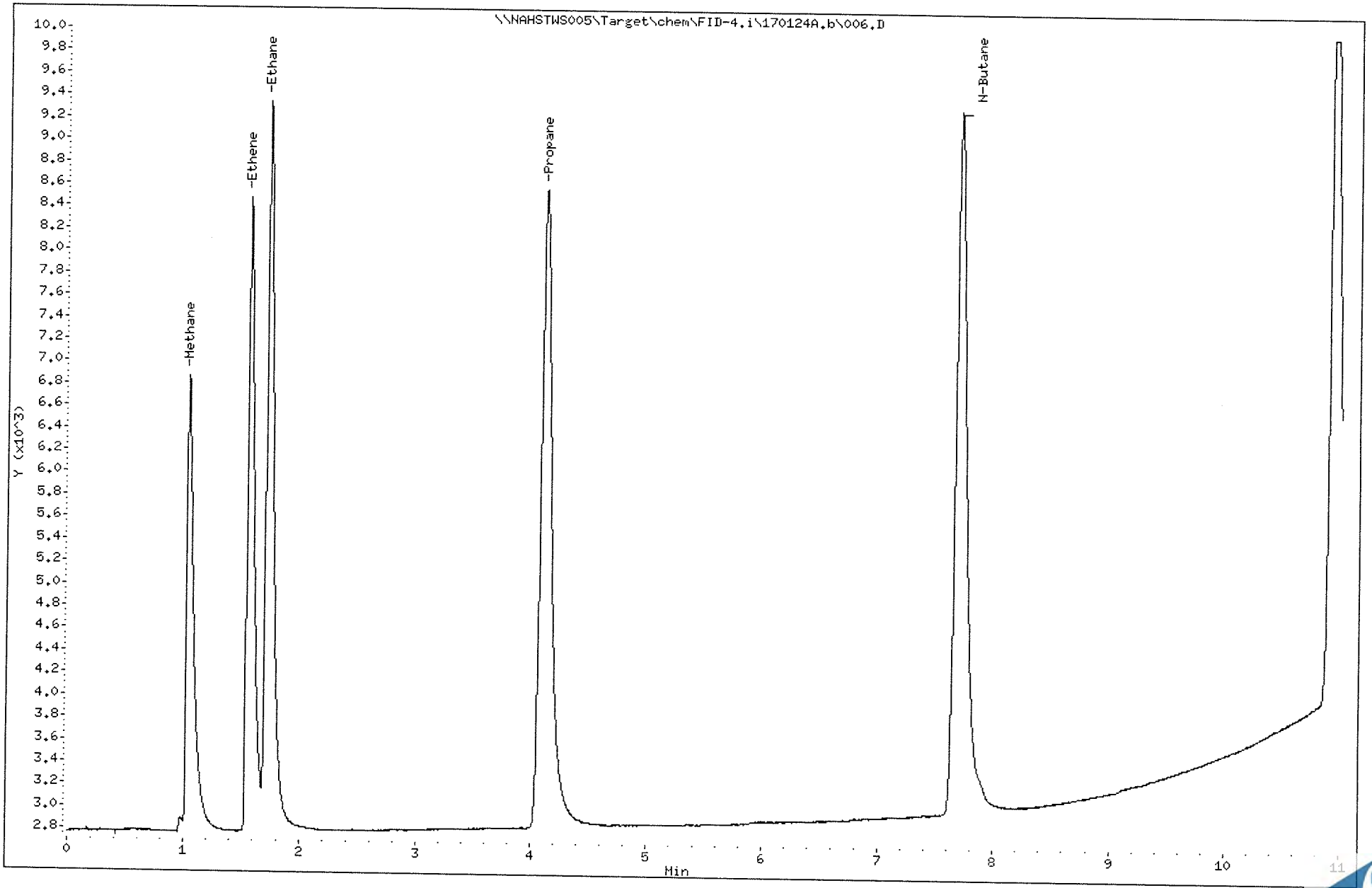
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	1.023	1.030	-0.007	17957	19.2940	18.429
2 Ethene	1.550	1.556	-0.006	22910	53.8200	39.078
3 Ethane	1.716	1.723	-0.007	29505	36.0860	40.070
4 Propane	4.110	4.113	-0.003	38286	52.9260	52.796
5 N-Butane	7.696	7.690	0.006	42817	69.9110	70.855

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\006.D
Date : 24-JAN-2017 10:57
Client ID: ICAL6
Sample Info: ICAL6;ICAL6;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Lab Smp Id: ICAL7 Client Smp ID: ICAL7
Inj Date : 24-JAN-2017 11:13
Operator : MA Inst ID: FID-4.i
Smp Info : ICAL7;ICAL7;;;
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 10:57 Cal File: 006.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Methane	1.030	1.030	0.000	41736	38.5880	42.833(A)
2 Ethene	1.556	1.556	0.000	55865	67.4000	95.291(A)
3 Ethane	1.723	1.723	0.000	72124	72.1720	97.951(A)
4 Propane	4.113	4.113	0.000	96509	105.852	105.844
5 N-Butane	7.690	7.690	0.000	114164	139.821	139.707

QC Flag Legend

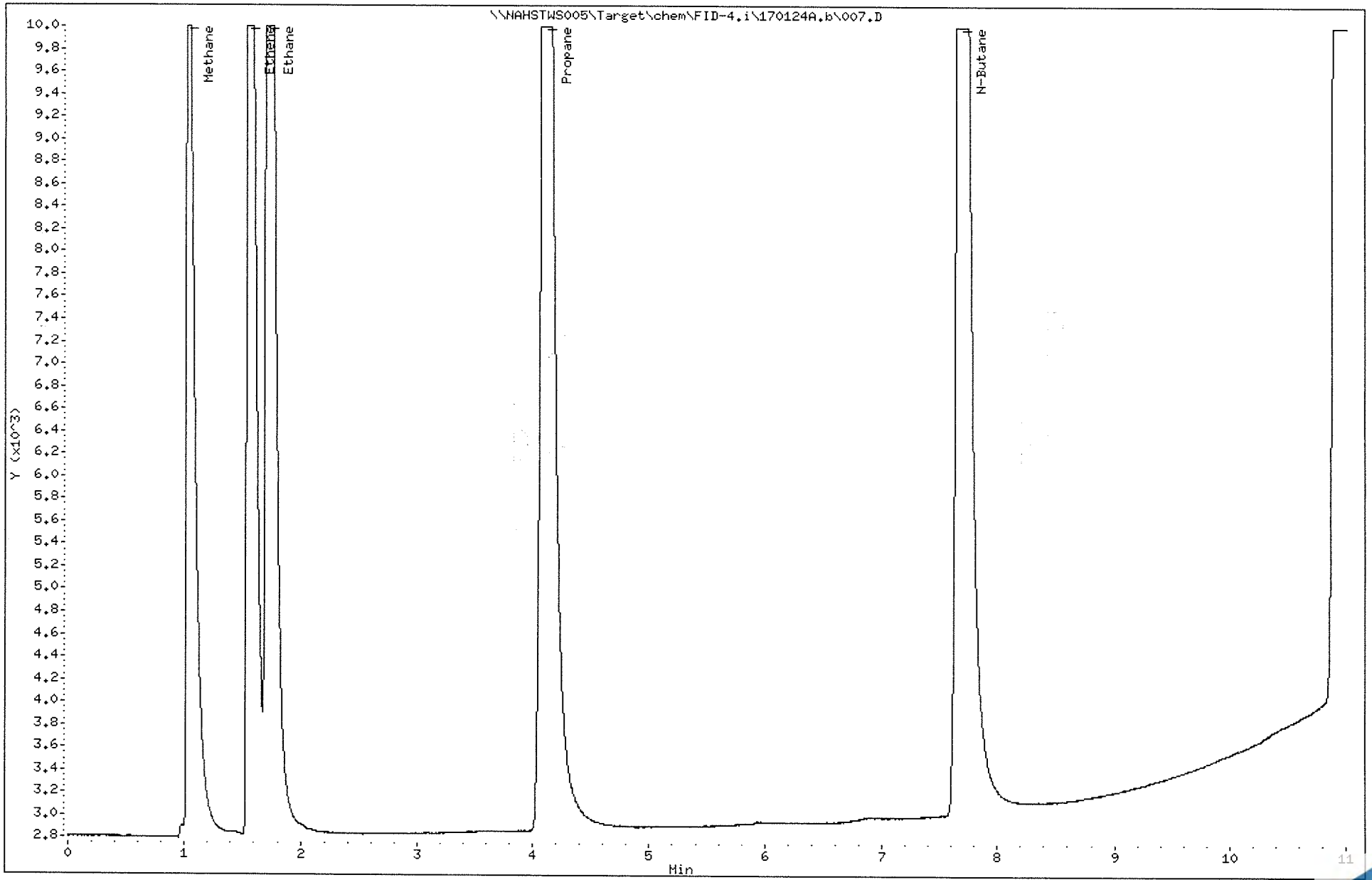
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\007.D
Date : 24-JAN-2017 11:13
Client ID: ICAL7
Sample Info: ICAL7;ICAL7;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D Page 1
Report Date: 08-Apr-2020 12:18

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 24-JAN-2017 12:05
Operator : MA Inst ID: FID-4.i
Smp Info : ICV;ICV;;;
Misc Info : ;1;0;1
Comment :
Method : \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\RSKNI2.m
Meth Date : 26-Feb-2020 16:33 Purvi.lad Quant Type: ESTD
Cal Date : 24-JAN-2017 11:13 Cal File: 007.D
Als bottle: 8 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: stdNIP2.sub
Target Version: 4.14

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

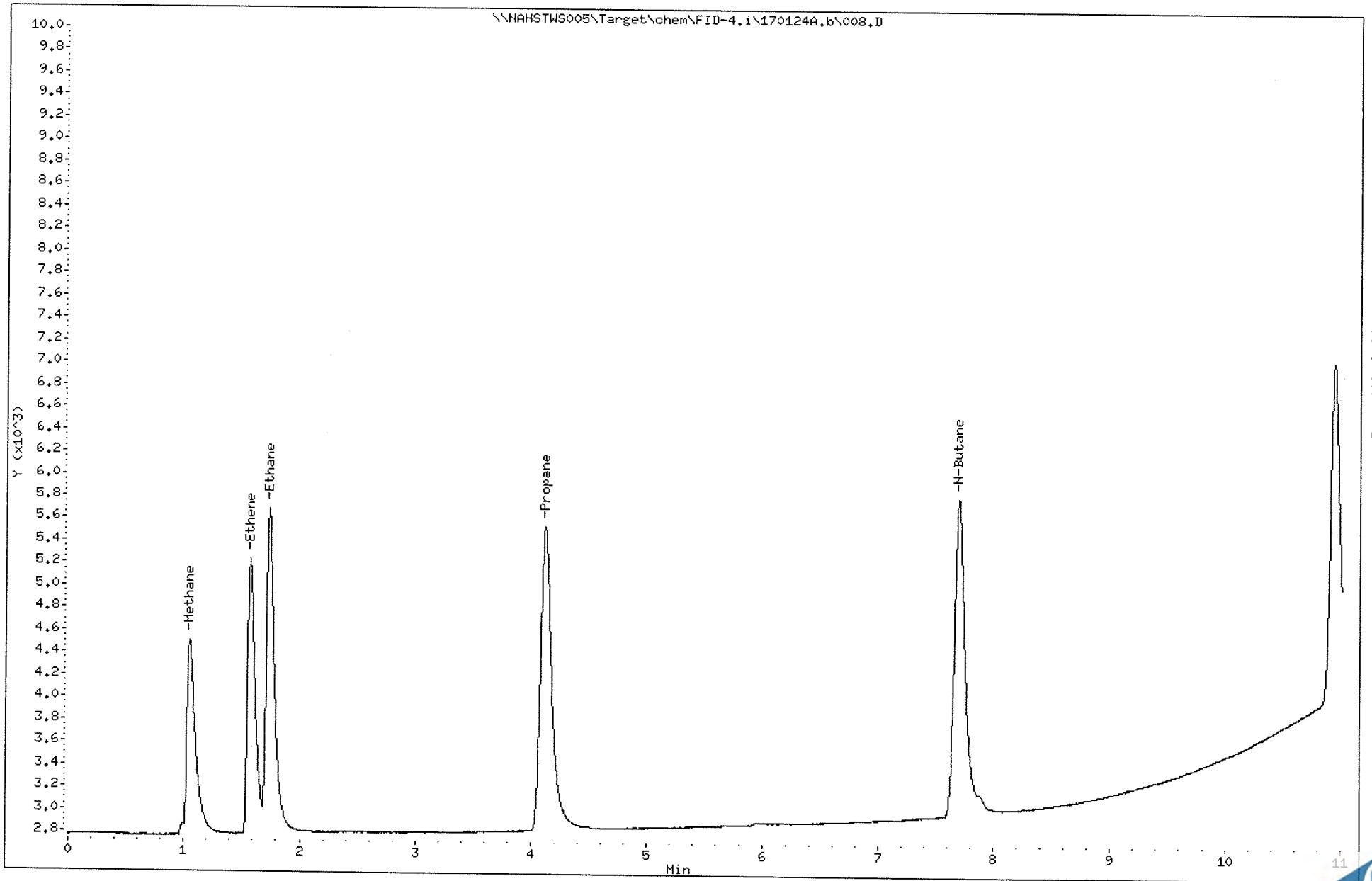
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	1.046	1.030	0.016	9352	9.59792	9.597
2 Ethene	1.573	1.556	0.017	11192	19.0906	19.090
3 Ethane	1.736	1.723	0.013	14474	19.6571	19.657
4 Propane	4.116	4.113	0.003	18164	27.2381	27.238
5 N-Butane	7.696	7.690	0.006	19425	36.0103	36.010

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124A.b\008.D
Date : 24-JAN-2017 12:05
Client ID: ICV
Sample Info: ICV;ICV;;;

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: MA
Column diameter: 0.53



FID04 -Logbook

Batch: 42550 **Analyst:** Devak Giga

Date: 10-26-2020 **Reviewer:**

Method: RSK **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	RSK-CCV	CCV	10-26-2020 09:50 am	1.00	0.00 mL	0.00 mL	001.D	Liquid	Y	NA
2	MBLK-201026	MBLK	10-26-2020 10:00 am	1.00	0.00 mL	0.00 mL	002.D	Liquid	Y	NA
3	LCS-201026	LCS	10-26-2020 10:08 am	1.00	0.00 mL	0.00 mL	003.D	Liquid	Y	NA
4	LCSD-201026	LCSD	10-26-2020 10:19 am	1.00	0.00 mL	0.00 mL	004.D	Liquid	Y	NA
5	HS20101242-02	SAMP	10-26-2020 10:30 am	1.00	0.00 mL	0.00 mL	005.D	Liquid	Y	NA
6	HS20101242-03	SAMP	10-26-2020 10:40 am	1.00	0.00 mL	0.00 mL	006.D	Liquid	Y	NA
7	HS20101242-04	SAMP	10-26-2020 10:48 am	1.00	0.00 mL	0.00 mL	007.D	Liquid	Y	NA
8	HS20101242-05	SAMP	10-26-2020 10:55 am	1.00	0.00 mL	0.00 mL	008.D	Liquid	Y	NA
9	HS20101242-07	SAMP	10-26-2020 11:04 am	1.00	0.00 mL	0.00 mL	009.D	Liquid	Y	NA
10	HS20101242-08	SAMP	10-26-2020 11:19 am	1.00	0.00 mL	0.00 mL	010.D	Liquid	Y	NA
11	RSK-CCV	CCV	10-26-2020 11:27 am	1.00	0.00 mL	0.00 mL	011.D	Liquid	Y	NA
12	HS20101242-09	SAMP	10-26-2020 11:47 am	1.00	0.00 mL	0.00 mL	012.D	Liquid	Y	NA
13	HS20101242-02	SAMP	10-26-2020 12:08 pm	100.0(	0.00 mL	0.00 mL	013.D	Liquid	Y	NA
14	HS20101242-05	SAMP	10-26-2020 12:17 pm	100.0(	0.00 mL	0.00 mL	014.D	Liquid	Y	NA
15	HS20101242-07	SAMP	10-26-2020 12:24 pm	20.00	0.00 mL	0.00 mL	015.D	Liquid	Y	NA
16	HS20101242-08	SAMP	10-26-2020 12:36 pm	50.00	0.00 mL	0.00 mL	016.D	Liquid	Y	NA
17	HS20101242-09	SAMP	10-26-2020 12:45 pm	200.0(	0.00 mL	0.00 mL	017.D	Liquid	Y	NA
18	HS20101079-01	SAMP	10-26-2020 12:57 pm	1.00	0.00 mL	0.00 mL	018.D	Liquid	Y	NA
19	HS20101079-03	SAMP	10-26-2020 01:05 pm	1.00	0.00 mL	0.00 mL	019.D	Liquid	Y	NA
20	HS20101079-03MS	MS	10-26-2020 01:16 pm	1.00	0.00 mL	0.00 mL	020.D	Liquid	Y	NA
21	HS20101079-03MSD	MSD	10-26-2020 01:34 pm	1.00	0.00 mL	0.00 mL	021.D	Liquid	Y	NA
22	RSK-CCV	CCV	10-26-2020 01:42 pm	1.00	0.00 mL	0.00 mL	022.D	Liquid	Y	NA
23	HS20101079-01	SAMP	10-26-2020 02:15 pm	10.00	0.00 mL	0.00 mL	023.D	Liquid	Y	NA
24	HS20101123-01	SAMP	10-26-2020 02:23 pm	1.00	0.00 mL	0.00 mL	024.D	Liquid	Y	NA
25	HS20101123-01MS	MS	10-26-2020 02:31 pm	1.00	0.00 mL	0.00 mL	025.D	Liquid	Y	NA
26	HS20101123-01MSD	MSD	10-26-2020 02:49 pm	1.00	0.00 mL	0.00 mL	026.D	Liquid	Y	NA
27	HS20101123-04	SAMP	10-26-2020 03:03 pm	1.00	0.00 mL	0.00 mL	027.D	Liquid	Y	NA
28	HS20101123-09	SAMP	10-26-2020 03:12 pm	1.00	0.00 mL	0.00 mL	028.D	Liquid	Y	NA
29	HS20101123-04	SAMP	10-26-2020 03:21 pm	100.0(	0.00 mL	0.00 mL	029.D	Liquid	Y	NA
30	RSK-CCV	CCV	10-26-2020 03:32 pm	1.00	0.00 mL	0.00 mL	030.D	Liquid	Y	NA

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 0950

Lab File ID: 001 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	681.70482	0.01	5.25	20.00	AVRG
Methane	974.99200	865.24308	0.01	11.26	20.00	AVRG
Ethene	585.76000	522.13650	0.01	10.86	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1127

Lab File ID: 011 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	778.14111	0.01	-8.15	20.00	AVRG
Methane	974.99200	919.87146	0.01	5.65	20.00	AVRG
Ethene	585.76000	617.21068	0.01	-5.37	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1342

Lab File ID: 022 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	751.98138	0.01	-4.52	20.00	AVRG
Methane	974.99200	889.91396	0.01	8.73	20.00	AVRG
Ethene	585.76000	584.51039	0.01	0.21	20.00	AVRG

FORM VII GASES

FORM 7B
GASES CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS-HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS20101123

Instrument ID: FID-4 Calibration Date: 10/26/20 Time: 1532

Lab File ID: 030 Init. Calib. Date(s): 01/24/17 01/24/17

Init. Calib. Times: 0906 1113

GC Column: RTX-PLOT ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF250.00 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
Ethane	719.48900	734.30139	0.01	-2.06	20.00	AVRG
Methane	974.99200	918.52389	0.01	5.79	20.00	AVRG
Ethene	585.76000	590.38576	0.01	-0.79	20.00	AVRG

FORM VII GASES

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\001.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 09:50
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

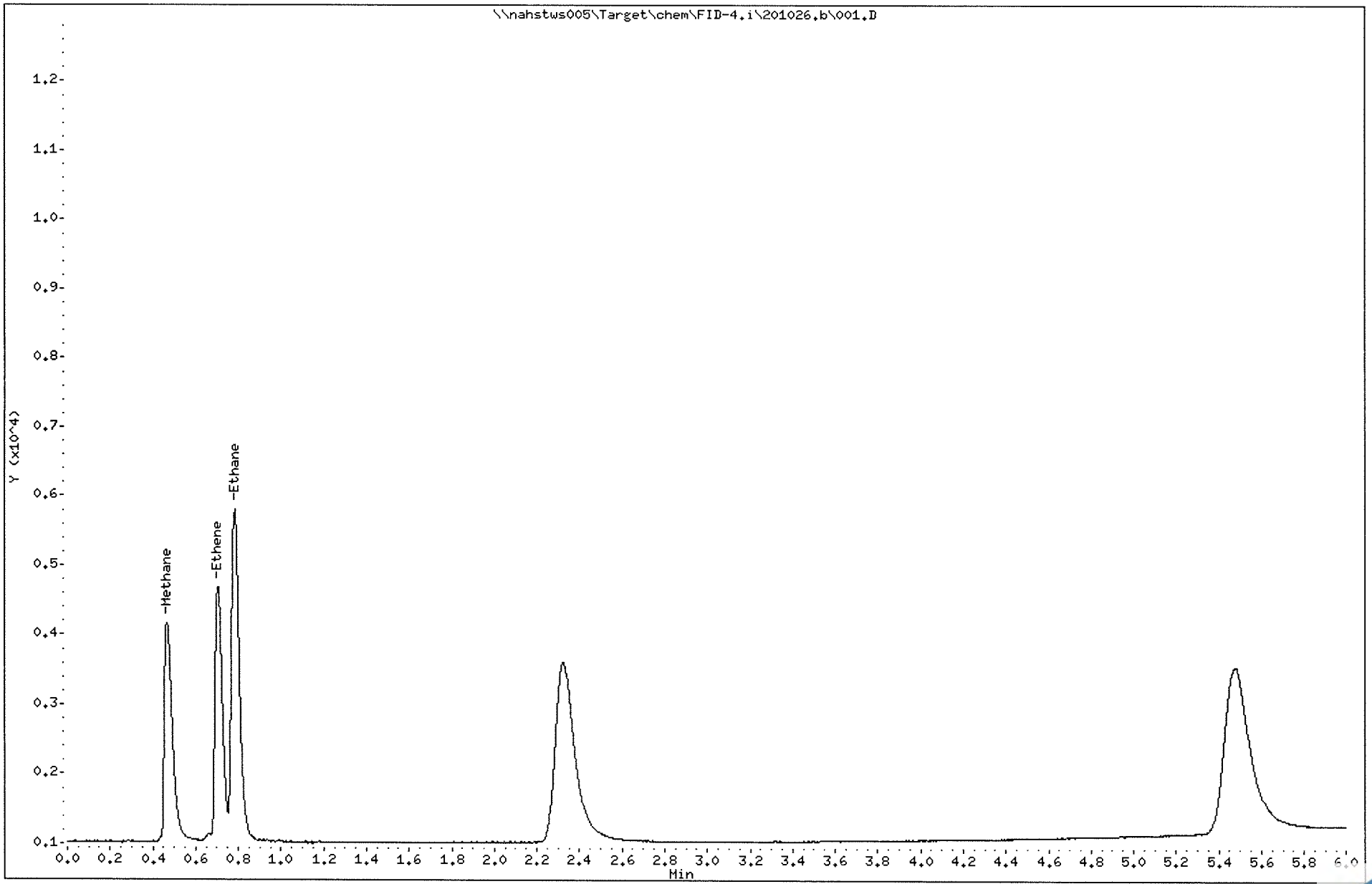
					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.466	0.466	0.000	8347	9.64700	8.561
2 Ethene	0.703	0.703	0.000	8798	16.8500	15.019
3 Ethane	0.783	0.783	0.000	12300	18.0430	17.095

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\001.D
Date : 26-OCT-2020 09:50
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\002.D
Report Date: 01-Dec-2020 12:23

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\002.D
Lab Smp Id: MBLK-201026 Client Smp ID: MBLK-201026
Inj Date : 26-OCT-2020 10:00
Operator : PL Inst ID: FID-4.i
Smp Info : MBLK-201026;MBLK-201026;3;;BLANK
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 2 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

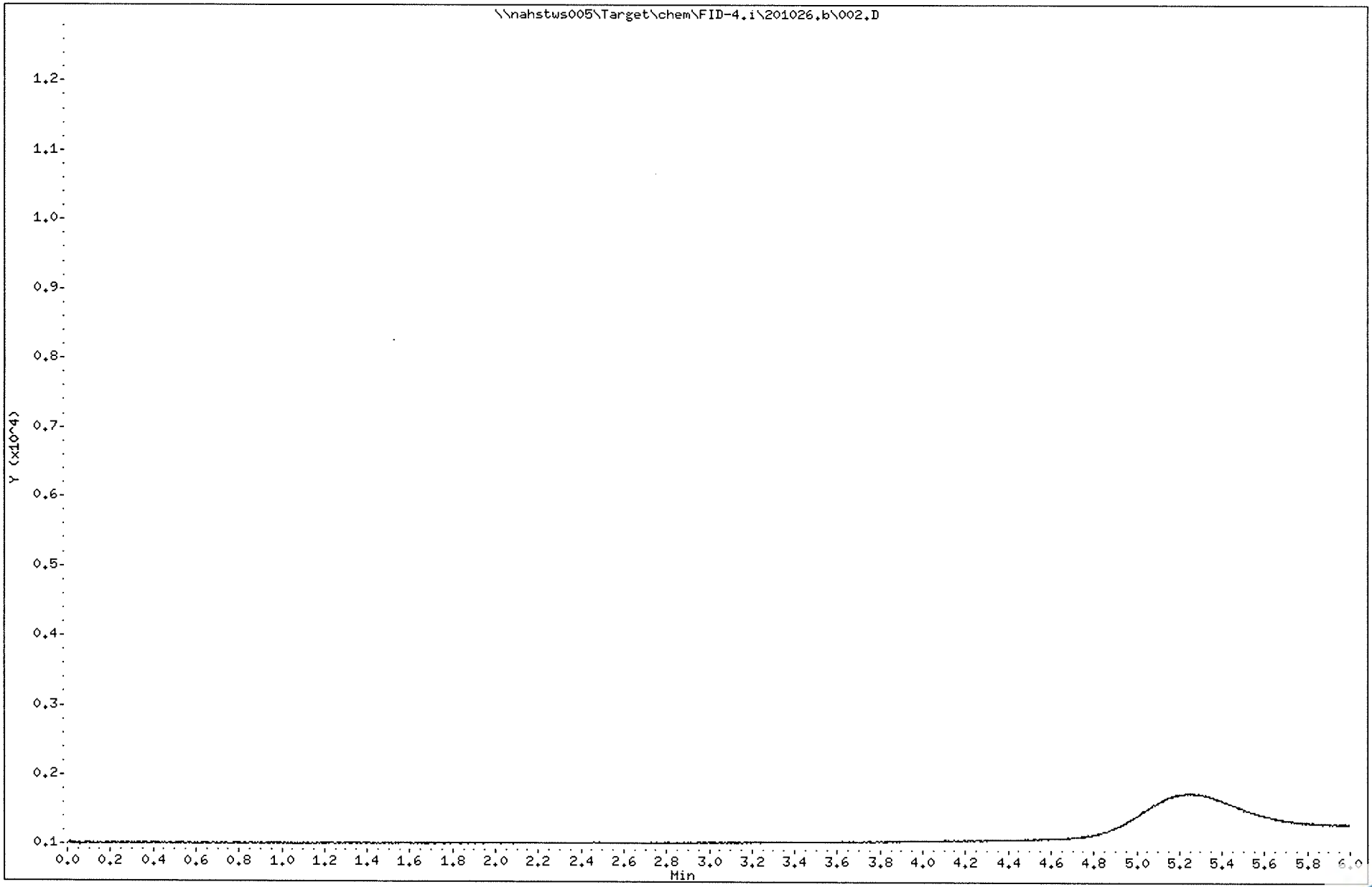
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\002.D
Date : 26-OCT-2020 10:00
Client ID: MBLK-201026
Sample Info: MBLK-201026;MBLK-201026;3;;BLANK

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D Page 1
Report Date: 01-Dec-2020 12:23

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\003.D
Lab Smp Id: LCS-201026 Client Smp ID: LCS-201026
Inj Date : 26-OCT-2020 10:08
Operator : PL Inst ID: FID-4.i
Smp Info : LCS-201026;LCS-201026;3;;LCS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.463	0.466	-0.003	9115	9.34879	9.348
2 Ethene	0.700	0.703	-0.003	10888	18.5878	18.587
3 Ethane	0.780	0.783	-0.003	14653	20.3658	20.365(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D

Date : 26-OCT-2020 10:08

Client ID: LCS-201026

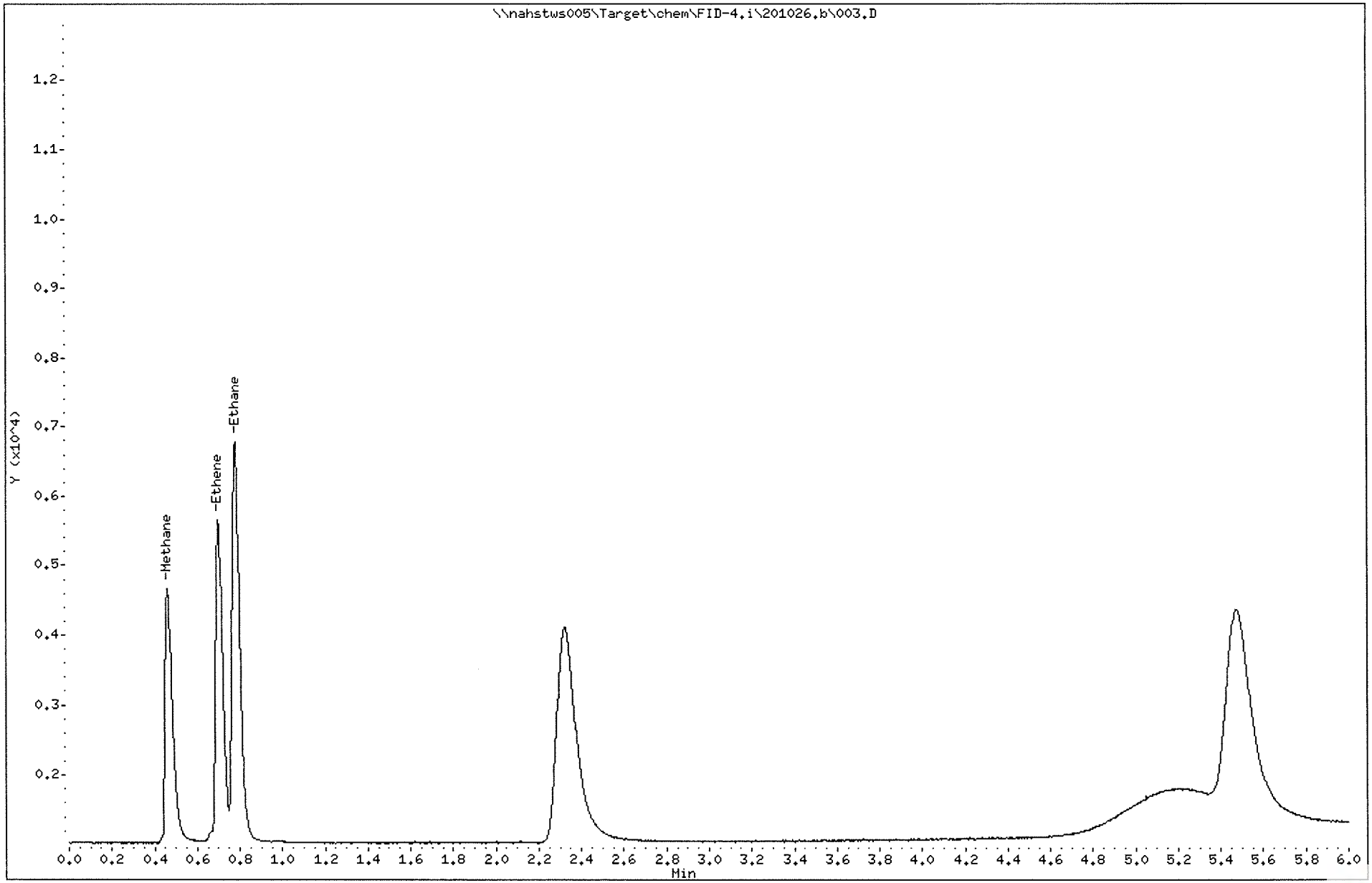
Instrument: FID-4.i

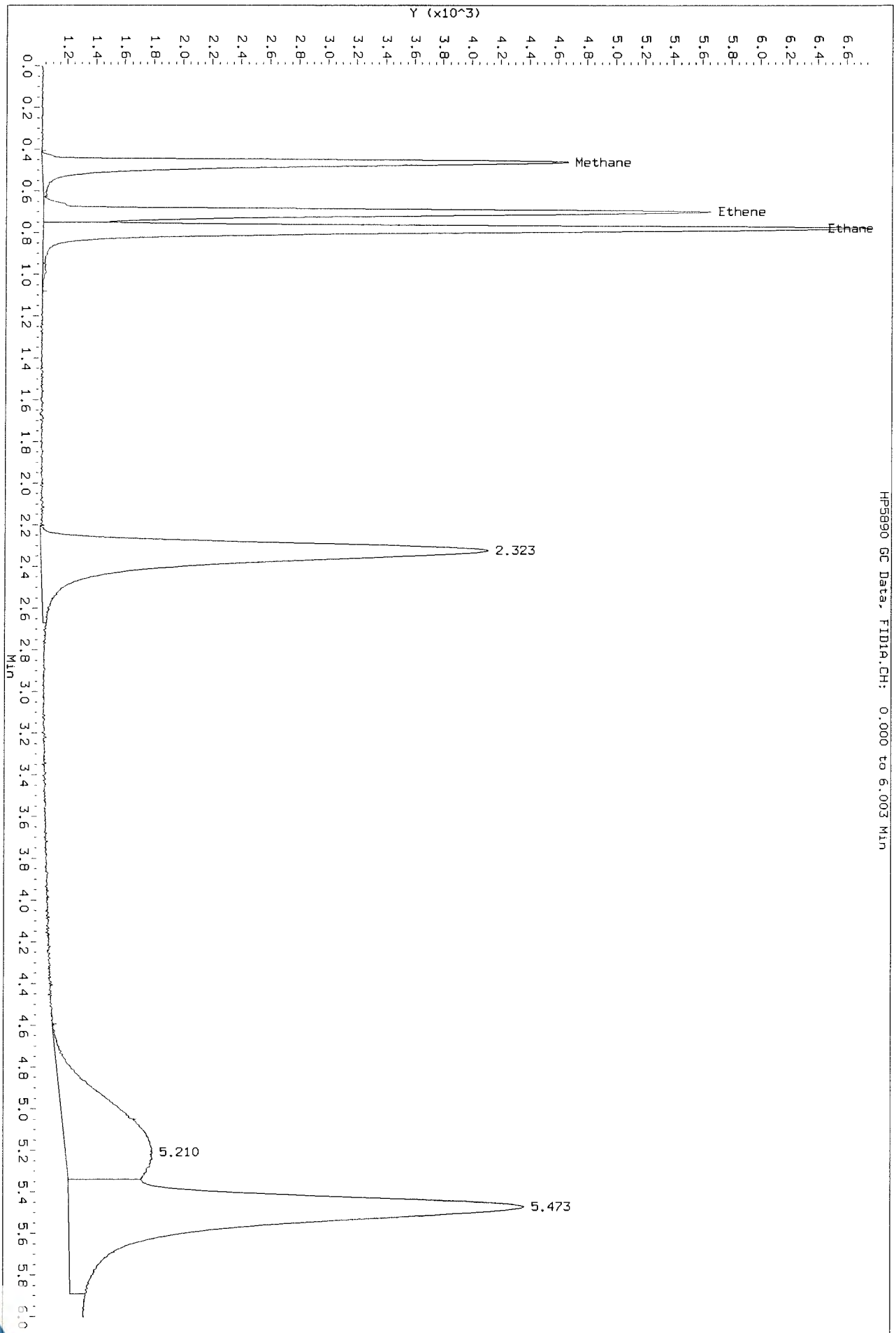
Sample Info: LCS-201026;LCS-201026;3;;LCS

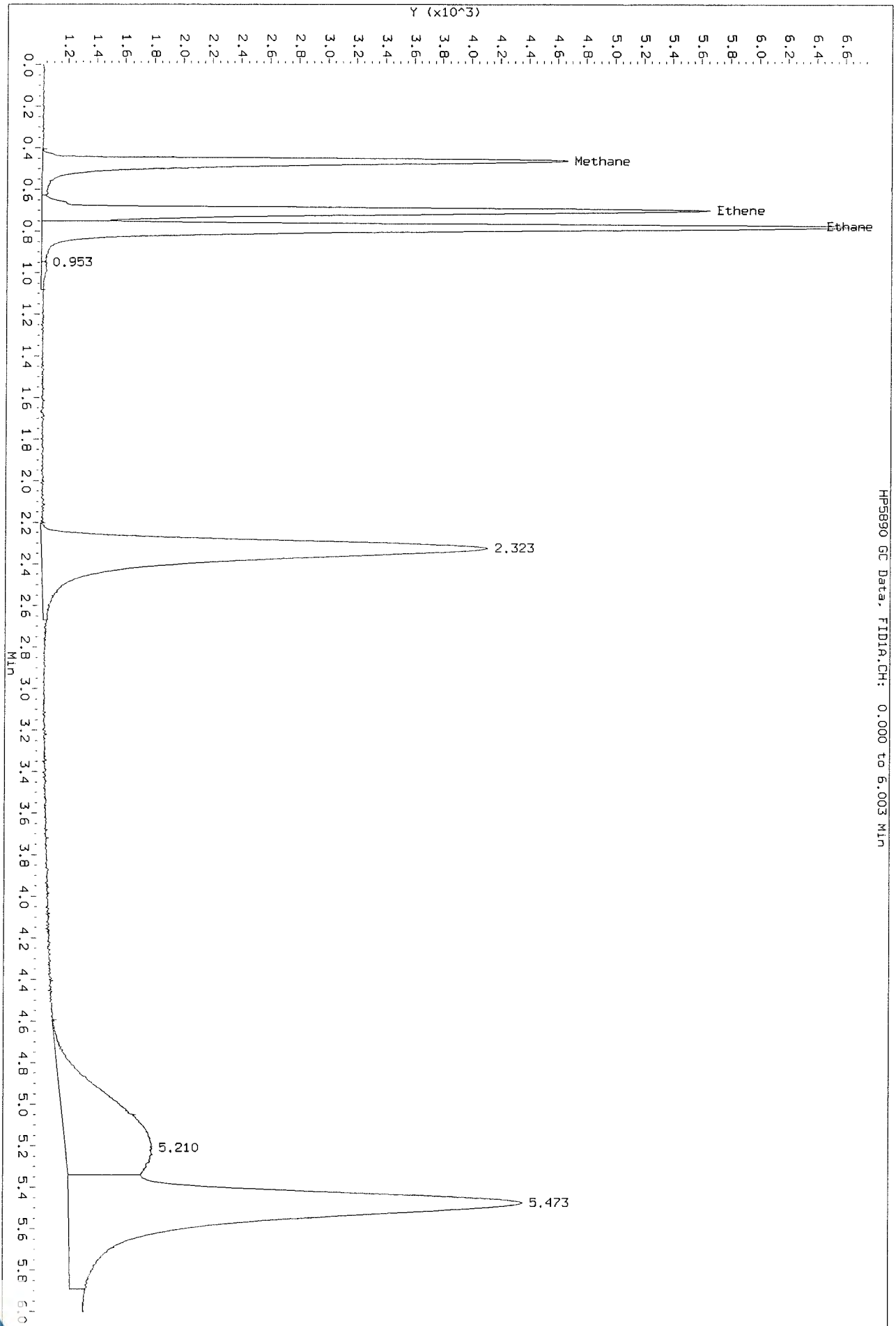
Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\003.D
Injection Date: 26-OCT-2020 10:08
Instrument: FID-4.i
Client Sample ID: LCS-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.323
5.210
5.473


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\003.D
Injection Date: 26-OCT-2020 10:08
Instrument: FID-4.i
Client Sample ID: LCS-201026
Y (x10^3)
Methane
Ethene
Ethane
0.953
2.323
5.210
5.473
Min
HP5890 GC Data. FIDiA.CH: 0.000 to 6.003 Min

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\004.D
Lab Smp Id: LCSD-201026 Client Smp ID: LCSD-201026
Inj Date : 26-OCT-2020 10:19
Operator : PL Inst ID: FID-4.i
Smp Info : LCSD-201026;LCSD-201026;3;;LCSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 4 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.456	0.466	-0.010	10261	10.5242	10.524
2 Ethene	0.693	0.703	-0.010	10497	17.9203	17.920
3 Ethane	0.773	0.783	-0.010	14406	20.0225	20.022(M)

QC Flag Legend

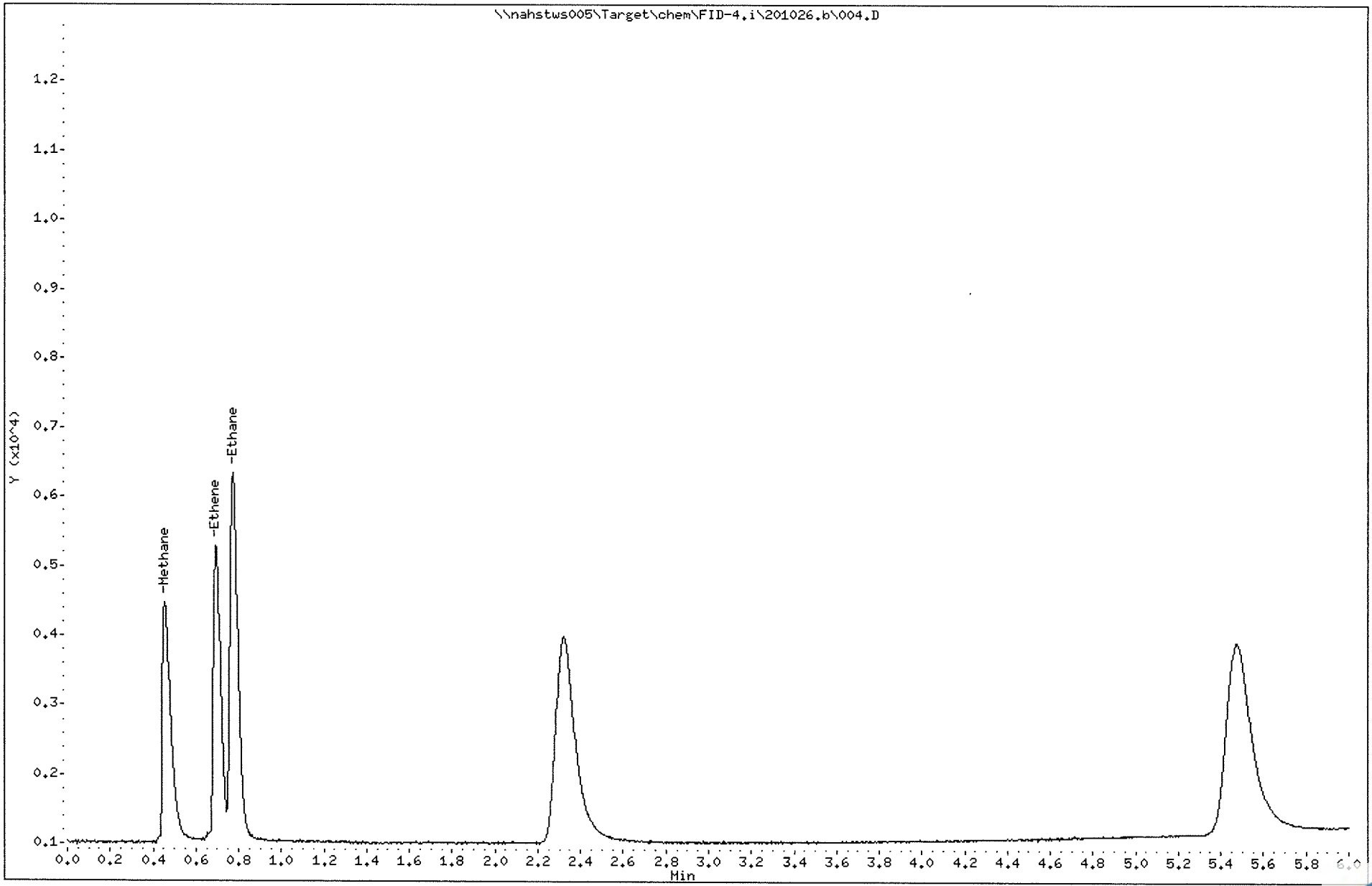
M - Compound response manually integrated.

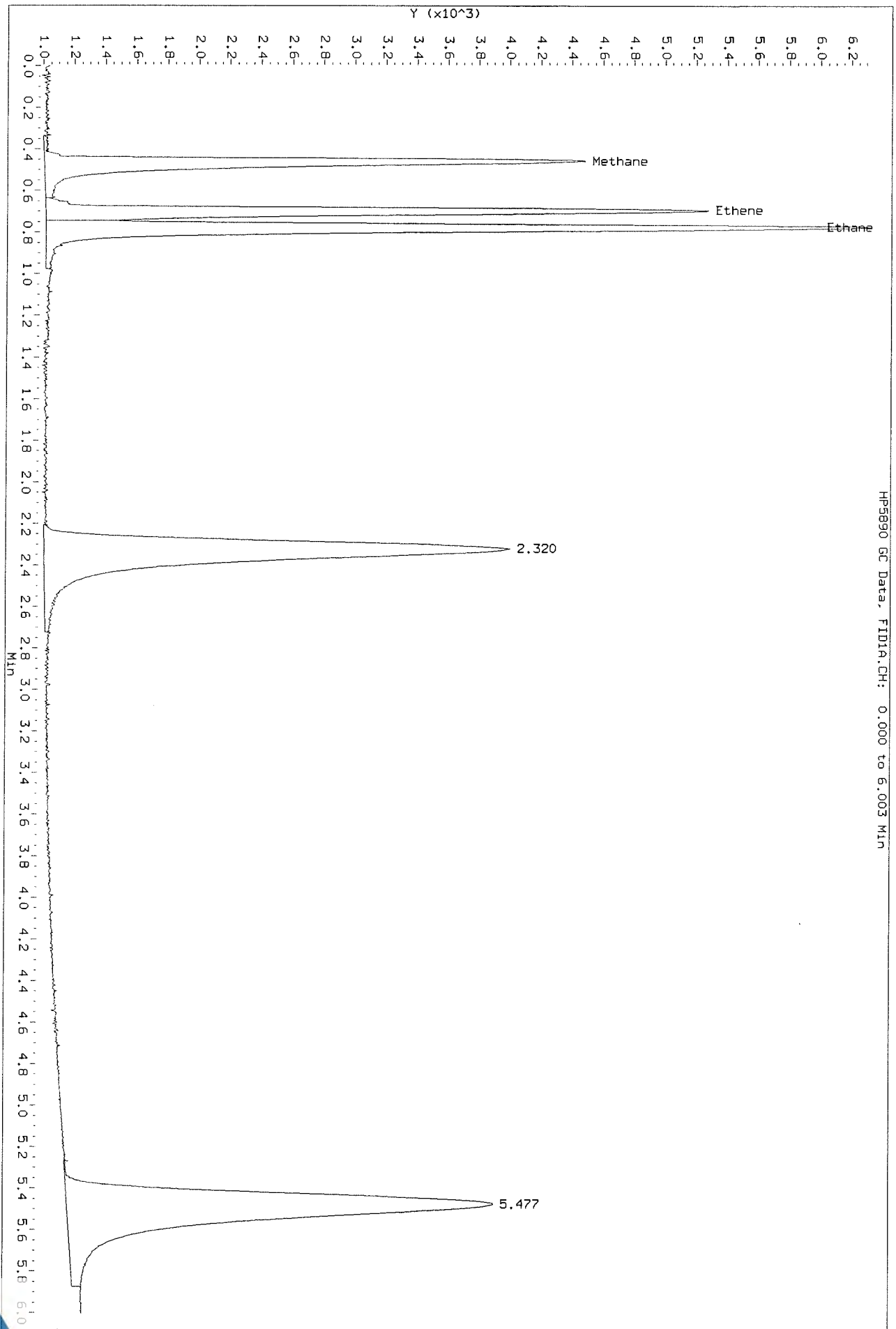
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\004.D
Date : 26-OCT-2020 10:19
Client ID: LCSD-201026
Sample Info: LCSD-201026;LCSD-201026;3;;LCSD

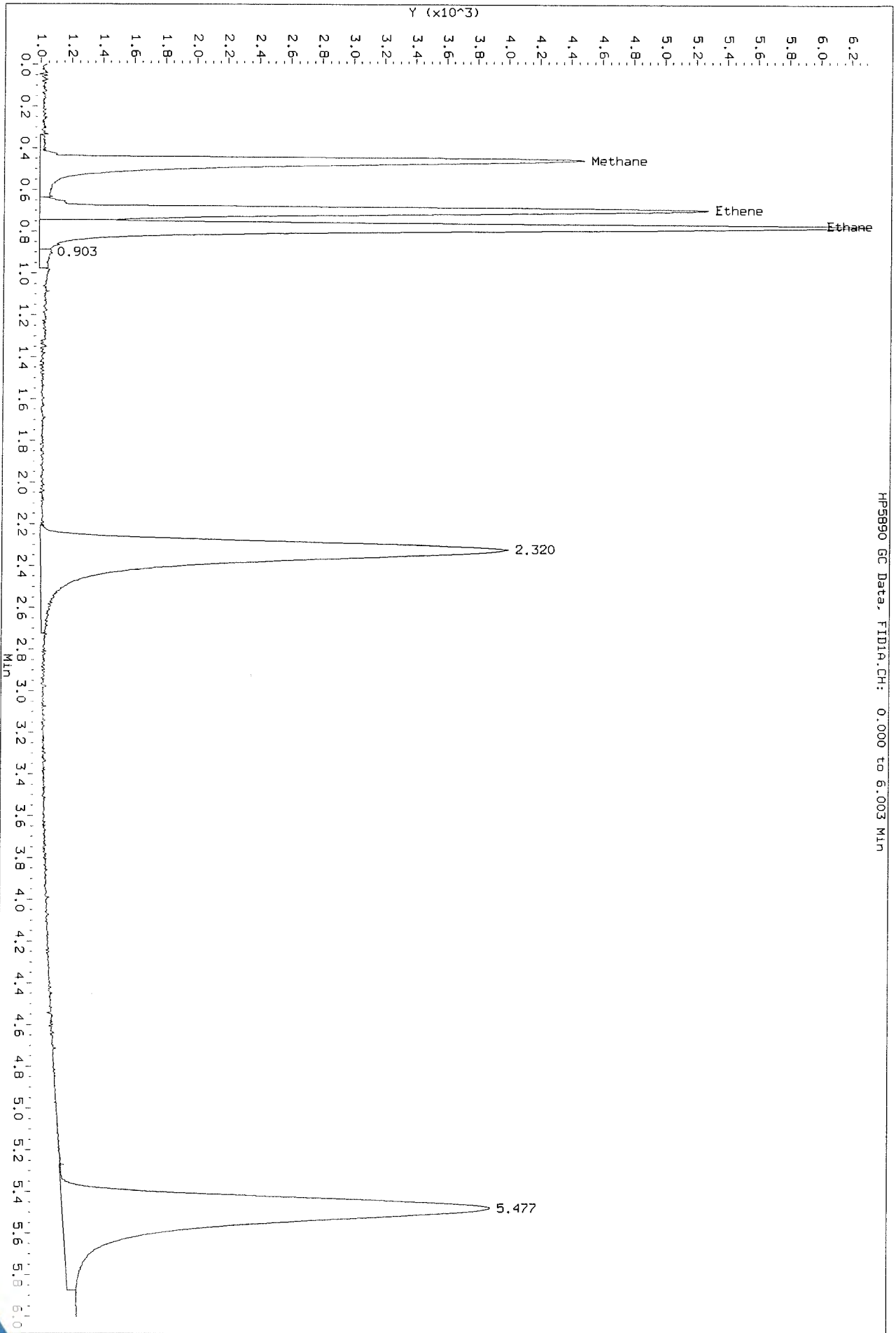
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\ahstws005\Target\chem\FID-4.i\201026.b\Before\004.D
Injection Date: 26-OCT-2020 10:19
Instrument: FID-4.i
Client Sample ID: LCSD-201026
Y (x10^3)
Methane
Ethene
Ethane
2.320
5.477
Min
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min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Injection Date: 26-OCT-2020 10:19
Instrument: FID-4.i
Client Sample ID: LCSD-201026
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
0.903
2.320
5.477

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\011.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 11:27
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

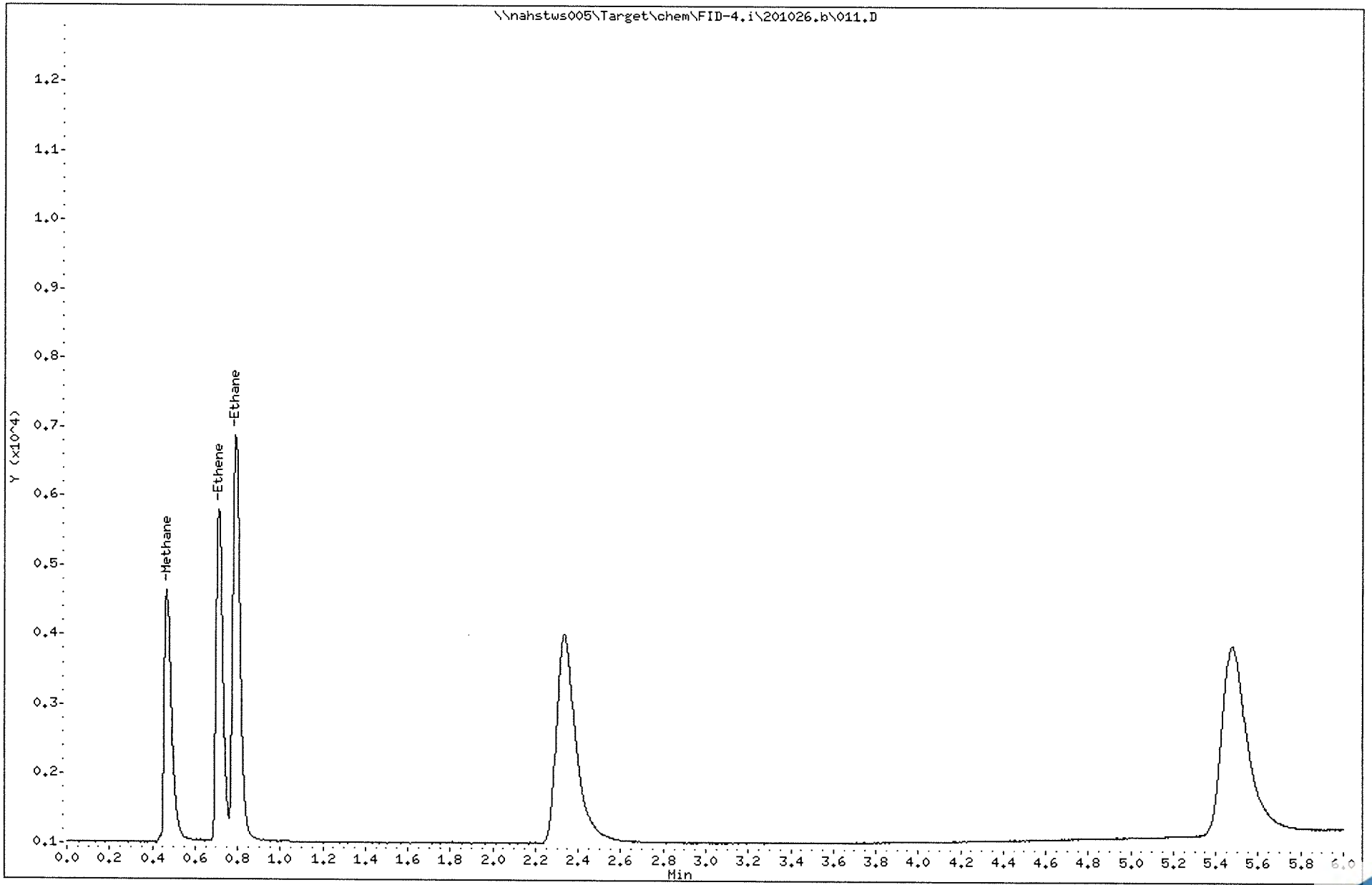
Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	0.466	0.466	0.000	8874	9.64700	9.101
2 Ethene	0.710	0.710	0.000	10400	16.8500	17.754
3 Ethane	0.790	0.790	0.000	14040	18.0430	19.513

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\011.D
Date : 26-OCT-2020 11:27
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\020.D Page 1
Report Date: 01-Dec-2020 12:23

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\020.D
Lab Smp Id: HS20101079-03MS Client Smp ID: HS20101079-03MS
Inj Date : 26-OCT-2020 13:16
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-03MS;HS20101079-03MS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 20 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.466	0.466	0.000	6736	6.90877	6.908(R)
2 Ethene	0.703	0.710	-0.007	7284	12.4351	12.435(RM)
3 Ethane	0.783	0.790	-0.007	7976	11.0856	11.085(RM)

QC Flag Legend

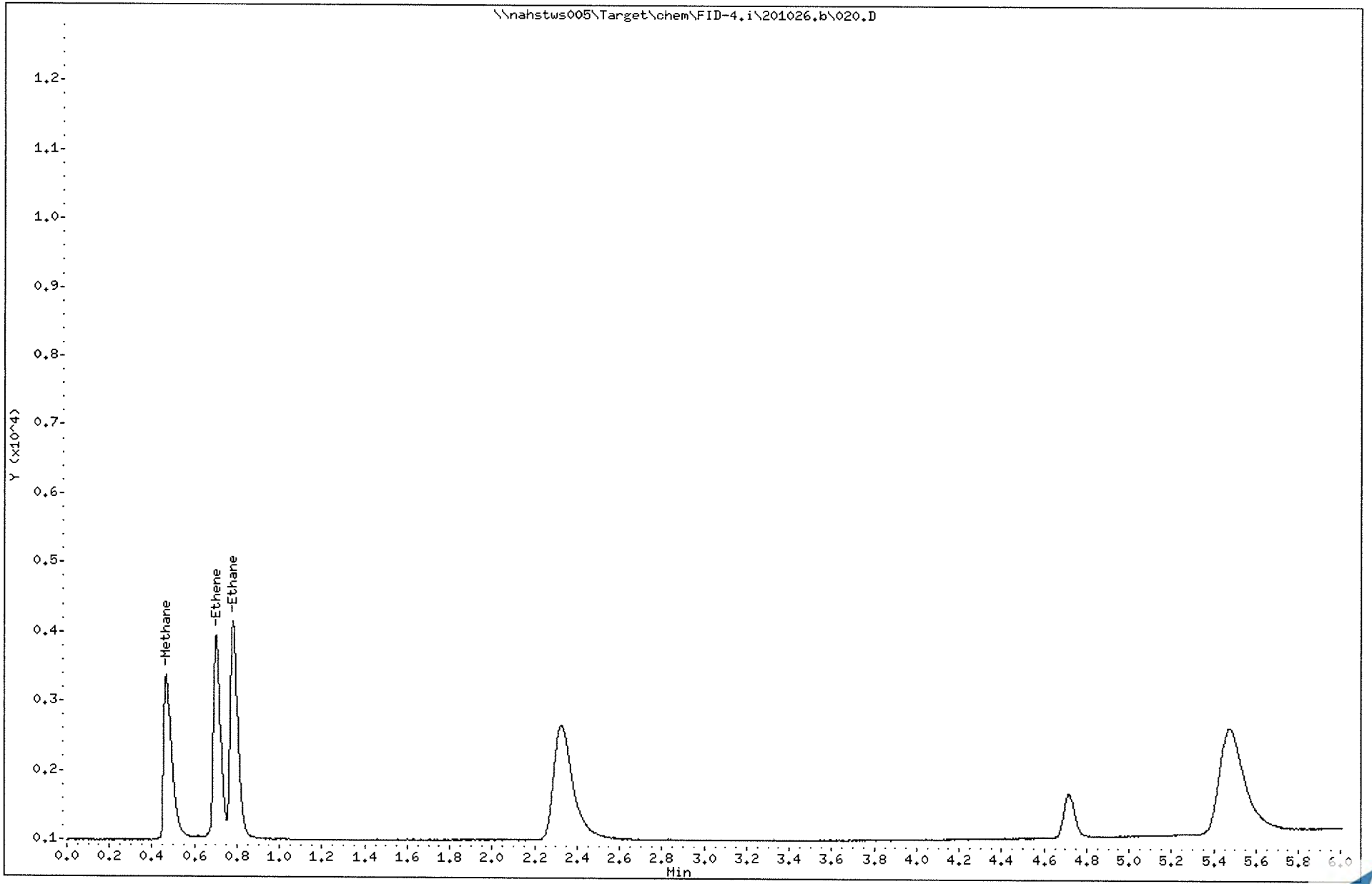
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

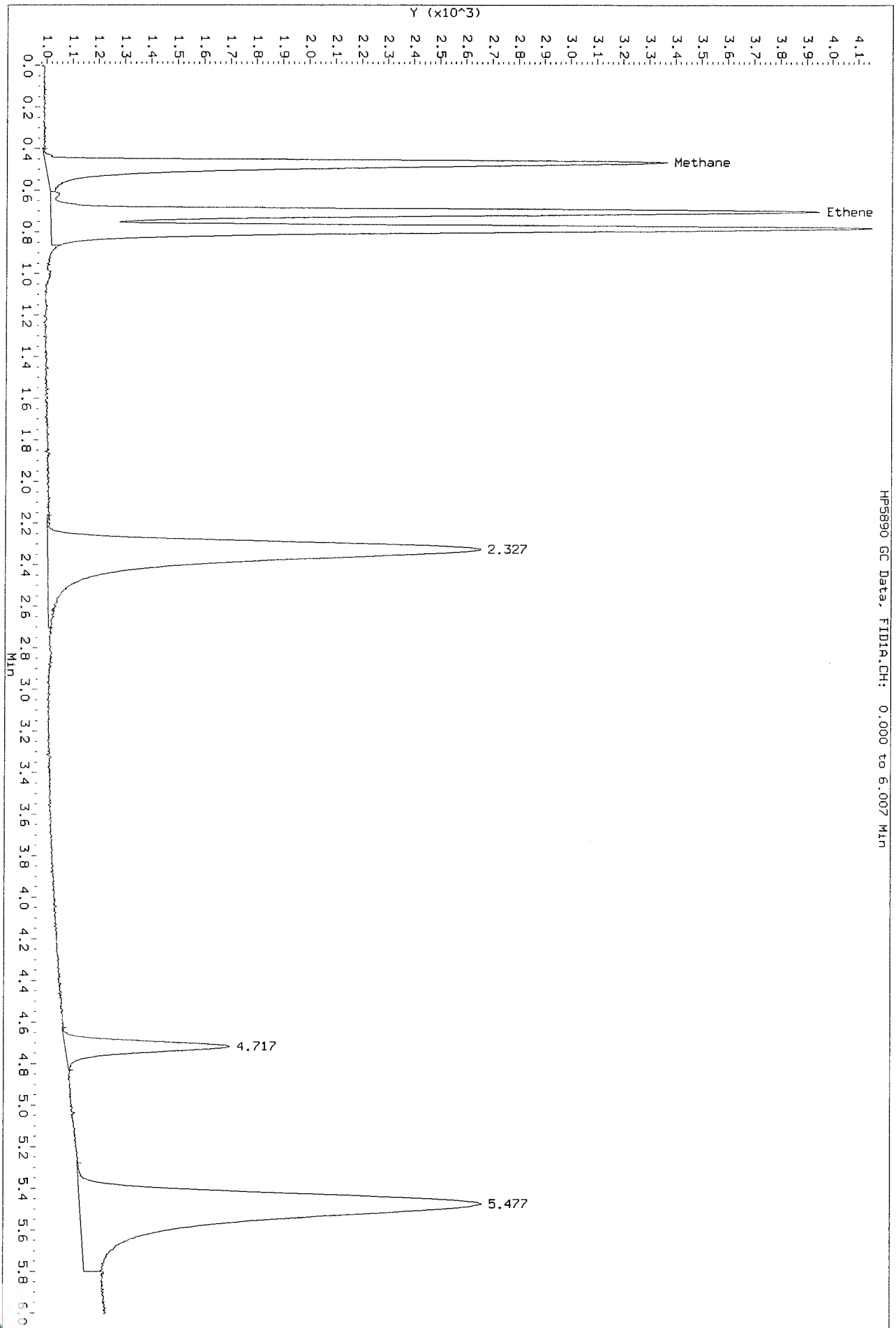
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\020.D
Date : 26-OCT-2020 13:16
Client ID: HS20101079-03MS
Sample Info: HS20101079-03MS;HS20101079-03MS

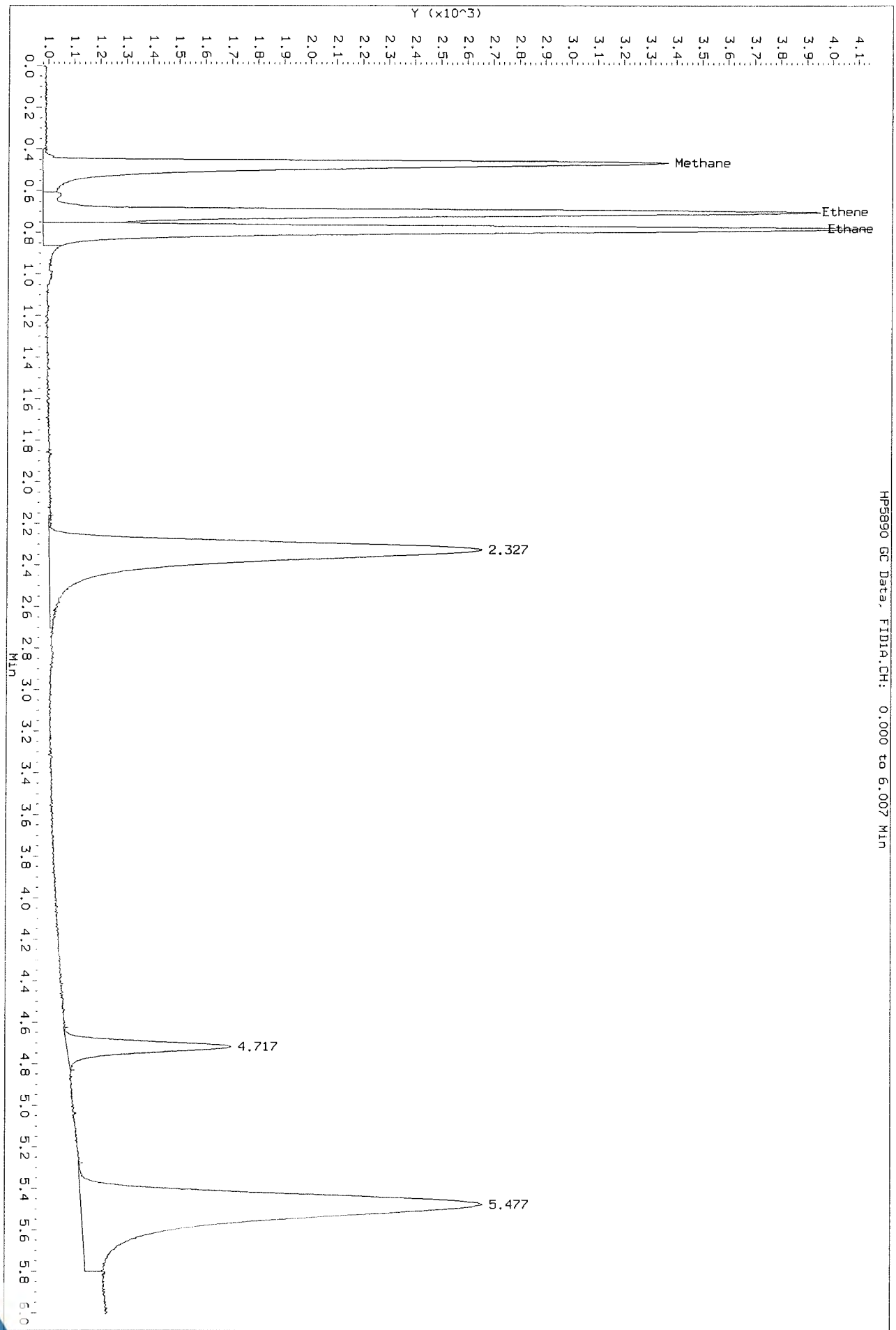
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\020.D
Injection Date: 26-OCT-2020 13:16
Instrument: FID-4.i
Client Sample ID: HS20101079-03MS
HP5890 GC Data, FID1A.CH: 0.000 to 6.007 Min
Y (x10^3)
Min
Methane
Ethene
2.327
4.717
5.477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Injection Date: 26-OCT-2020 13:16
Instrument: FID-4.i
Client Sample ID: HS20101079-03MS
HP5890 GC Data, FIDiA.CH: 0.000 to 6.007 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.327
4.717
5.477

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\021.D
Lab Smp Id: HS20101079-03MSD Client Smp ID: HS20101079-03MSD
Inj Date : 26-OCT-2020 13:34
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101079-03MSD;HS20101079-03MSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 21 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.460	0.466	-0.006	13001	13.3345	13.334(R)
2 Ethene	0.696	0.710	-0.014	15298	26.1165	26.116(RM)
3 Ethane	0.776	0.790	-0.014	18749	26.0587	26.058(RM)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\021.D

Date : 26-OCT-2020 13:34

Client ID: HS20101079-03MSD

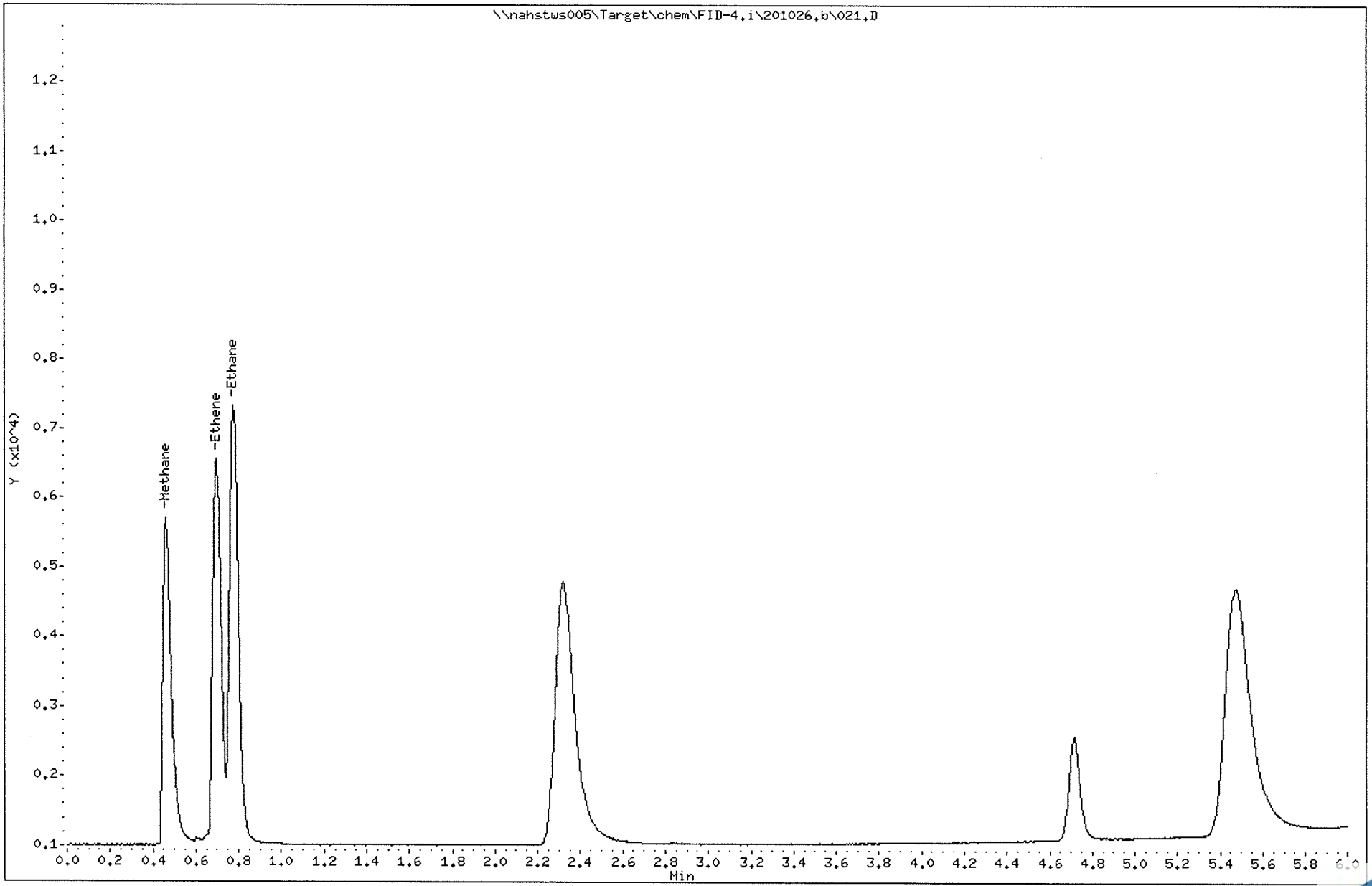
Sample Info: HS20101079-03MSD;HS20101079-03MSD

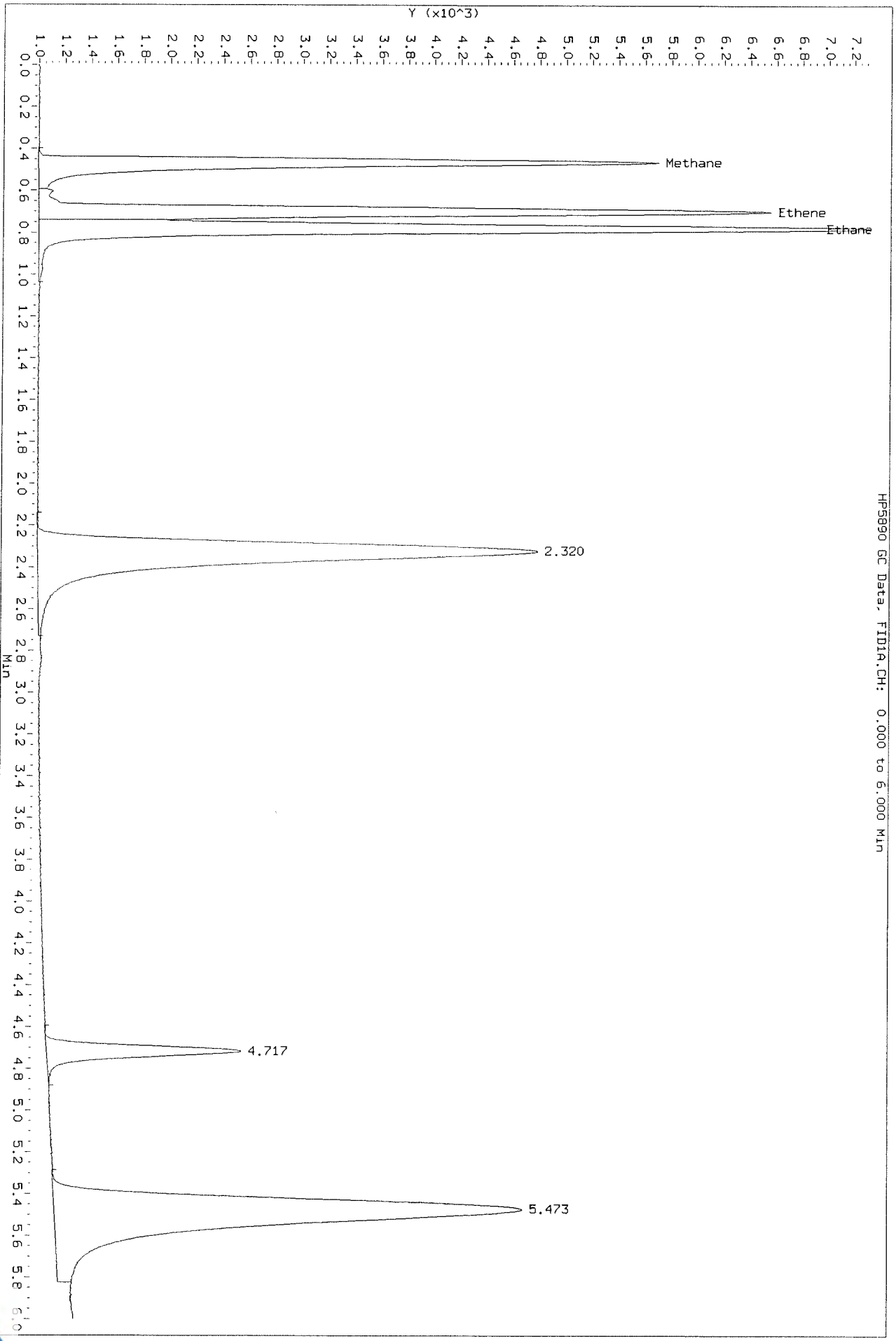
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL

Column diameter: 0.53

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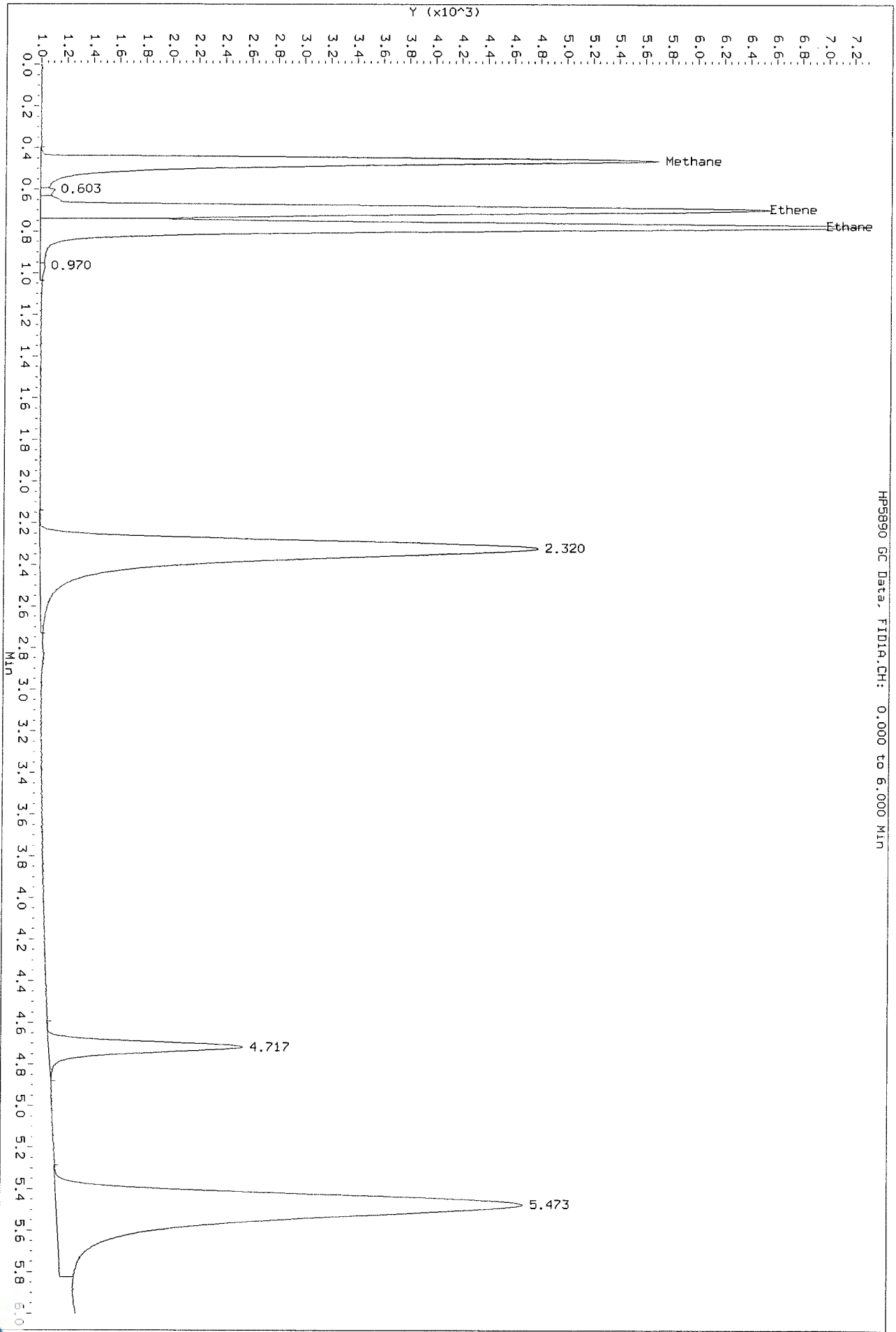
Injection Date: 26-OCT-2020 13:34
Instrument: FID-4.i
Client Sample ID: HS20101079-03MSD
HP5890 GC Data, FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.320
4.717
5.473


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\021.D
Injection Date: 26-OCT-2020 13:34
Instrument: FID-4.i
Client Sample ID: HS20101079-03MSD
HP5890 GC Data, FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
0.603
Ethene
Ethane
0.970
2.320
4.717
5.473

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\022.D Page 1
Report Date: 01-Dec-2020 12:23

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\022.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 13:42
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 22 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.463	0.463	0.000	8585	9.64700	8.805
2 Ethene	0.703	0.703	0.000	9849	16.8500	16.814
3 Ethane	0.783	0.783	0.000	13568	18.0430	18.857(M)

QC Flag Legend

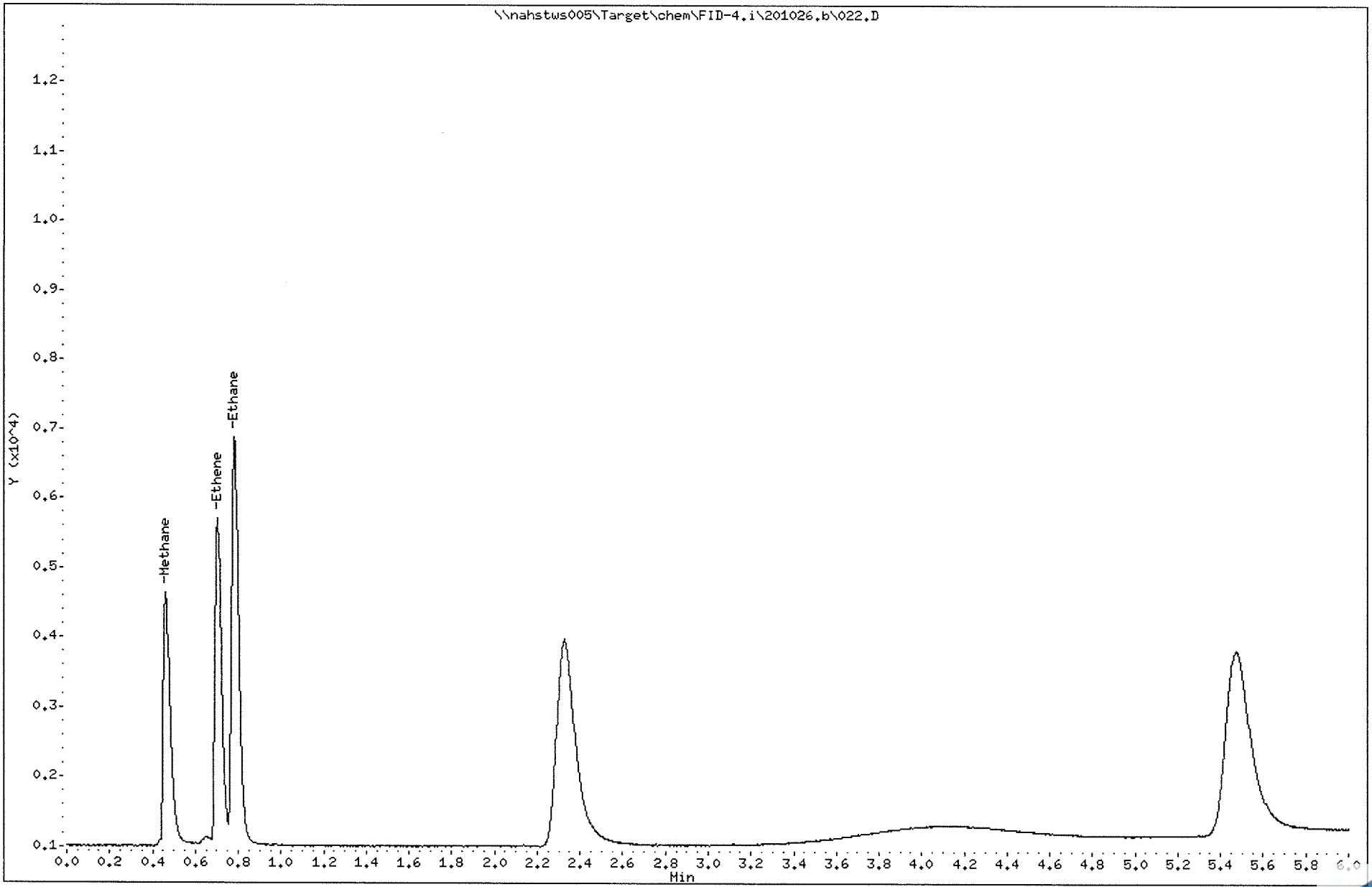
M - Compound response manually integrated.

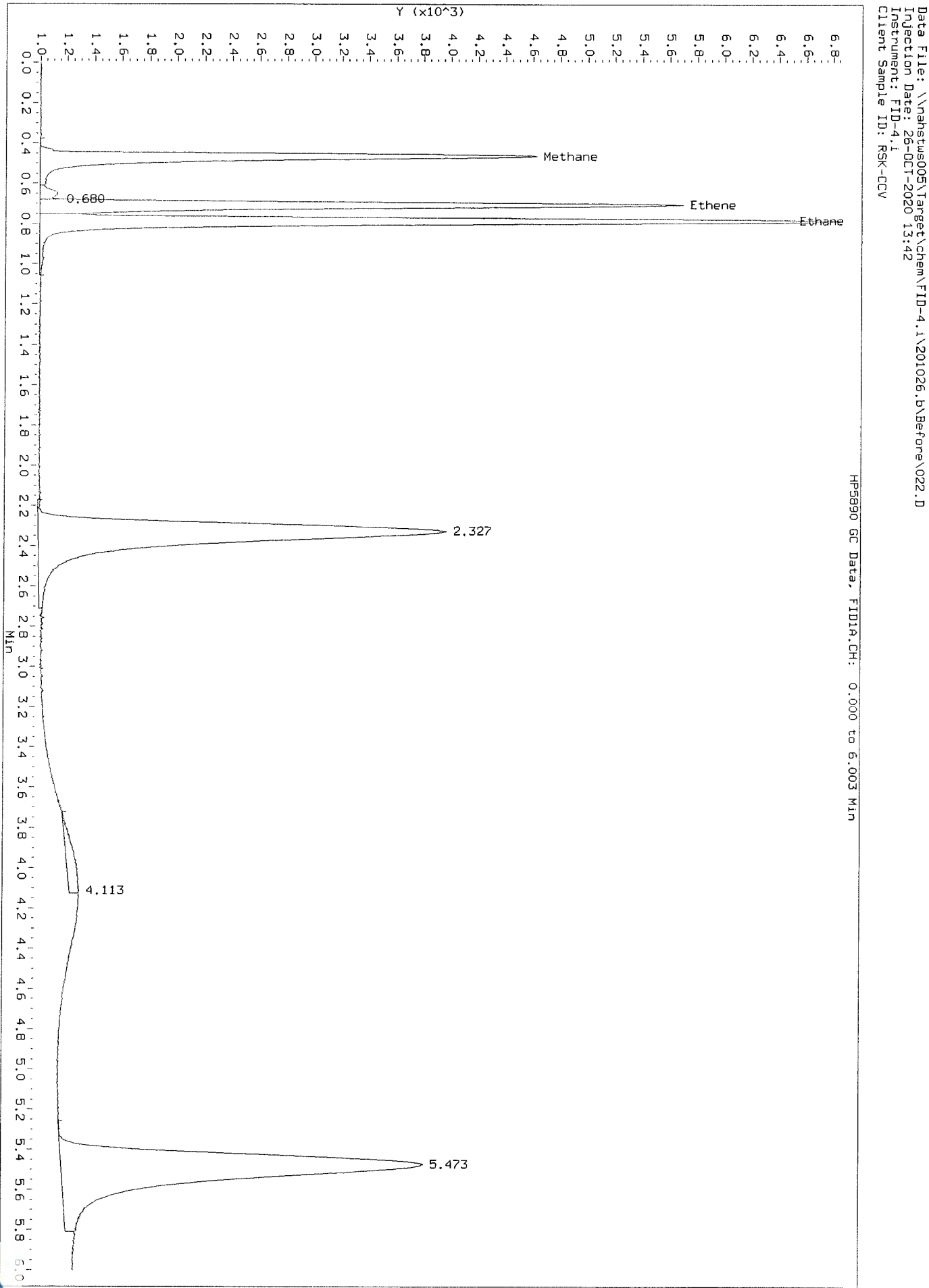
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\022.D
Date : 26-OCT-2020 13:42
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

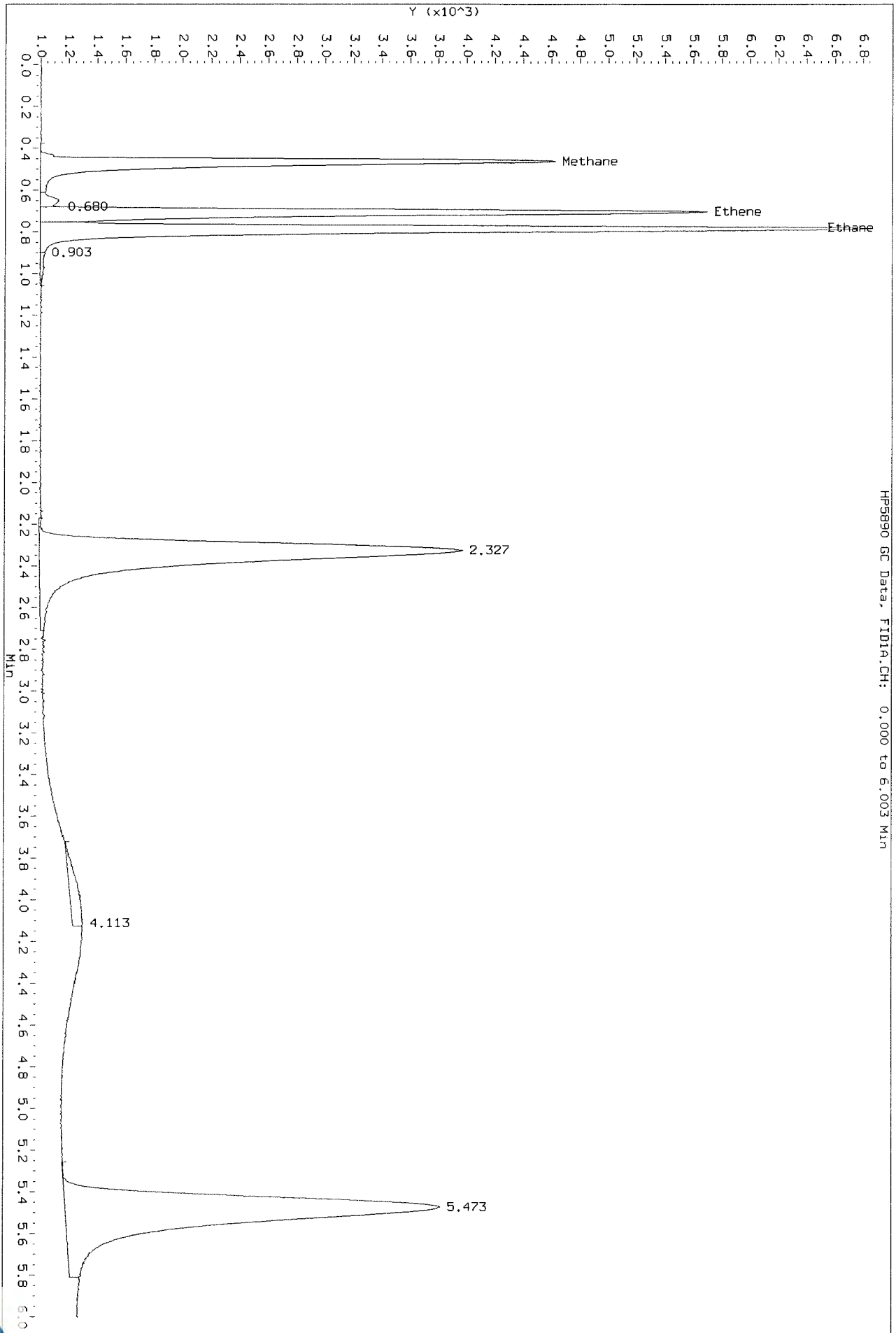
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\022.D
Injection Date: 26-OCT-2020 13:42
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
0.680
Ethene
Ethane
2.327
4.113
5.473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Injection Date: 26-OCT-2020 13:42
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
0.680
Ethene
Ethane
0.903
2.327
4.113
5.473

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\024.D Page 1
Report Date: 01-Dec-2020 12:30

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\024.D
Lab Smp Id: HS20101123-01 Client Smp ID: HS20101123-01
Inj Date : 26-OCT-2020 14:23
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-01;HS20101123-01
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:24 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.483	0.463	0.020	1227	1.25847	1.258
2 Ethene	0.683	0.703	-0.020	1177	2.00935	2.009(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\024.D

Date : 26-OCT-2020 14:23

Client ID: HS20101123-01

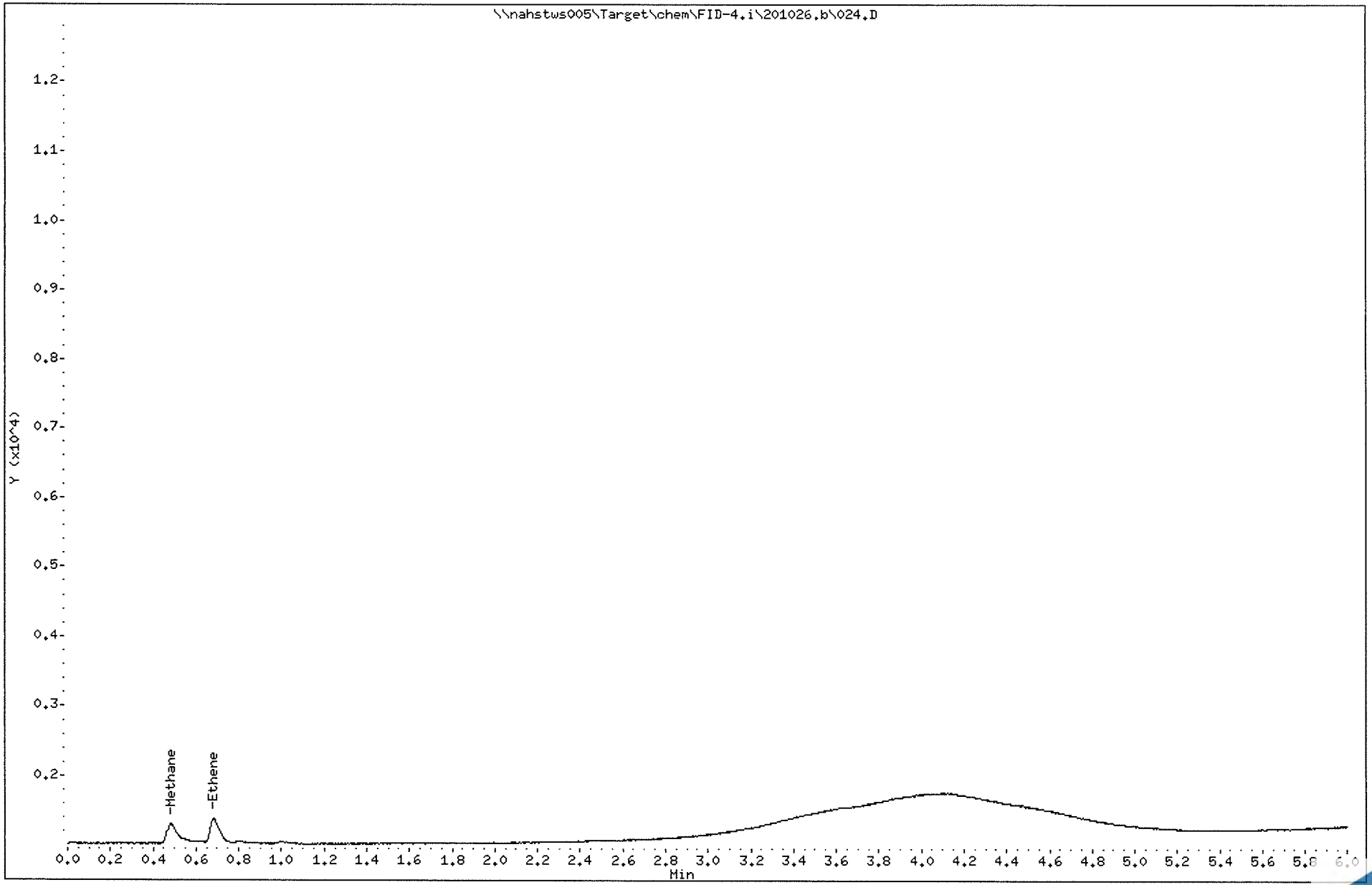
Instrument: FID-4.i

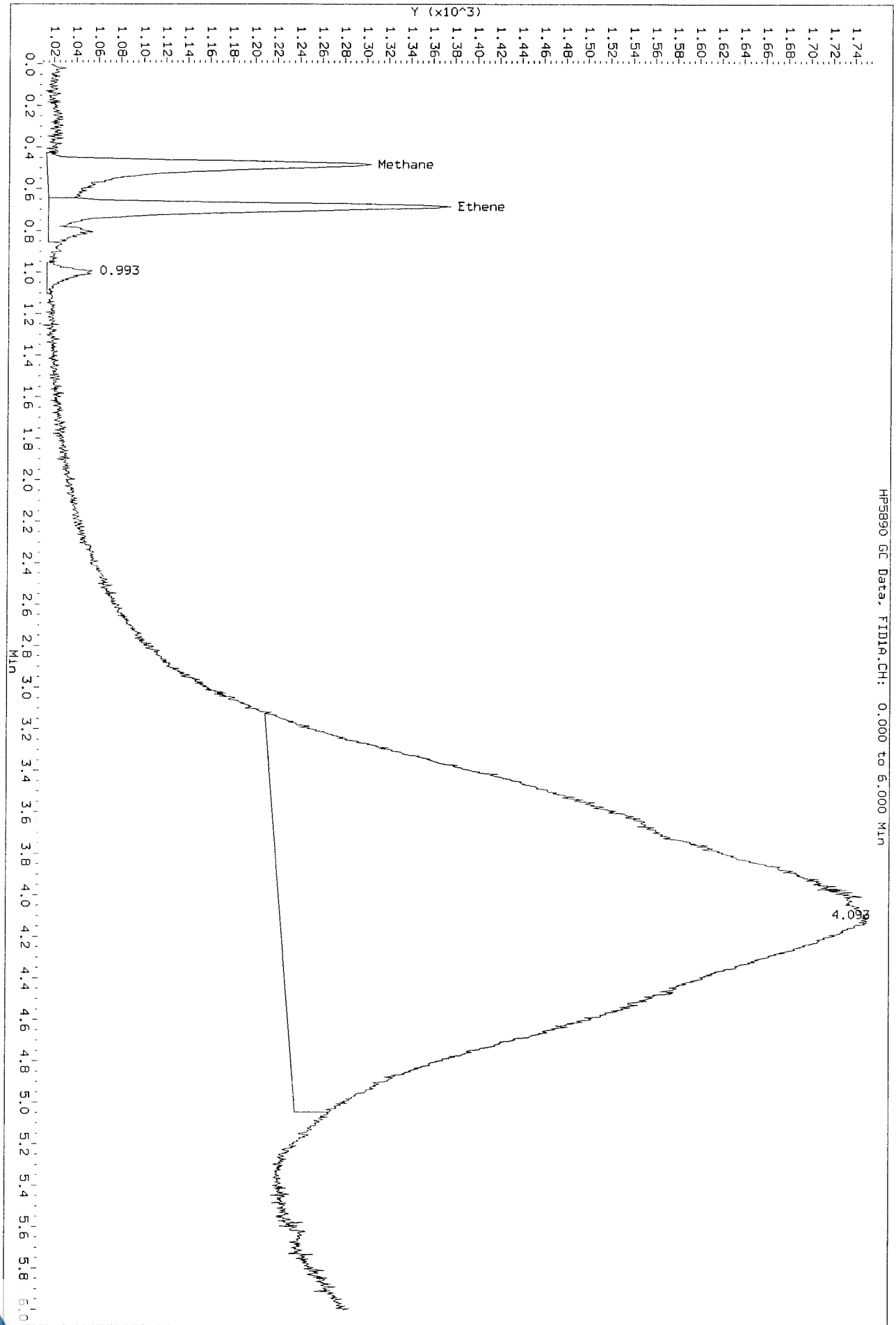
Sample Info: HS20101123-01;HS20101123-01

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53

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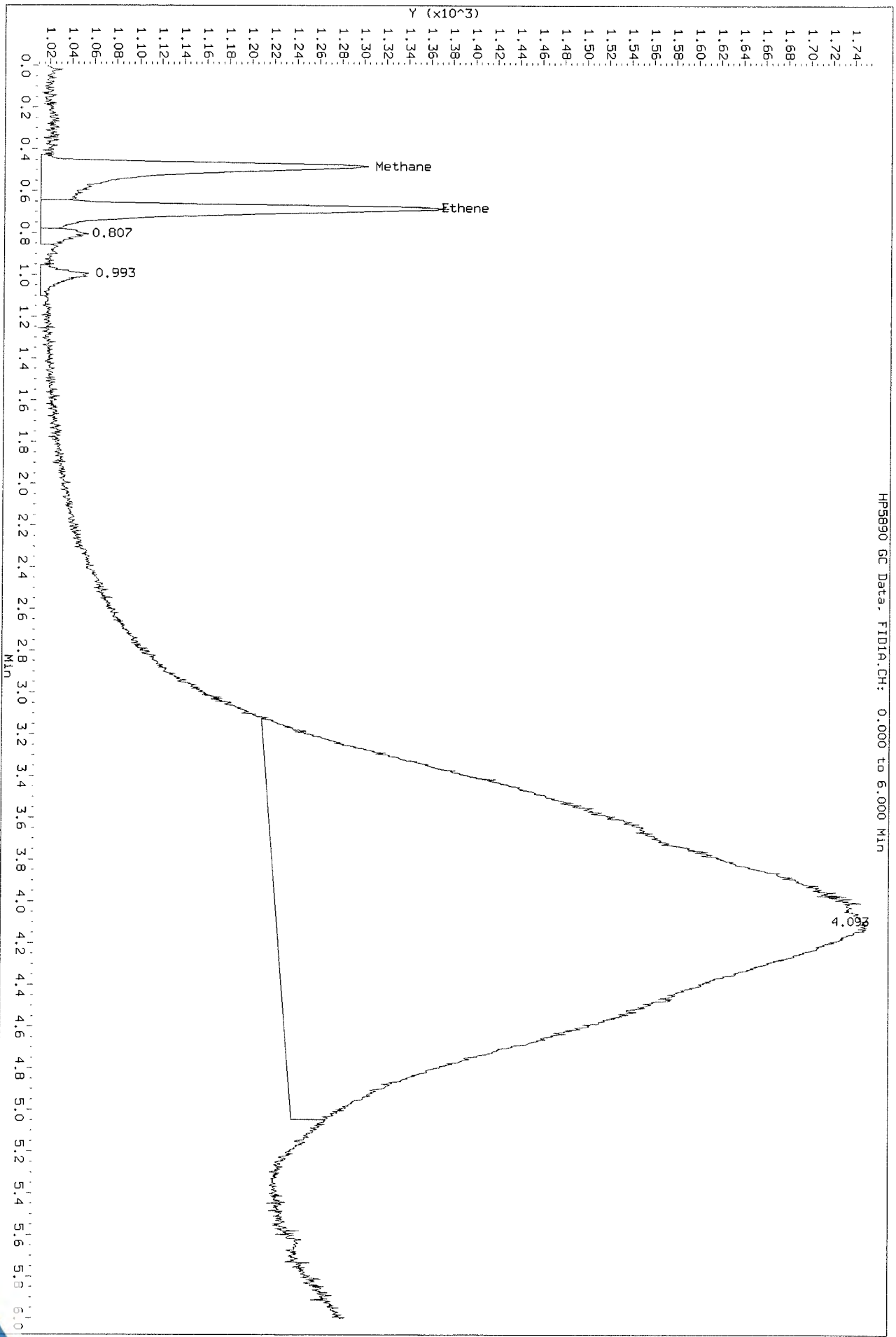
Injection Date: 26-OCT-2020 14:23
Instrument: FID-4.i
Client Sample ID: HS20101123-01
HP5890 GC Data, FID1A.CH; 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
Ethene
0.993
4.093


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\024.D
Injection Date: 26-OCT-2020 14:23
Instrument: FID-4.i
Client Sample ID: H520101123-01
HP5890 GC Data. FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
Ethene
0.807
0.993
4.093

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\025.D
Lab Smp Id: HS20101123-01MS Client Smp ID: HS20101123-01MS
Inj Date : 26-OCT-2020 14:31
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-01MS;HS20101123-01MS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 25 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.463	0.463	0.000	12791	13.1191	13.119(R)
2 Ethene	0.700	0.703	-0.003	15309	26.1353	26.135(RM)
3 Ethane	0.780	0.783	-0.003	17626	24.4979	24.497(R)

QC Flag Legend

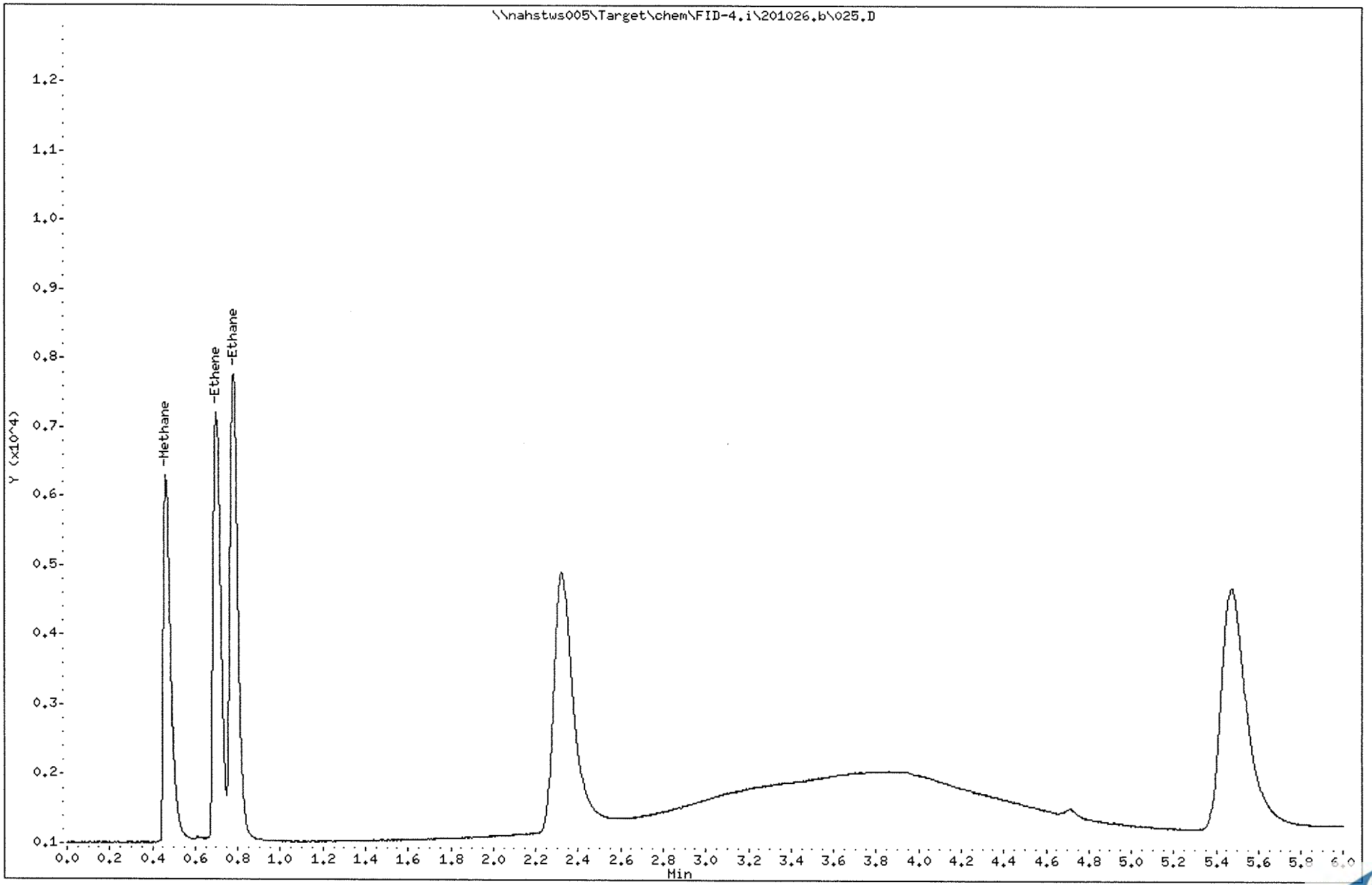
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

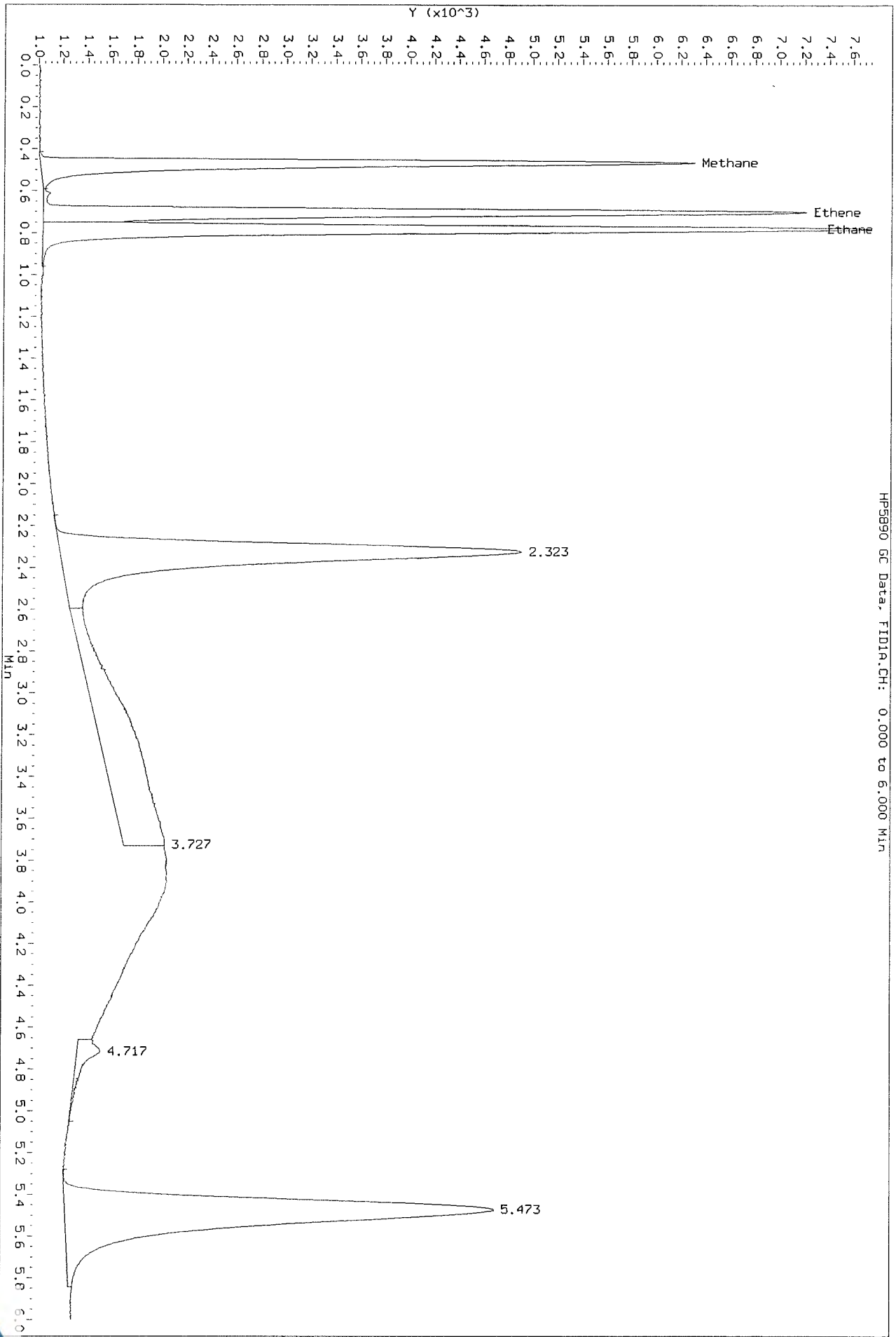
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\025.D
Date : 26-OCT-2020 14:31
Client ID: HS20101123-01MS
Sample Info: HS20101123-01MS;HS20101123-01MS

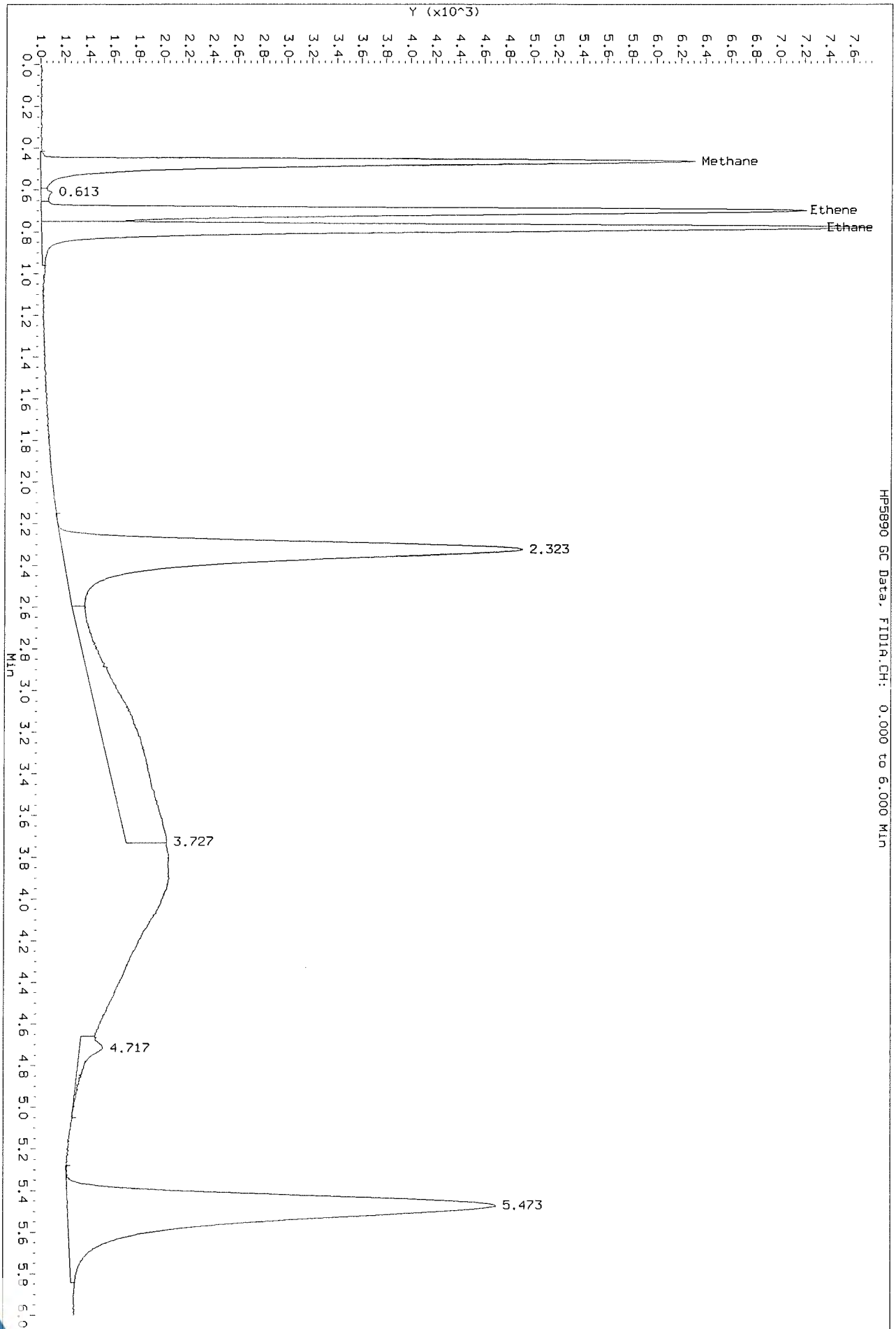
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\025.D
Injection Date: 26-OCT-2020 14:31
Instrument: FID-4.i
Client Sample ID: HS20101123-01MS
HP5890 GC Data, FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.323
3.727
4.717
5.473


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\025.D
Injection Date: 26-OCT-2020 14:31
Instrument: FID-4.i
Client Sample ID: HS20101123-01MS
HP5890 GC Data. FID1A.CH: 0.000 to 6.000 Min
Y (x10^3)
Min
Methane
0.613
Ethene
Ethane
2.323
3.727
4.717
5.473

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\026.D
Lab Smp Id: HS20101123-01MSD Client Smp ID: HS20101123-01-05MSD
Inj Date : 26-OCT-2020 14:49
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-01MSD;HS20101123-01-05MSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 26 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.460	0.463	-0.003	11977	12.2842	12.284(R)
2 Ethene	0.693	0.703	-0.010	15627	26.6781	26.678(RM)
3 Ethane	0.773	0.783	-0.010	18077	25.1248	25.124(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\026.D

Date : 26-OCT-2020 14:49

Client ID: HS20101123-01-05MSD

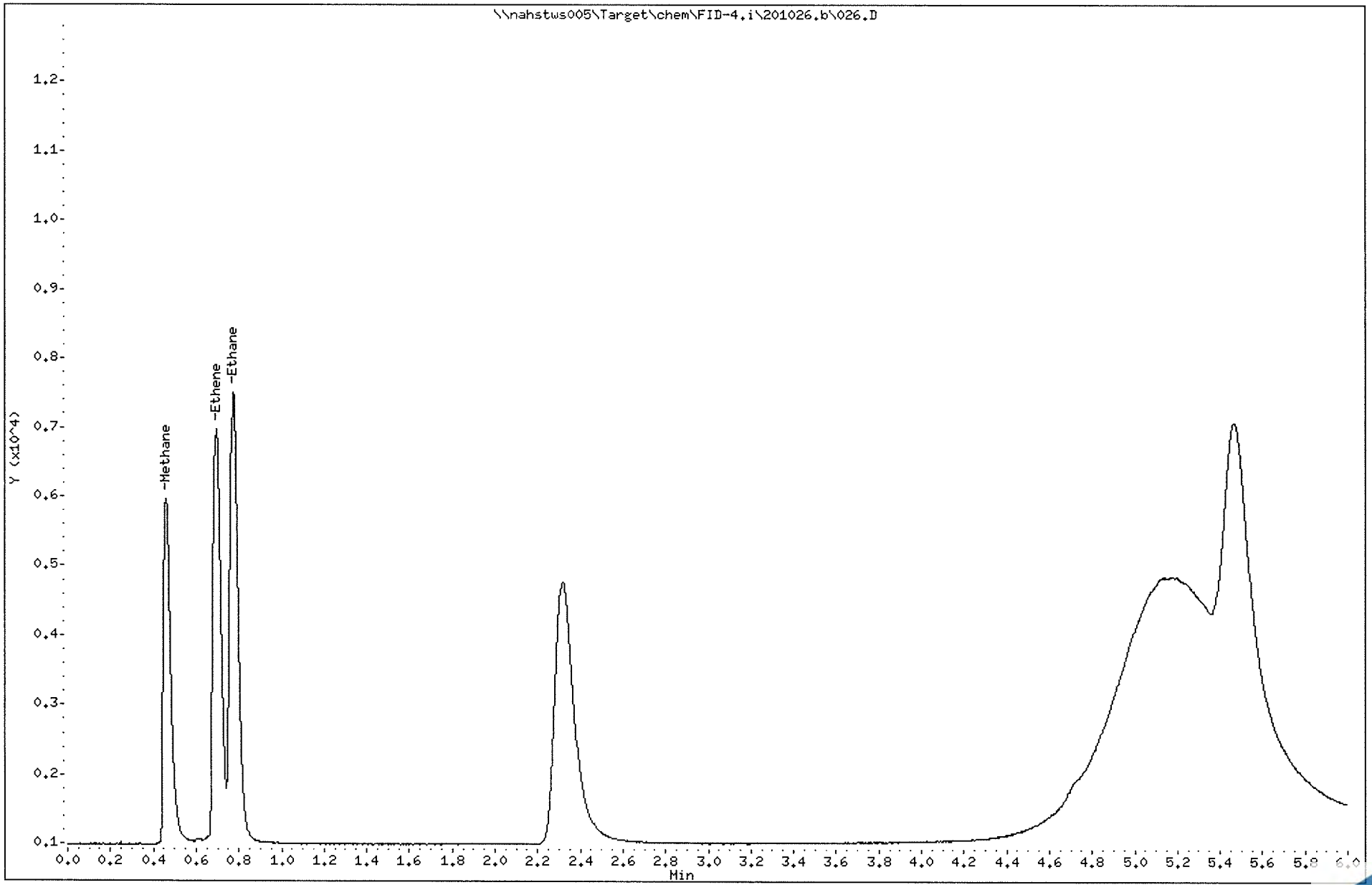
Instrument: FID-4.i

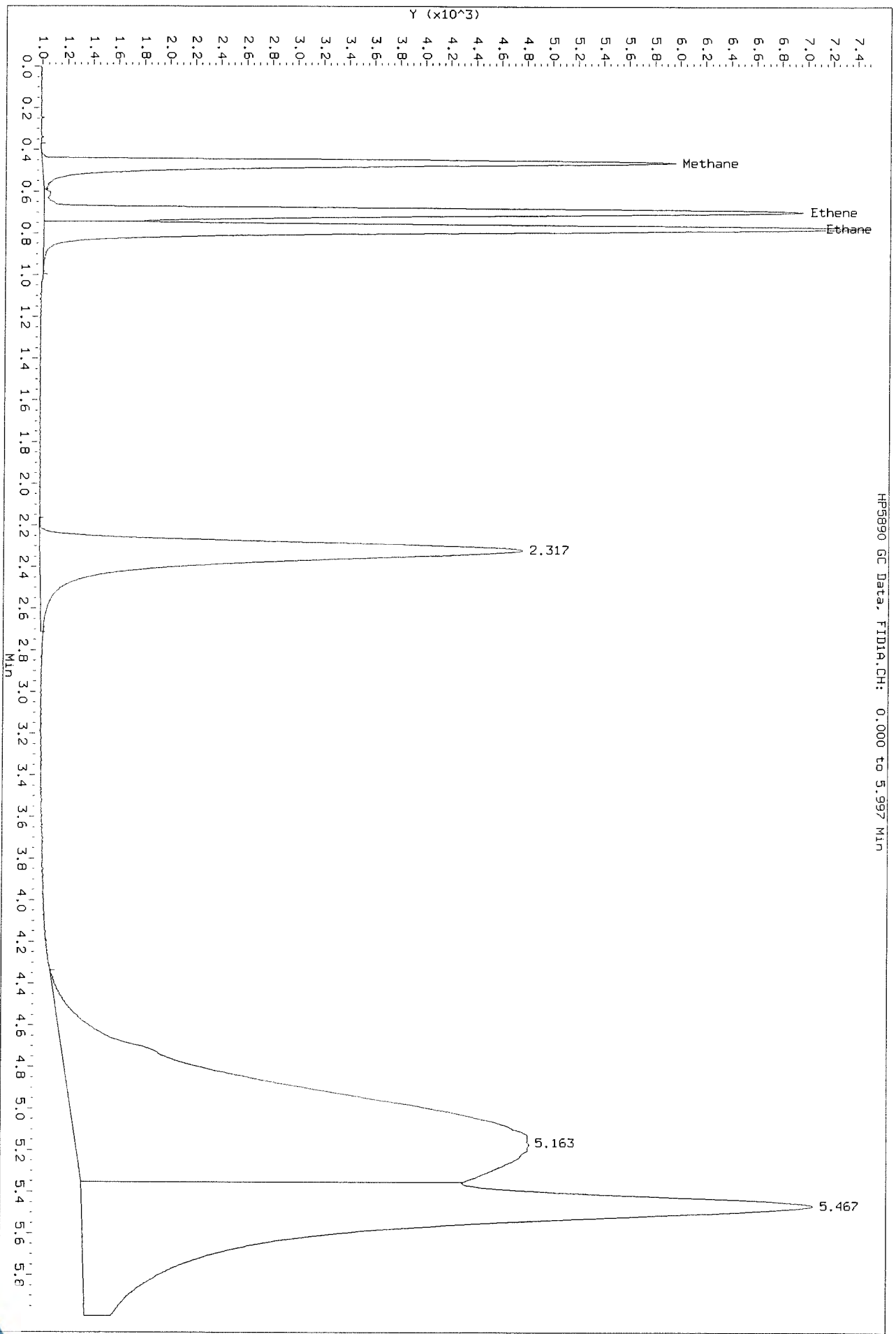
Sample Info: HS20101123-01MSD;HS20101123-01-05MSD

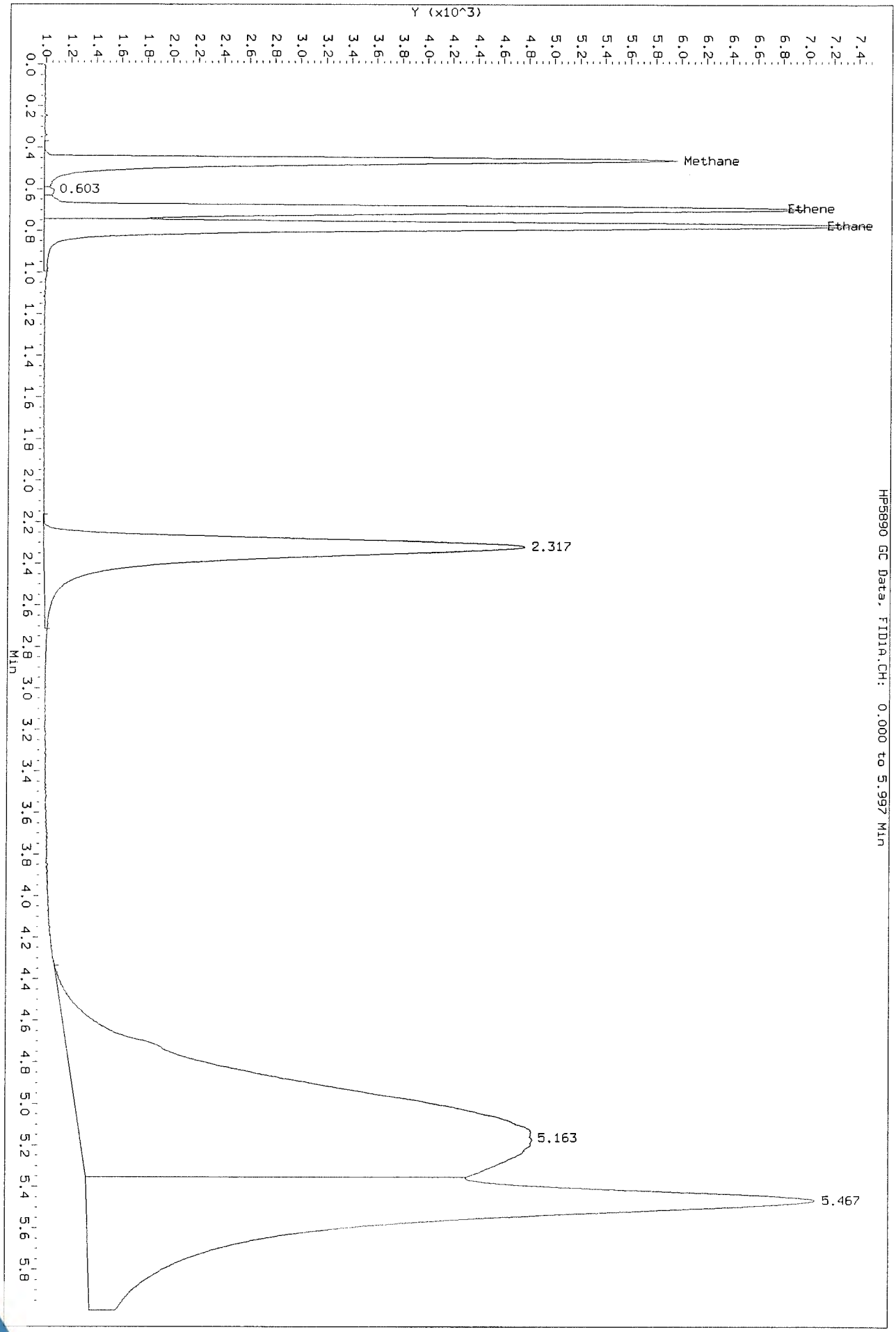
Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\026.D
Injection Date: 26-OCT-2020 14:49
Instrument: FID-4.i
Client Sample ID: HS201101123-01-05MSD
HP5890 GC Data, FID1A.CH: 0.000 to 5.997 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.317
5.163
5.467


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\026.D
Injection Date: 26-OCT-2020 14:49
Instrument: FID-4.i
Client Sample ID: HS20101123-01-05MSD
HP5890 GC Data, FID1A.CH: 0.000 to 5.997 Min
Y (x10^3)
Min
Methane
0.603
Ethene
Ethane
2.317
5.163
5.467

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\027.D
Lab Smp Id: HS20101123-04 Client Smp ID: HS20101123-04
Inj Date : 26-OCT-2020 15:03
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-04;HS20101123-04
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:30 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 27
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.460	0.463	-0.003	2052794	2105.45	2105.446(A)
2 Ethene	0.690	0.703	-0.013	18112	30.9205	30.920(M)
3 Ethane	0.763	0.783	-0.020	2879	4.00145	4.001(M)

QC Flag Legend

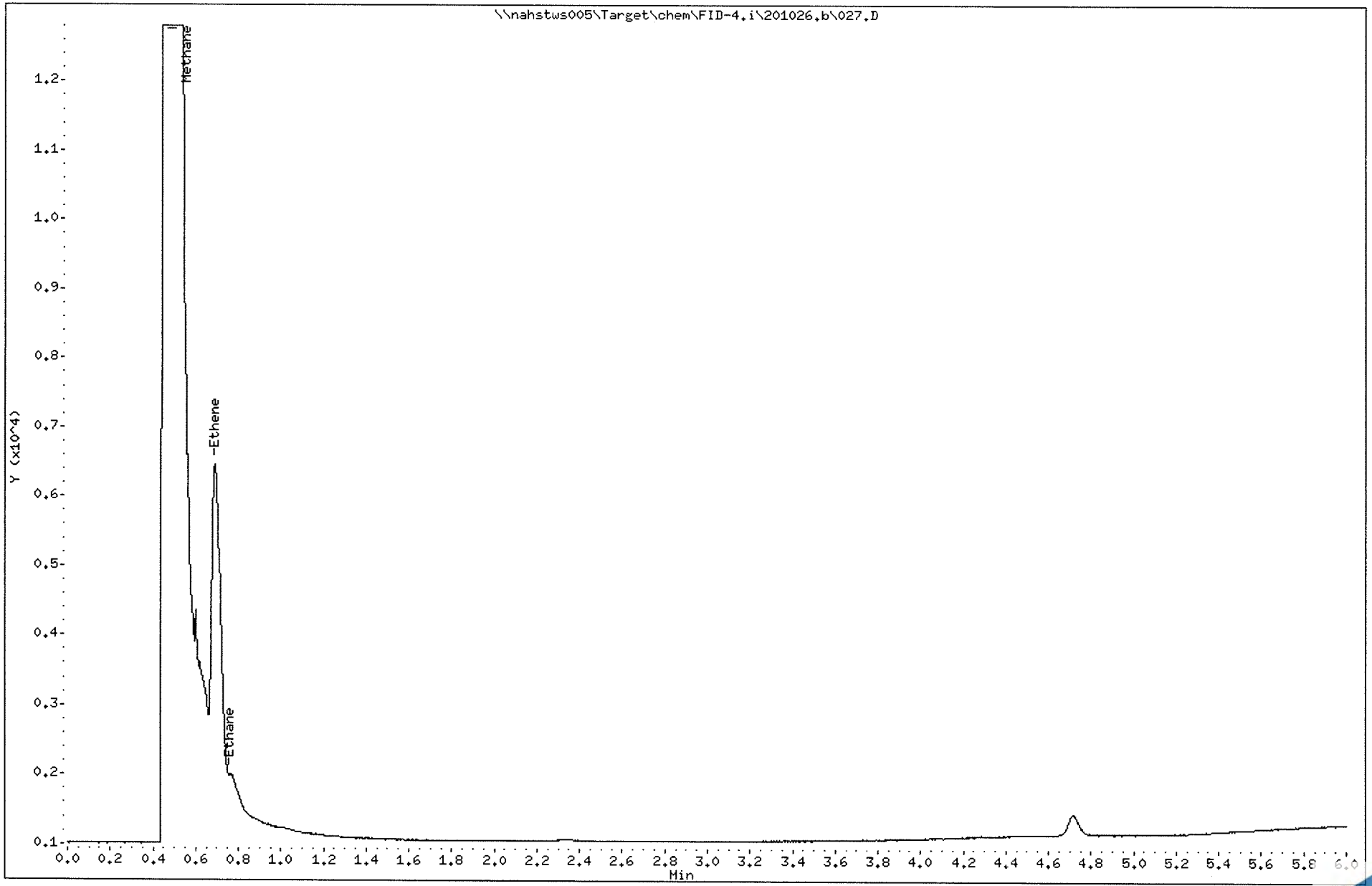
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

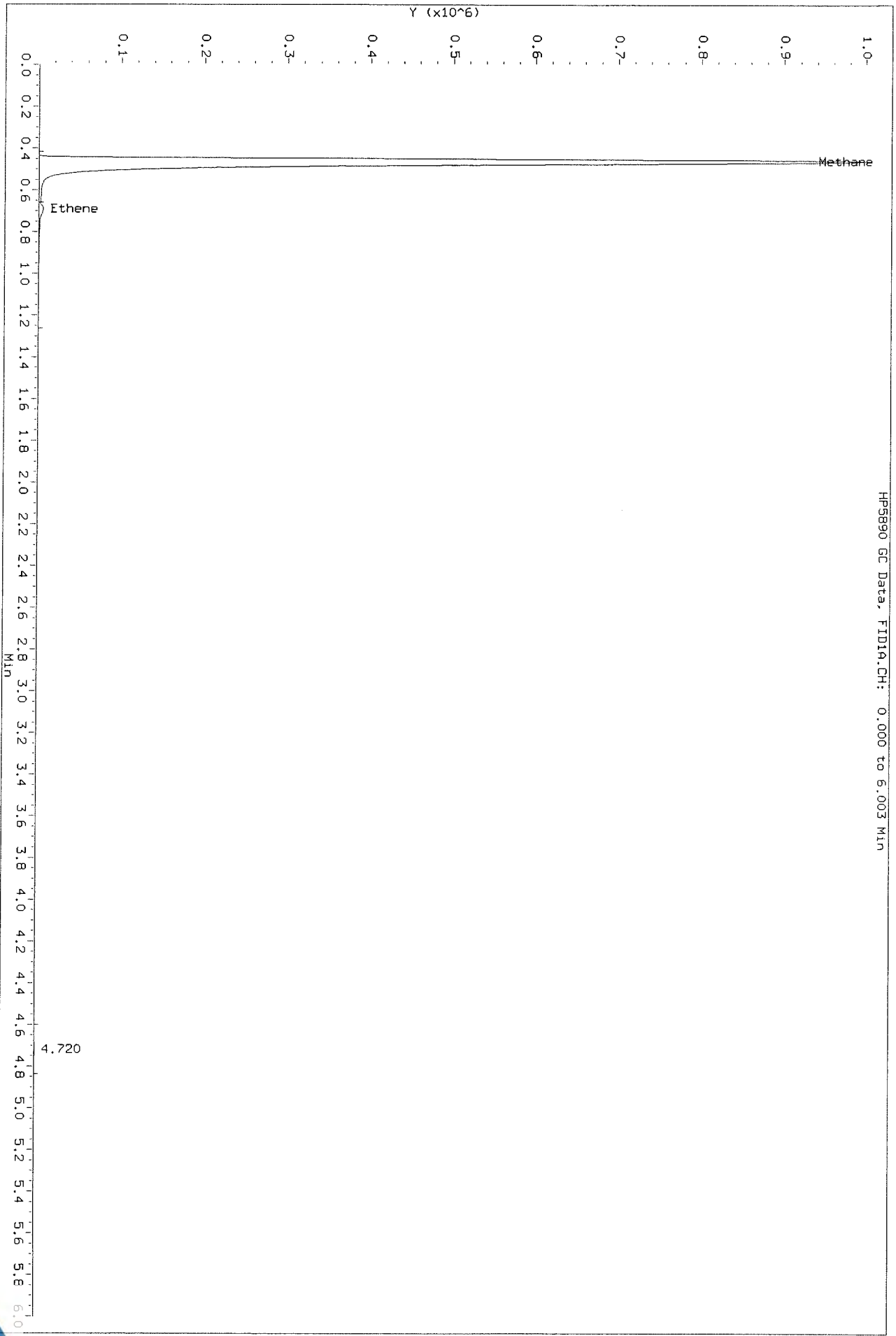
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\027.D
Date : 26-OCT-2020 15:03
Client ID: HS20101123-04
Sample Info: HS20101123-04;HS20101123-04

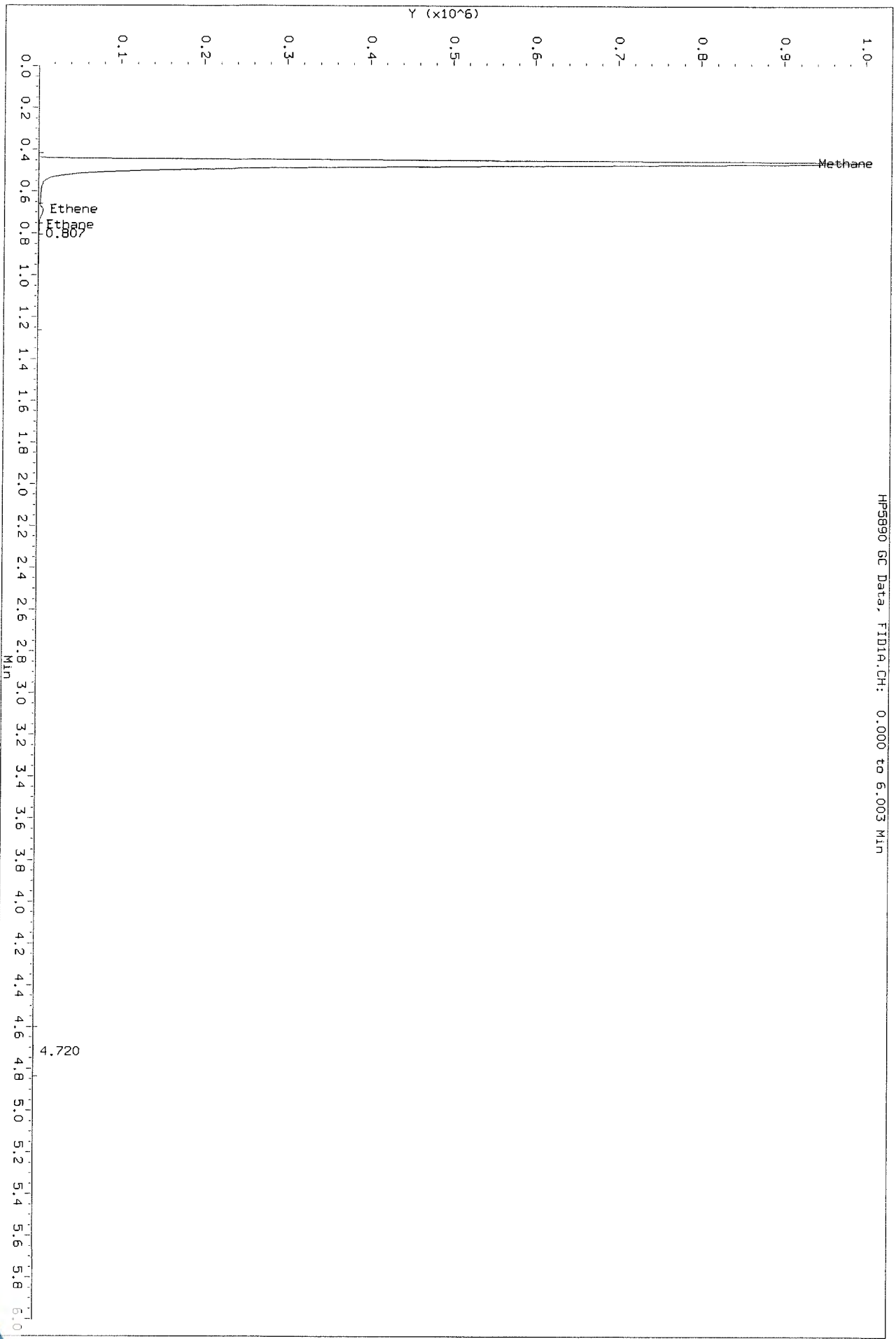
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\027.D
Injection Date: 26-OCT-2020 15:03
Instrument: FID-4.i
Client Sample ID: HS20101123-04
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^6)
Methane
Ethene
4.720
Min


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\027.D
Injection Date: 26-OCT-2020 15:03
Instrument: FID-4.i
Client Sample ID: HS20101123-04
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^6)
Methane
Ethene
Ethane
0.807
4.720
Min

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\028.D
Lab Smp Id: HS20101123-09 Client Smp ID: HS20101123-09
Inj Date : 26-OCT-2020 15:12
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-09;HS20101123-09
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:30 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
1 Methane	0.460	0.463	-0.003	9151	9.38571	9.385
2 Ethene	0.693	0.703	-0.010	903	1.54159	1.541(M)

QC Flag Legend

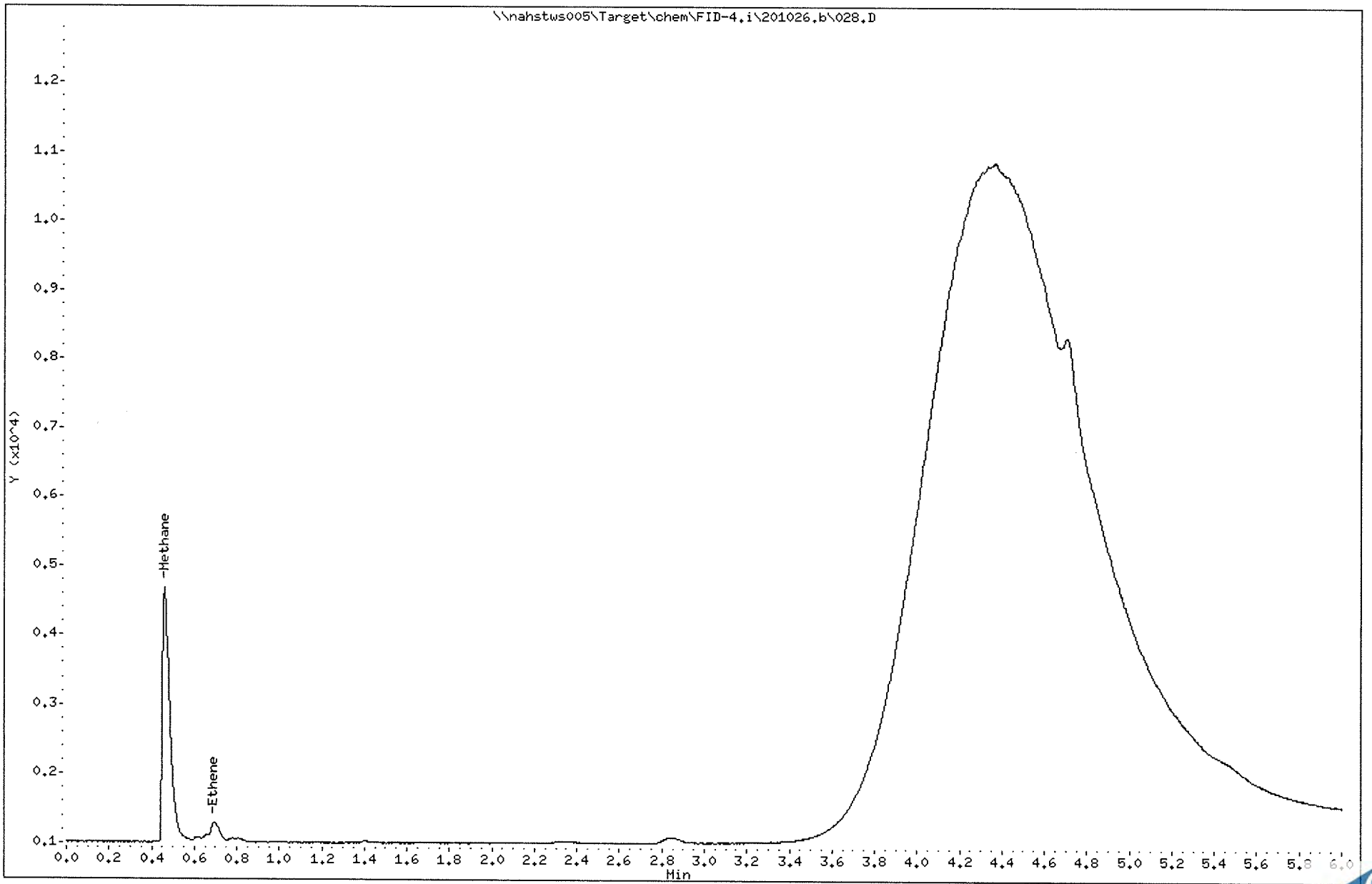
M - Compound response manually integrated.

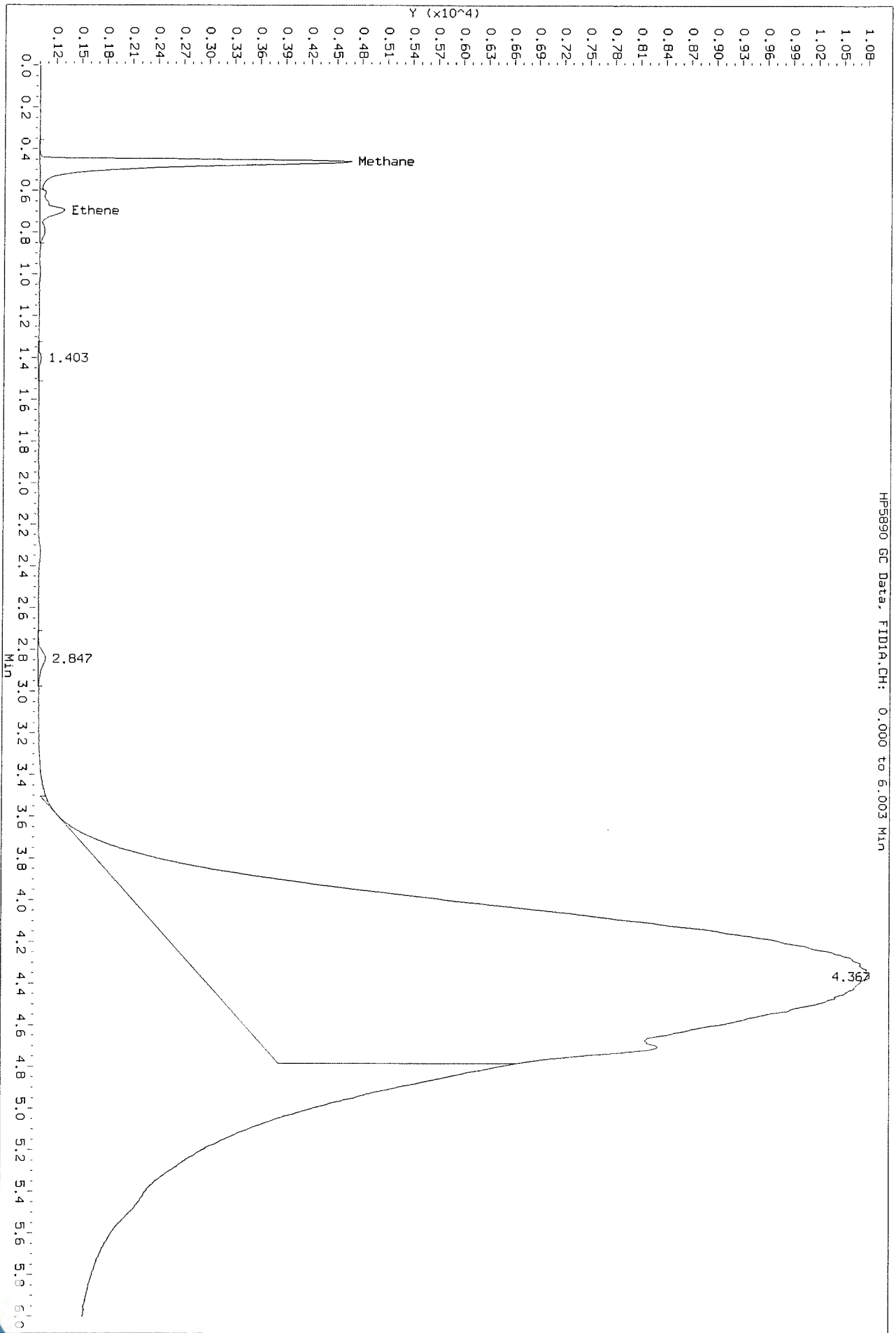
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\028.D
Date : 26-OCT-2020 15:12
Client ID: HS20101123-09
Sample Info: HS20101123-09;HS20101123-09

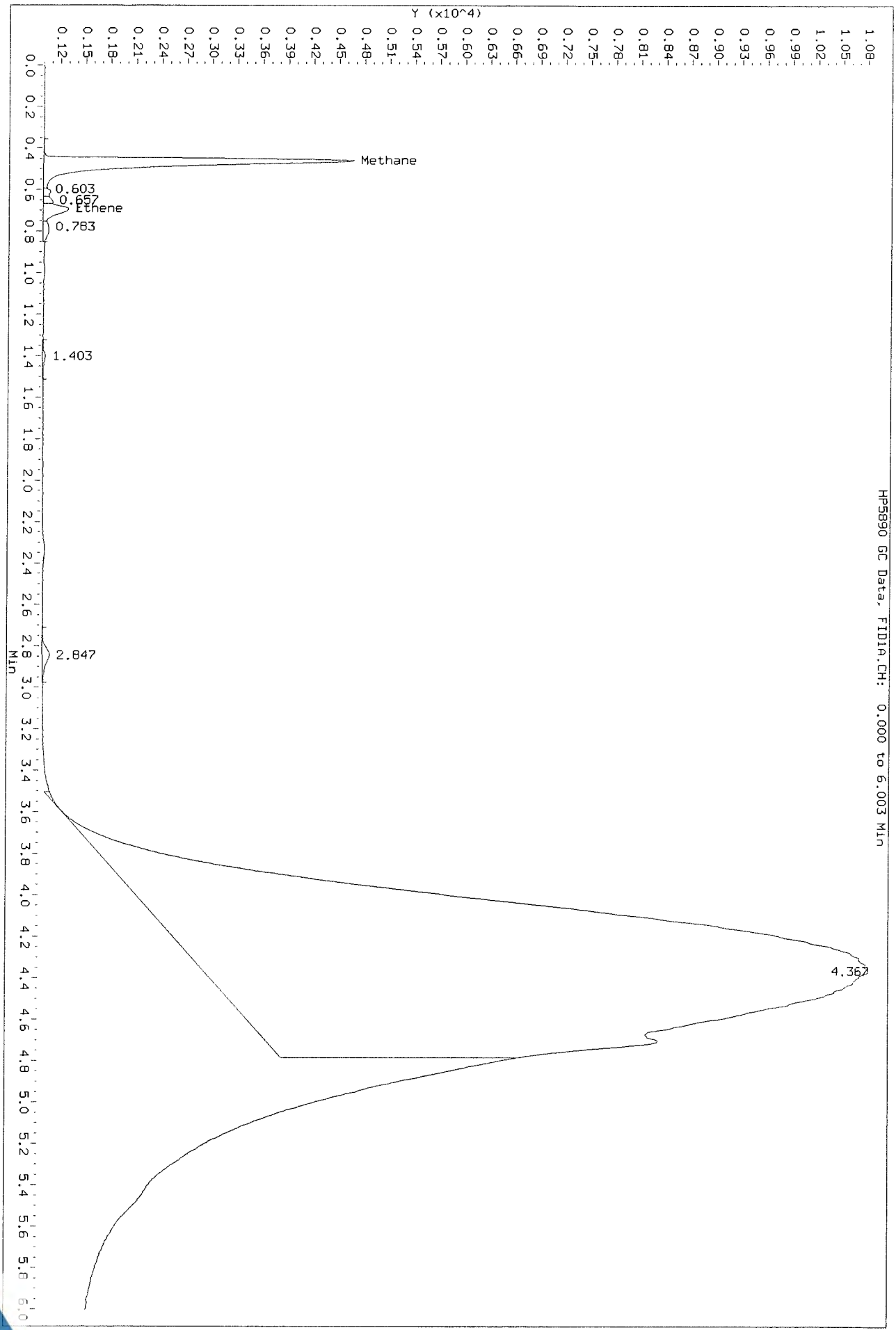
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53




Data File: \\nahstws005\Target\Chem\FID-4.i\201026.b\Before\028.D
Injection Date: 26-OCT-2020 15:12
Instrument: FID-4.i
Client Sample ID: HS20101123-09
HP5890 GC Data, FIDiA.CH: 0.000 to 6.003 Min
Y (x10^4)
Min
Methane
Ethene
1.403
2.847
4.367


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\028.D
Injection Date: 26-OCT-2020 15:12
Instrument: FID-4.i
Client Sample ID: HS20101123-09
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^4)
Min
Methane
0.603
0.657
Ethene
0.783
1.403
2.847
4.362

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\029.D
Lab Smp Id: HS20101123-04 Client Smp ID: HS20101123-04
Inj Date : 26-OCT-2020 15:21
Operator : PL Inst ID: FID-4.i
Smp Info : HS20101123-04;HS20101123-04
Misc Info : ;1;0;100
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:30 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 29
Dil Factor: 100.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

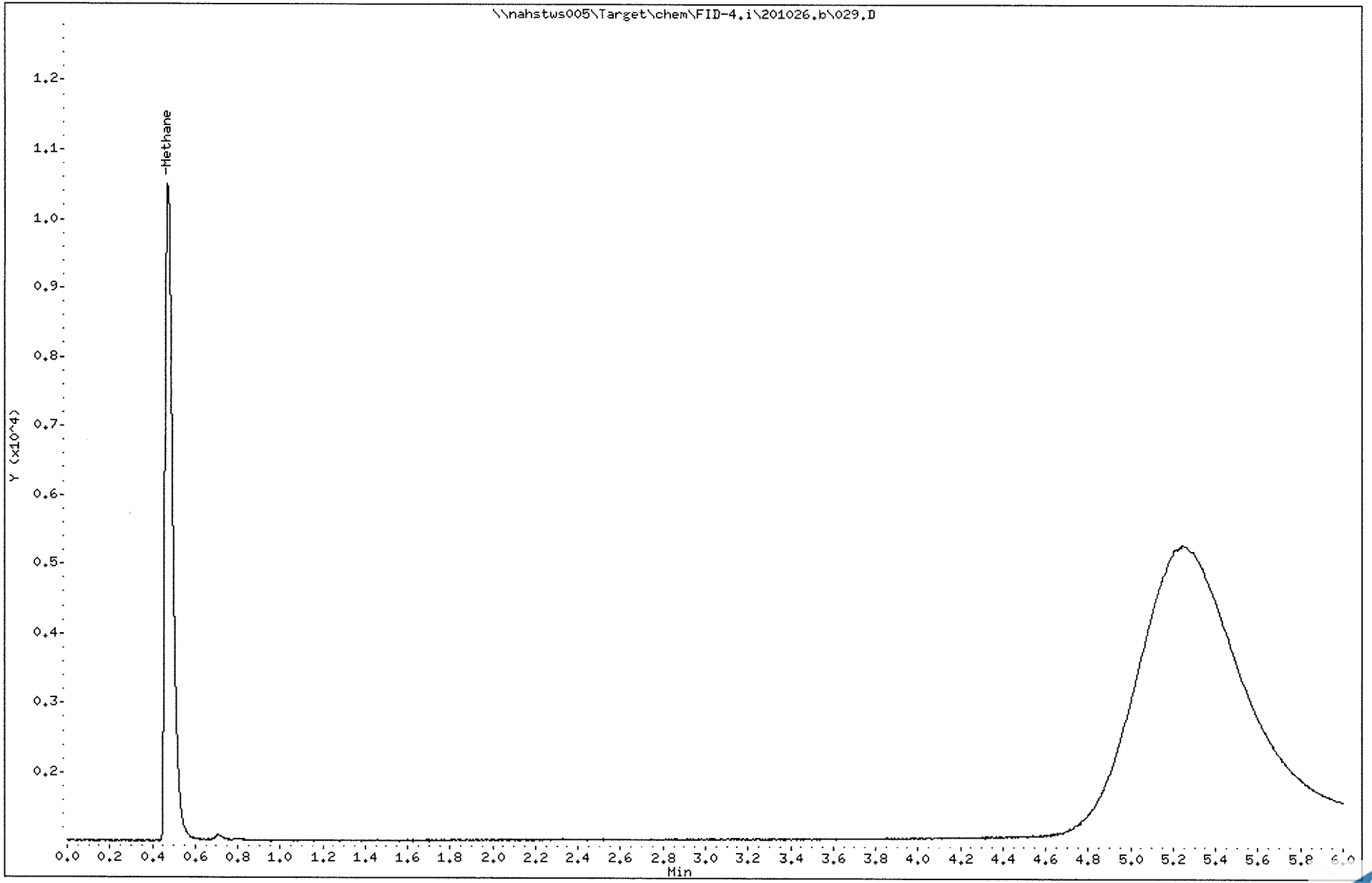
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)
1 Methane	0.470	0.463	0.007	23437	24.0381	2403.813

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\029.D
Date : 26-OCT-2020 15:21
Client ID: HS20101123-04
Sample Info: HS20101123-04;HS20101123-04

Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\201026.b\030.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 26-OCT-2020 15:32
Operator : PL Inst ID: FID-4.i
Smp Info : RSK-CCV;RSK-CCV;2;4
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\201026.b\RSKNI3.m
Meth Date : 01-Dec-2020 12:23 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 30 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.463	0.463	0.000	8861	9.64700	9.088
2 Ethene	0.703	0.703	0.000	9948	16.8500	16.983(M)
3 Ethane	0.783	0.783	0.000	13249	18.0430	18.414(M)

QC Flag Legend

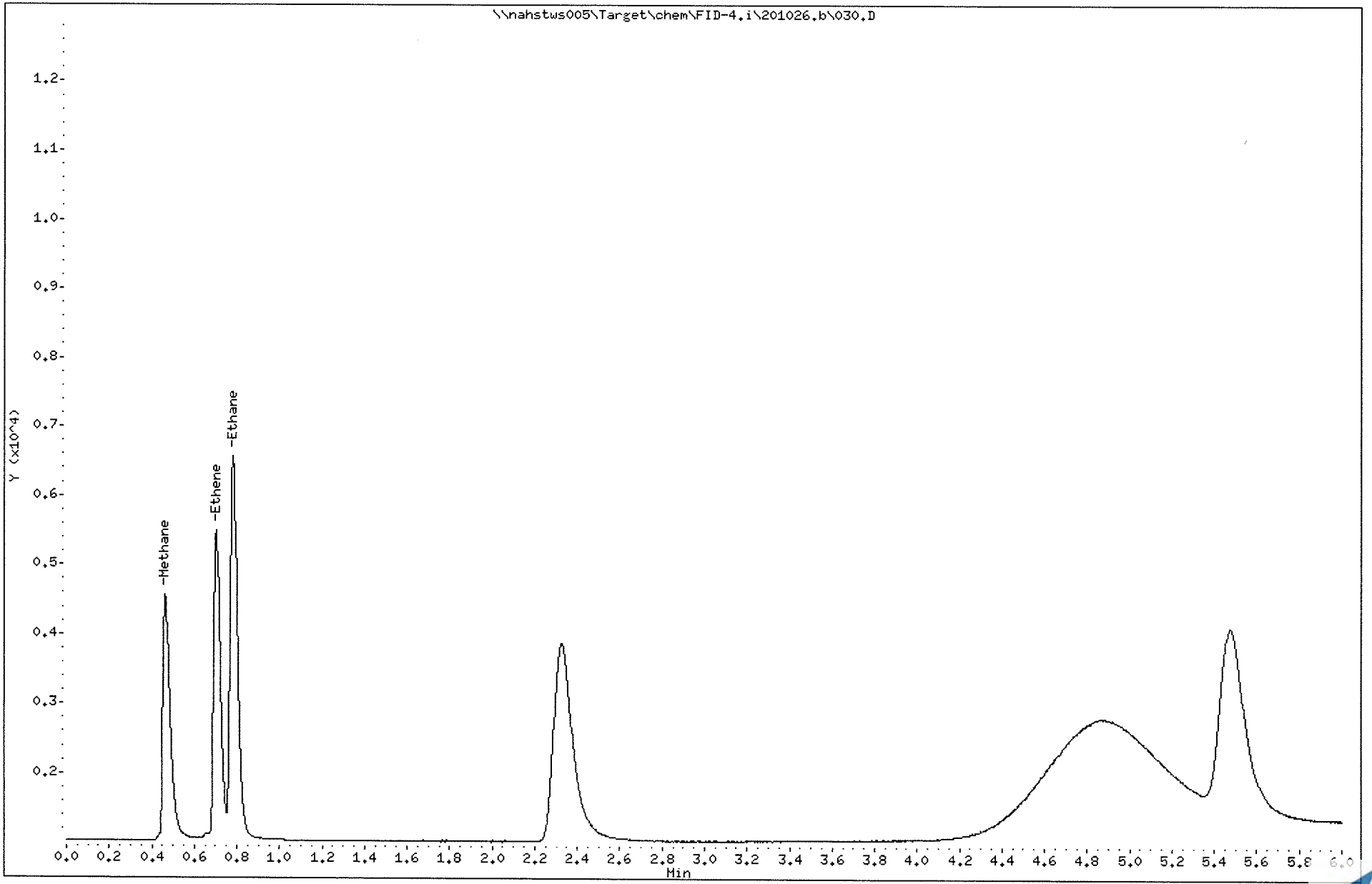
M - Compound response manually integrated.

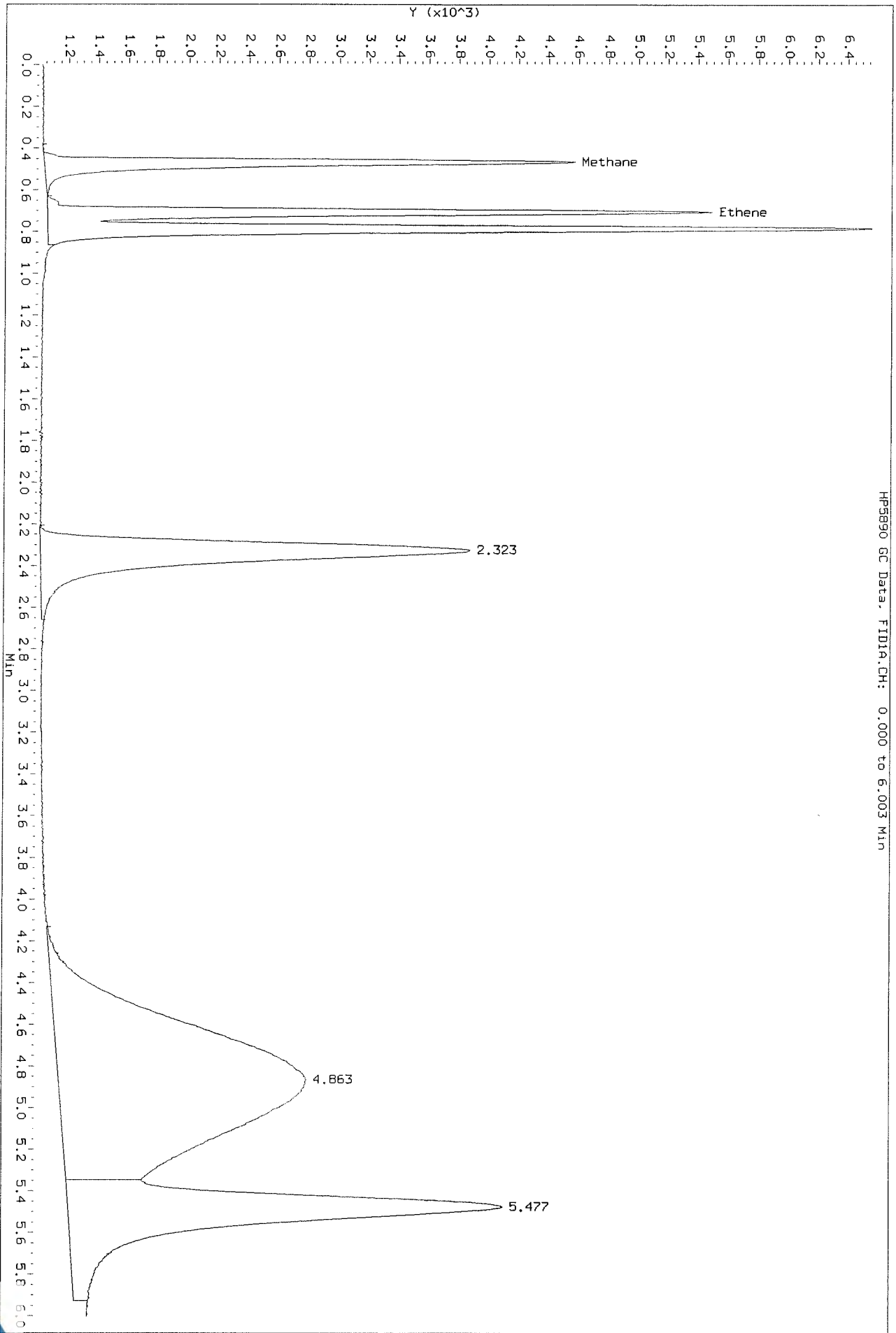
Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\030.D
Date : 26-OCT-2020 15:32
Client ID: RSK-CCV
Sample Info: RSK-CCV;RSK-CCV;2;4

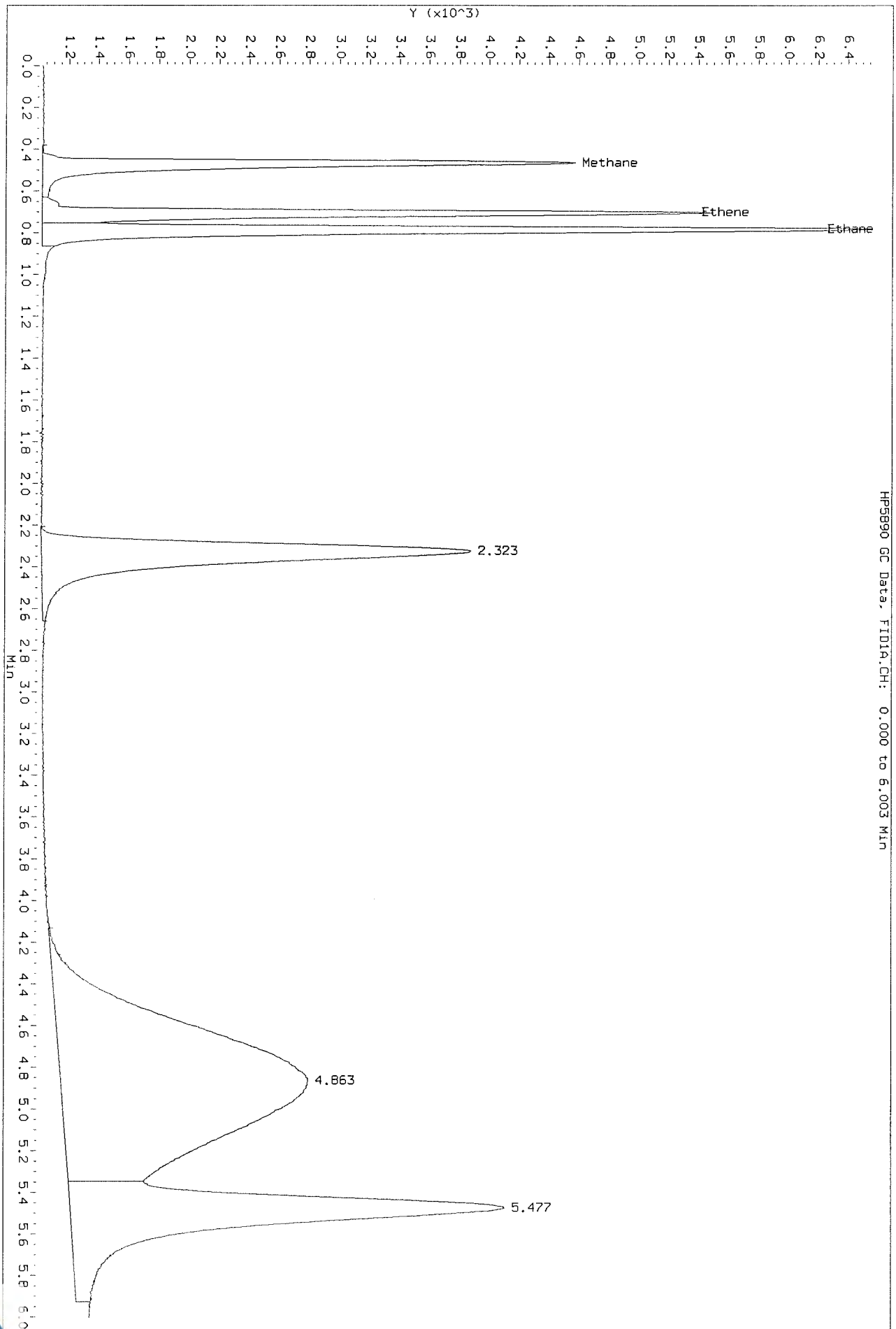
Column phase: Rtx-PLOT

Instrument: FID-4.i

Operator: PL
Column diameter: 0.53



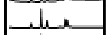
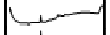

Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\Before\030.D
Injection Date: 26-OCT-2020 15:32
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data. FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
2.323
4.863
5.477


Data File: \\nahstws005\Target\chem\FID-4.i\201026.b\030.D
Injection Date: 26-OCT-2020 15:32
Instrument: FID-4.i
Client Sample ID: RSK-CCV
HP5890 GC Data, FID1A.CH: 0.000 to 6.003 Min
Y (x10^3)
Min
Methane
Ethene
Ethane
2.323
4.863
5.477

HS20101123 Wet Chem Raw Data (9056_anions_W)

ALS WO# HS20101123

Sequence: 102220
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	me	Status
	STD1		Calibration	BD1	1.00	1	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD2		Calibration	BD2	1.00	2	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD3		Calibration	BD3	1.00	3	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD4		Calibration	BD4	1.00	4	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD5		Calibration	BD5	1.00	5	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD6		Calibration	BD6	1.00	6	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICV		Unknown	BD7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICB		Unknown	BD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-01		Unknown	GD5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-04		Unknown	GD6	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-09DF5		Unknown	GD7	5.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-01MS		Unknown	GD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-01MSD		Unknown	GE1	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	MBLK-102220		Unknown	BA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	LCS-102220		Unknown	BA8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished

Sequence: 102220
Last Update Operator: alshs.nouser

Inject Time
8/11/2020 10:46:45 AM -05:00
8/11/2020 11:04:45 AM -05:00
8/11/2020 11:22:45 AM -05:00
8/11/2020 11:40:48 AM -05:00
8/11/2020 11:58:48 AM -05:00
8/11/2020 12:16:48 PM -05:00
8/11/2020 12:34:48 PM -05:00
8/11/2020 12:52:50 PM -05:00
10/22/2020 7:15:21 PM -05:00
10/22/2020 7:33:27 PM -05:00
10/22/2020 9:03:37 PM -05:00
10/22/2020 9:21:37 PM -05:00
10/22/2020 9:39:37 PM -05:00
10/22/2020 9:57:37 PM -05:00
10/22/2020 10:15:40 PM -05:00
10/22/2020 11:09:43 PM -05:00
10/22/2020 11:27:45 PM -05:00
10/22/2020 11:45:46 PM -05:00
10/23/2020 12:03:46 AM -05:00
10/23/2020 2:45:55 AM -05:00
10/23/2020 3:03:58 AM -05:00

Sequence: 101520
Injection #6: STD6

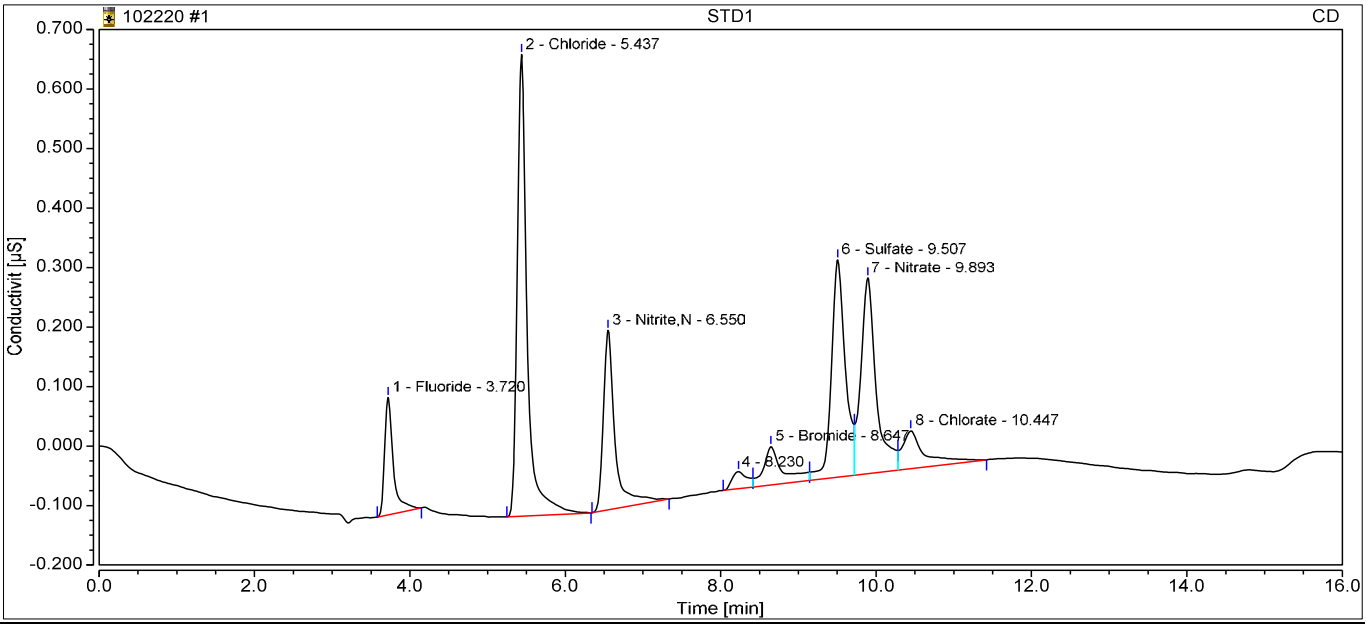
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*6*	*17.3553*	*0.99849*	*-0.0040*	*0.3537*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	5.4804	0.99983	0.0129	0.2289	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	26.1376	0.99573	0.0186	0.4711	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	0.9346	0.99999	0.0083	0.1008	0.0000
6	Sulfate	Lin, WithOffset, 1/	Area	6	5.2843	0.99985	-0.0019	0.1602	0.0000
7	Nitrate	Lin, WithOffset, 1/	Area	6	4.5248	0.99988	0.0144	0.6154	0.0000
8	Chlorate	Lin, WithOffset, 1/	Area	6	13.4374	0.99837	0.0139	0.1019	0.0000
10	Phosphate	Lin, WithOffset, 1/	Area	5	18.5357	0.99714	-0.0737	0.1942	0.0000
Maximum					**26.1376**	0.99999			
Minimum					0.9346	**0.99573**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 10:46**	*Sample Weight:*	**1.0000**

Run Time:



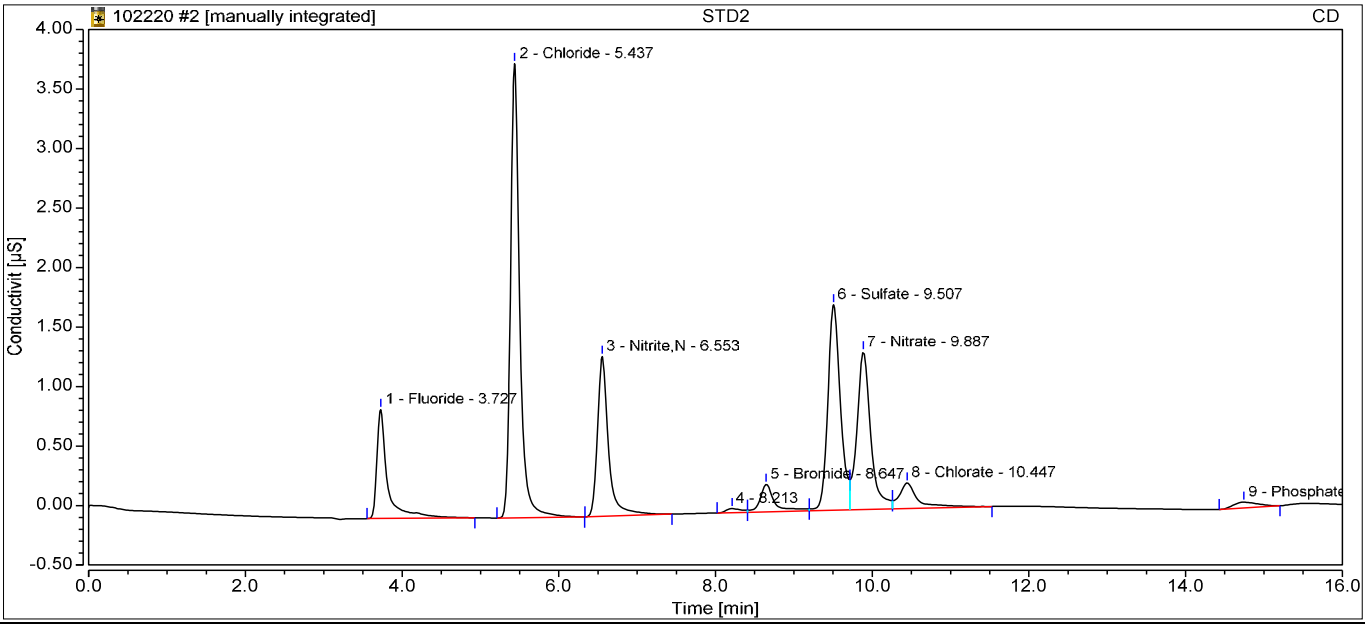
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.025	0.0833	0.0833	1.0000
2	5.44	Chloride	BMB	0.116	0.4487	0.4487	1.0000
3	6.55	Nitrite,N	BMB	0.052	0.0715	0.0715	1.0000
5	8.65	Bromide	M	0.018	0.0997	0.0997	1.0000
6	9.51	Sulfate	M	0.076	0.4861	0.4861	1.0000
7	9.89	Nitrate	M	0.075	0.0985	0.0985	1.0000
8	10.45	Chlorate	MB	0.021	0.0734	0.0734	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.384**		**1.36**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:04**	*Sample Weight:*	**1.0000**

Run Time:



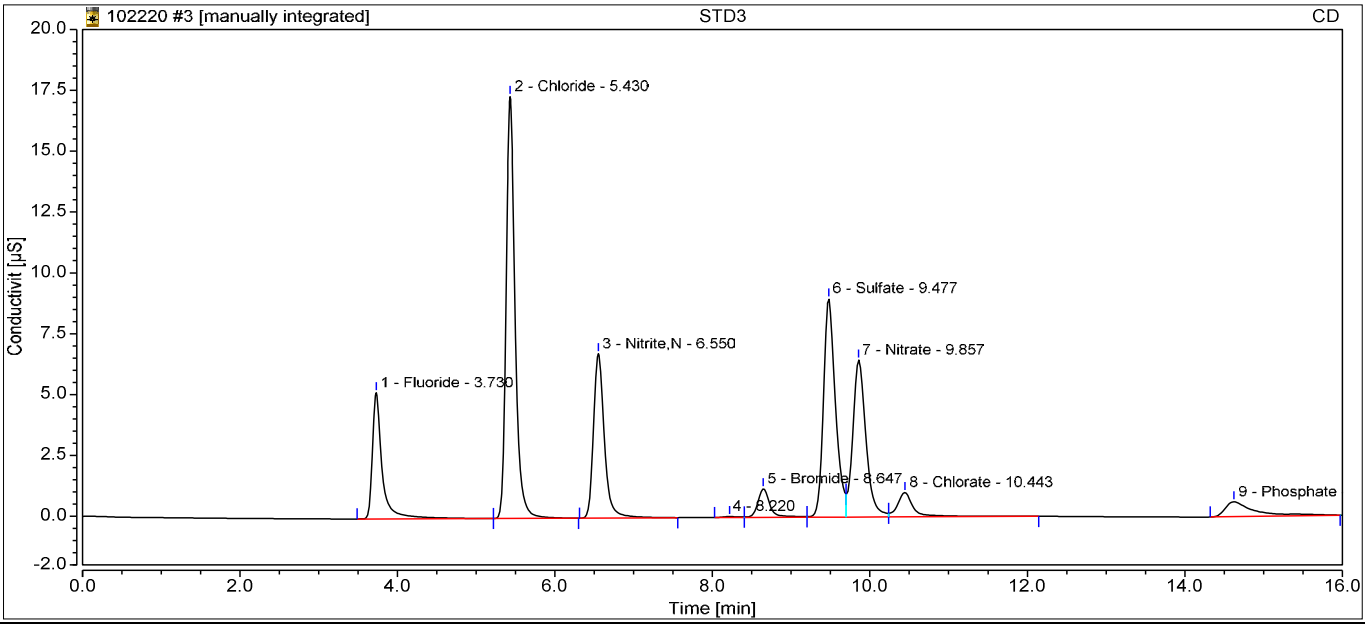
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.145	0.4204	0.4204	1.0000
2	5.44	Chloride	BMB	0.518	2.2084	2.2084	1.0000
3	6.55	Nitrite,N	BMB	0.221	0.4294	0.4294	1.0000
5	8.65	Bromide	M	0.049	0.4041	0.4041	1.0000
6	9.51	Sulfate	M	0.321	2.0151	2.0151	1.0000
7	9.89	Nitrate	M	0.270	0.4147	0.4147	1.0000
8	10.45	Chlorate	MB	0.060	0.4536	0.4536	1.0000
9	14.74	Phosphate	BMB	0.018	0.4703	0.4703	1.0000
Total:			**0.000**	**1.601**		**6.82**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



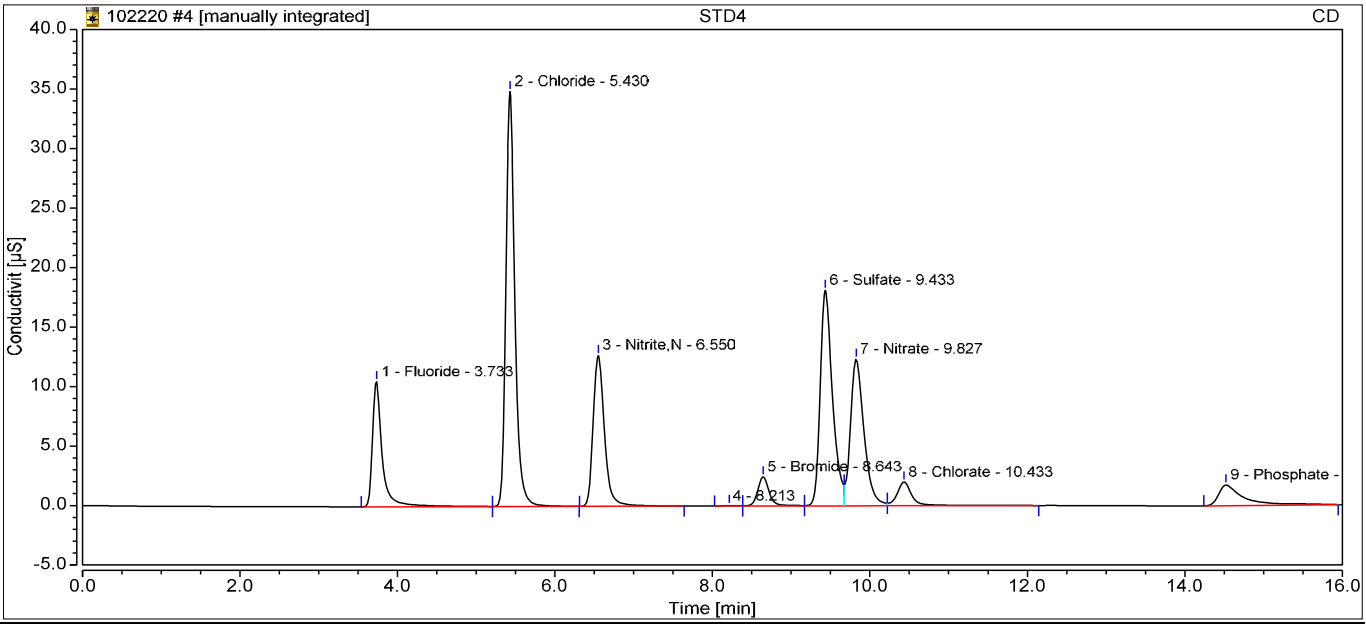
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.745	2.1166	2.1166	1.0000
2	5.43	Chloride	BMB	2.291	9.9533	9.9533	1.0000
3	6.55	Nitrite,N	BMB	1.077	2.2460	2.2460	1.0000
5	8.65	Bromide	M	0.209	1.9882	1.9882	1.0000
6	9.48	Sulfate	M	1.595	9.9688	9.9688	1.0000
7	9.86	Nitrate	M	1.238	1.9883	1.9883	1.0000
8	10.44	Chlorate	MB	0.239	2.2038	2.2038	1.0000
9	14.62	Phosphate	BM *	0.269	1.7634	1.7634	1.0000
Total:			**0.000**	**7.661**		**32.23**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BD4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:40**	*Sample Weight:*	**1.0000**

Run Time:



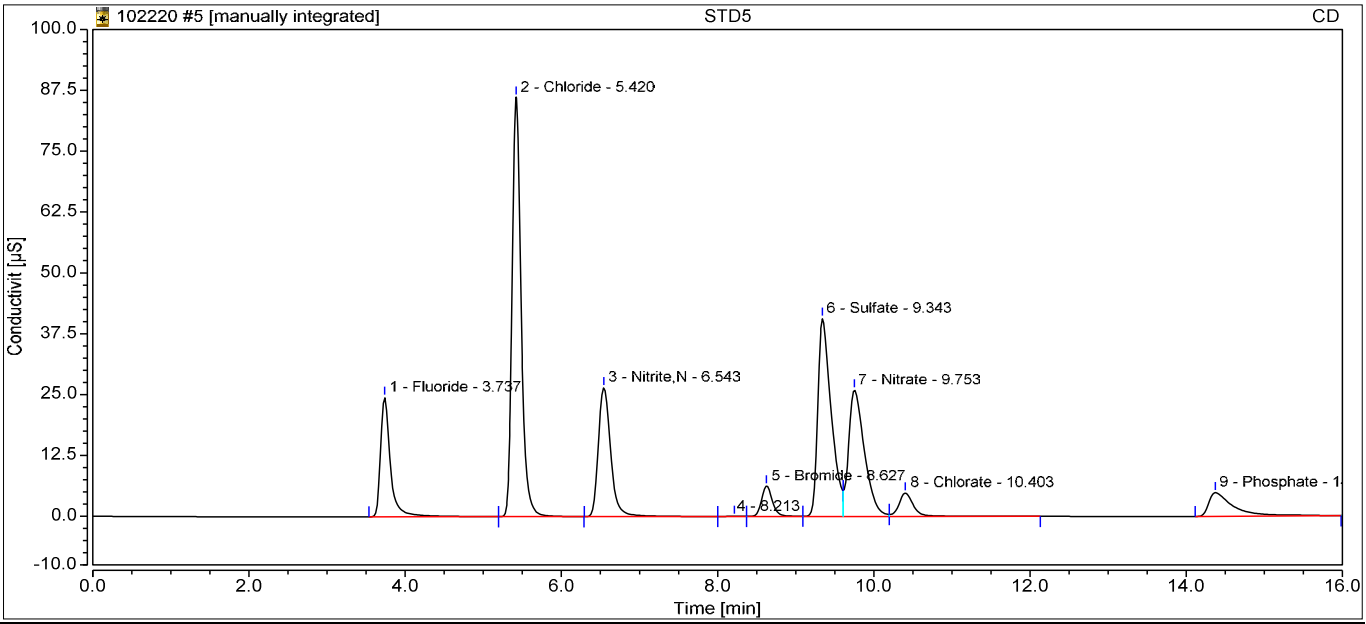
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.504	4.2630	4.2630	1.0000
2	5.43	Chloride	BMB	4.613	20.0986	20.0986	1.0000
3	6.55	Nitrite,N	BMB*	2.104	4.4276	4.4276	1.0000
5	8.64	Bromide	M	0.411	3.9946	3.9946	1.0000
6	9.43	Sulfate	M	3.273	20.4465	20.4465	1.0000
7	9.83	Nitrate	M	2.444	3.9482	3.9482	1.0000
8	10.43	Chlorate	MB	0.443	4.2079	4.2079	1.0000
9	14.52	Phosphate	BM *	0.648	3.7157	3.7157	1.0000
Total:			**0.000**	**15.439**		**65.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BD5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:58**	*Sample Weight:*	**1.0000**

Run Time:



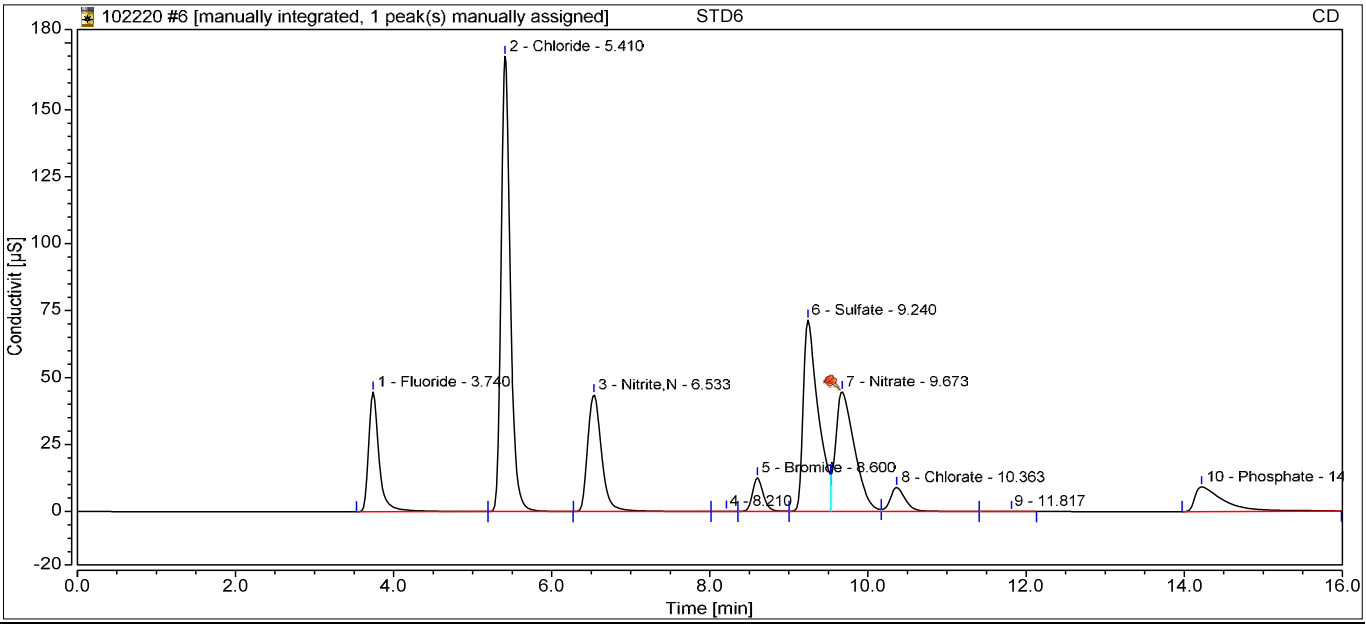
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.611	10.2228	10.2228	1.0000
2	5.42	Chloride	BMB	11.462	50.0272	50.0272	1.0000
3	6.54	Nitrite,N	BMB	4.877	10.3135	10.3135	1.0000
5	8.63	Bromide	M	1.014	9.9796	9.9796	1.0000
6	9.34	Sulfate	M	8.089	50.5200	50.5200	1.0000
7	9.75	Nitrate	M	6.097	9.8832	9.8832	1.0000
8	10.40	Chlorate	MB	1.032	9.9918	9.9918	1.0000
9	14.37	Phosphate	BM *	1.834	9.8223	9.8223	1.0000
Total:			**0.000**	**38.017**		**160.76**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BD6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



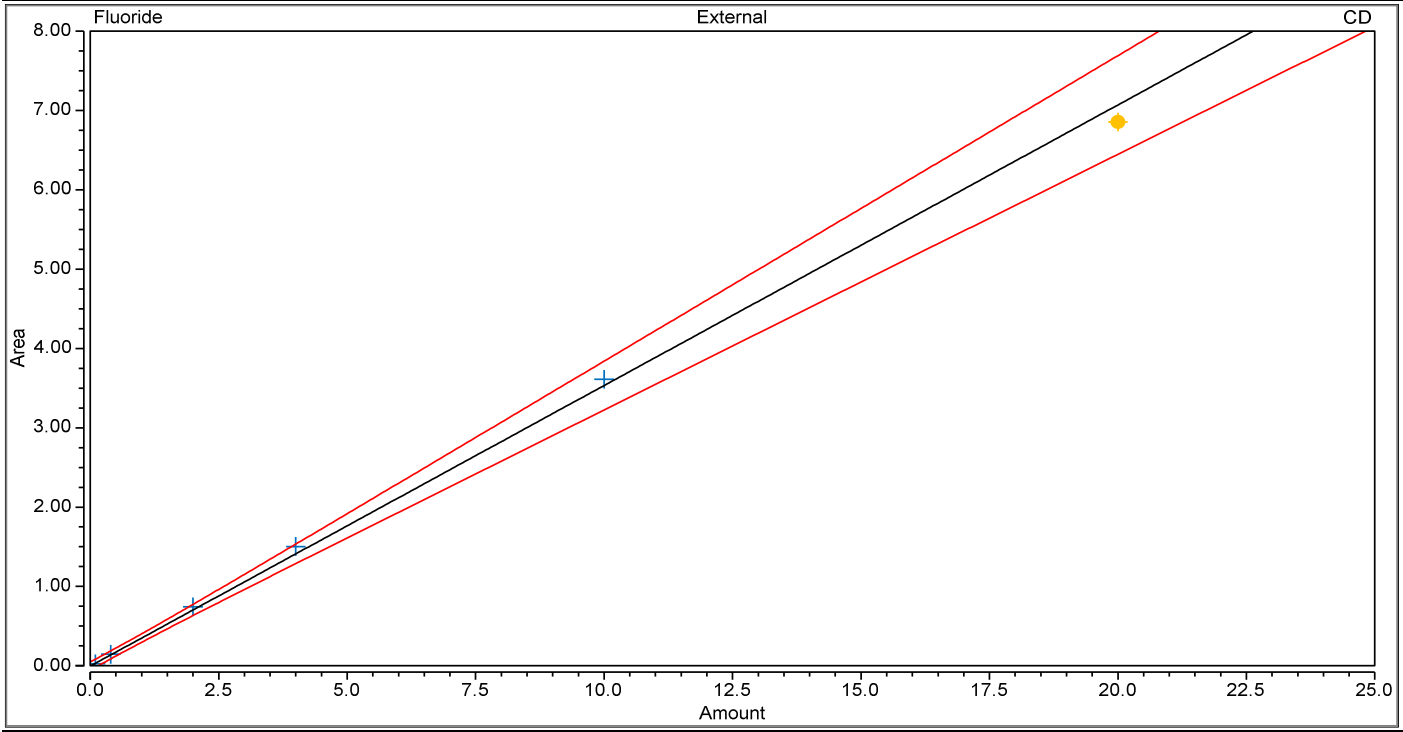
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	6.855	19.3940	19.3940	1.0000
2	5.41	Chloride	BMB	22.844	99.7639	99.7639	1.0000
3	6.53	Nitrite,N	BMB	8.975	19.0121	19.0121	1.0000
5	8.60	Bromide	M	2.028	20.0338	20.0338	1.0000
6	9.24	Sulfate	M	15.864	99.0635	99.0635	1.0000
7	9.67	Nitrate	M ^	12.426	20.1671	20.1671	1.0000
8	10.36	Chlorate	M	2.009	19.5694	19.5694	1.0000
10	14.22	Phosphate	BM *	3.933	20.6283	20.6283	1.0000
Total:			**0.000**	**74.933**		**317.63**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0040
Evaluation Type	Area	*Slope (C1)*	0.3537
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9985

Calibration Plot **Fluoride**



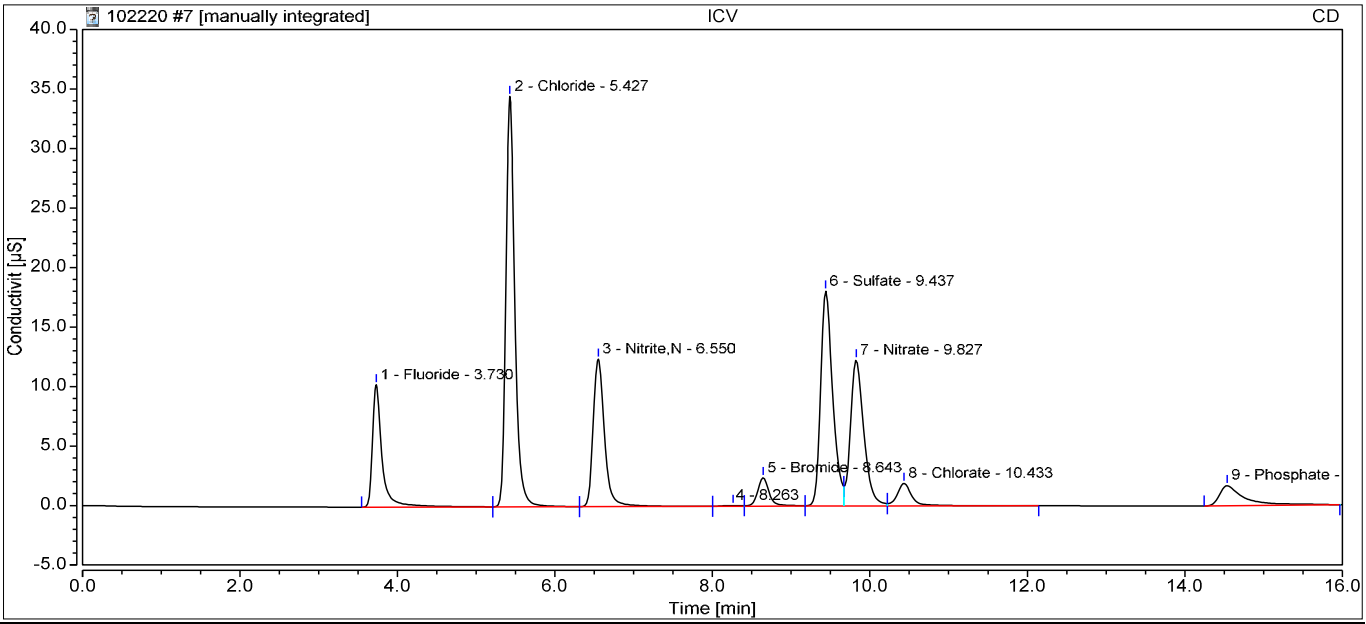
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0254	0.0254	0.025	0.197
2	STD2	2	0.4000	0.1446	0.1446	0.145	0.916
3	STD3	3	2.0000	0.7445	0.7445	0.745	5.182
4	STD4	4	4.0000	1.5036	1.5036	1.504	10.507
5	STD5	5	10.0000	3.6113	3.6113	3.611	24.538
6	STD6	6	20.0000	6.8547	6.8547	6.855	44.677

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



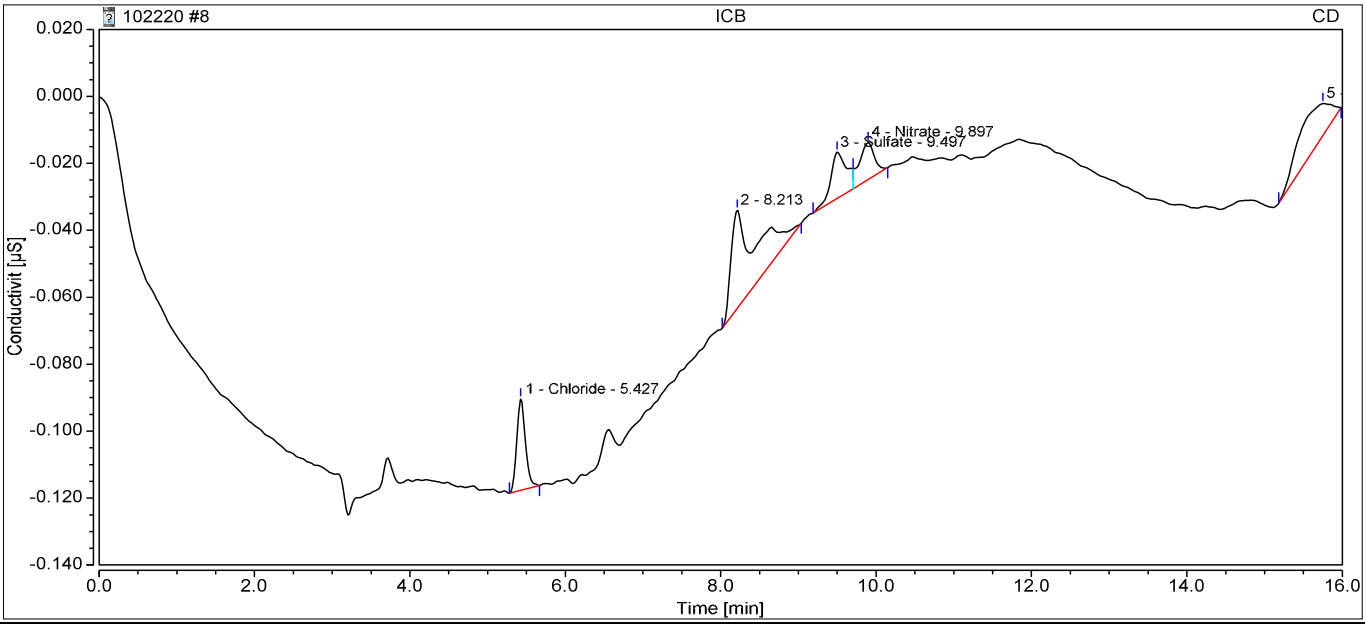
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.447	4.1020	4.1020	1.0000
2	5.43	Chloride	BMB	4.553	19.8399	19.8399	1.0000
3	6.55	Nitrite,N	BMB	2.061	4.3359	4.3359	1.0000
5	8.64	Bromide	M	0.413	4.0106	4.0106	1.0000
6	9.44	Sulfate	M	3.227	20.1622	20.1622	1.0000
7	9.83	Nitrate	M	2.405	3.8850	3.8850	1.0000
8	10.43	Chlorate	MB	0.422	4.0019	4.0019	1.0000
9	14.54	Phosphate	BM *	0.631	3.6292	3.6292	1.0000
Total:			**0.000**	**15.159**		**63.97**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**BD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:



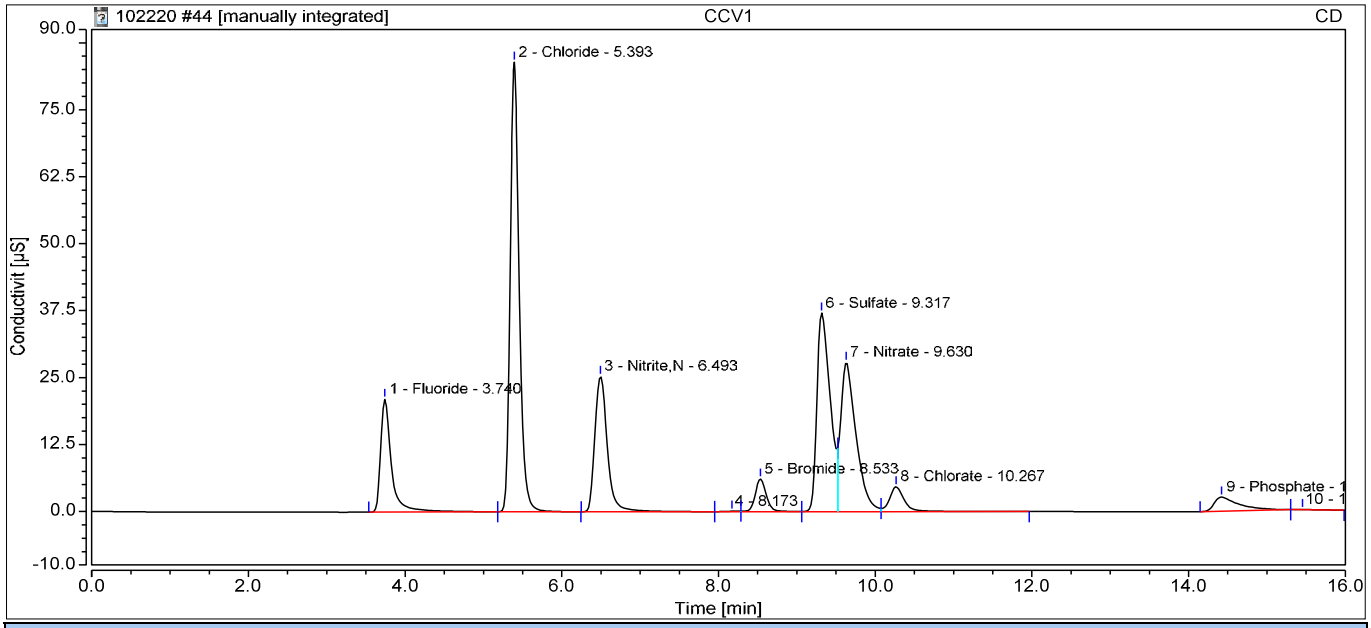
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.43	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.50	Sulfate	BM	0.003	0.0318	0.0318	1.0000
4	9.90	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.03**	

44 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 19:15**	*Sample Weight:*	**1.0000**

Run Time:



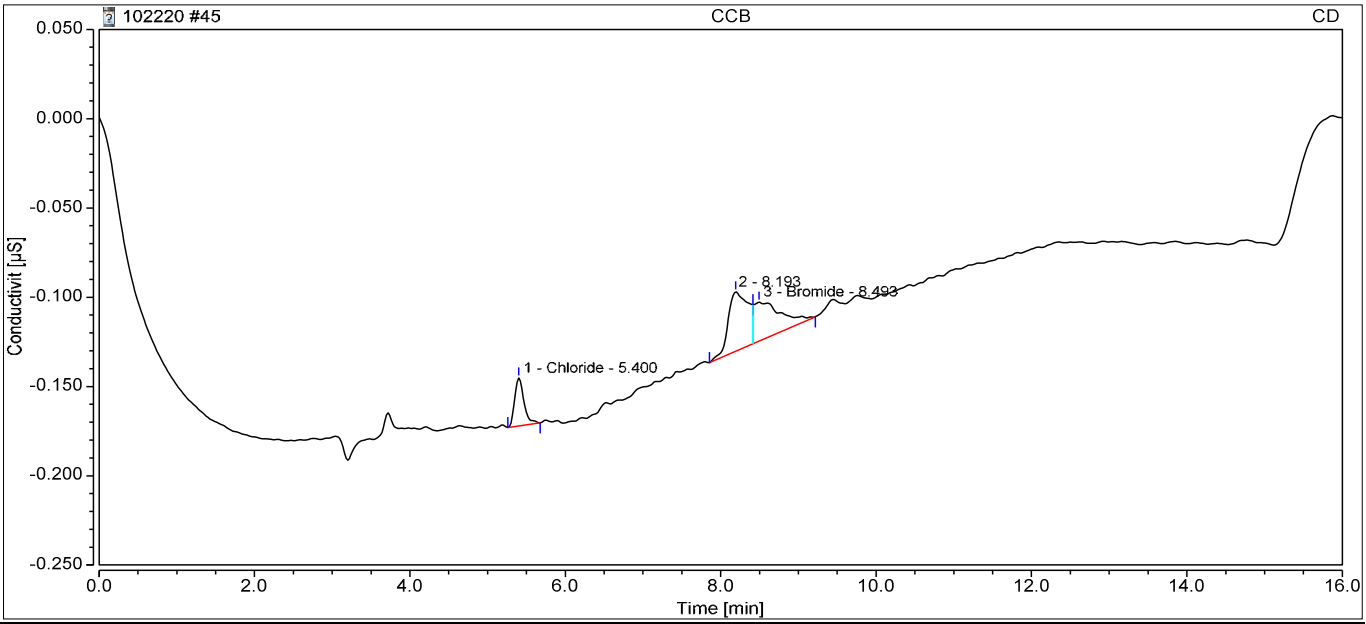
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.375	9.5558	9.5558	1.0000
2	5.39	Chloride	BMB	11.141	48.6231	48.6231	1.0000
3	6.49	Nitrite,N	BMB	4.673	9.8797	9.8797	1.0000
5	8.53	Bromide	M	0.996	9.7973	9.7973	1.0000
6	9.32	Sulfate	M *	7.340	45.8426	45.8426	1.0000
7	9.63	Nitrate	M *	6.313	10.2347	10.2347	1.0000
8	10.27	Chlorate	MB	1.017	9.8353	9.8353	1.0000
9	14.42	Phosphate	BMB	0.974	5.3922	5.3922	1.0000
Total:			**0.000**	**35.828**		**149.16**	

45 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 19:33**	*Sample Weight:*	**1.0000**

Run Time:



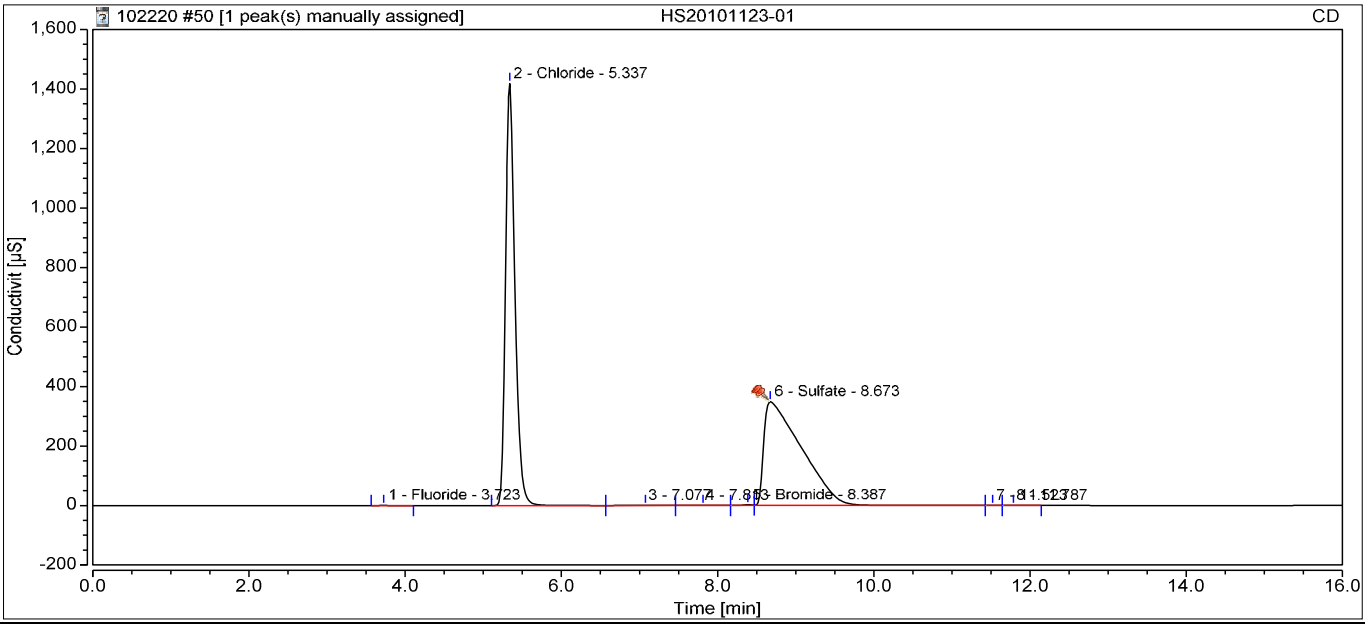
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.49	Bromide	MB	0.008	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.012**		**0.00**	

50 HS20101123-01

Sample Name:	**HS20101123-01**	*Injection Volume:*	**5.00**
Vial Number:	**GD5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 21:03**	*Sample Weight:*	**1.0000**

Run Time:



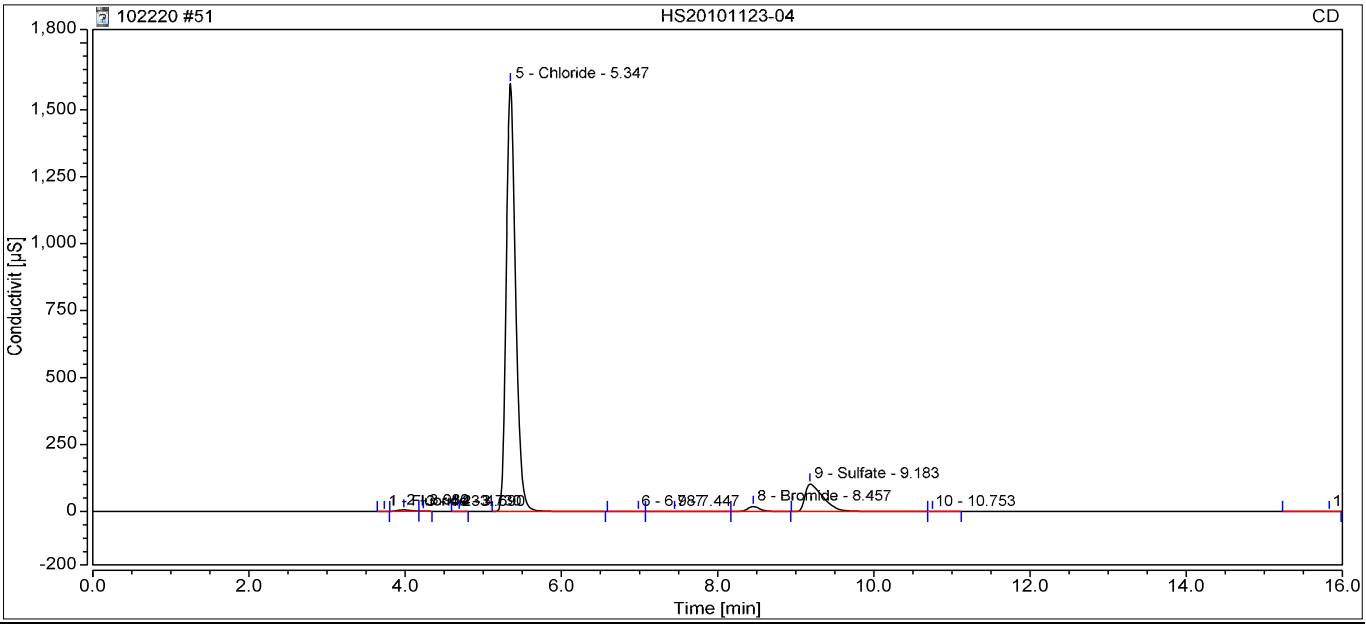
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.039	0.1210	0.1210	1.0000
2	5.34	Chloride	BMB	198.045	865.3094	865.3094	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
5	8.39	Bromide	M	0.407	3.9547	3.9547	1.0000
6	8.67	Sulfate	M ^	193.578	1208.6819	1208.6819	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**392.068**		**2078.07**	

51 HS20101123-04

Sample Name:	**HS20101123-04**	*Injection Volume:*	**5.00**
Vial Number:	**GD6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 21:21**	*Sample Weight:*	**1.0000**

Run Time:



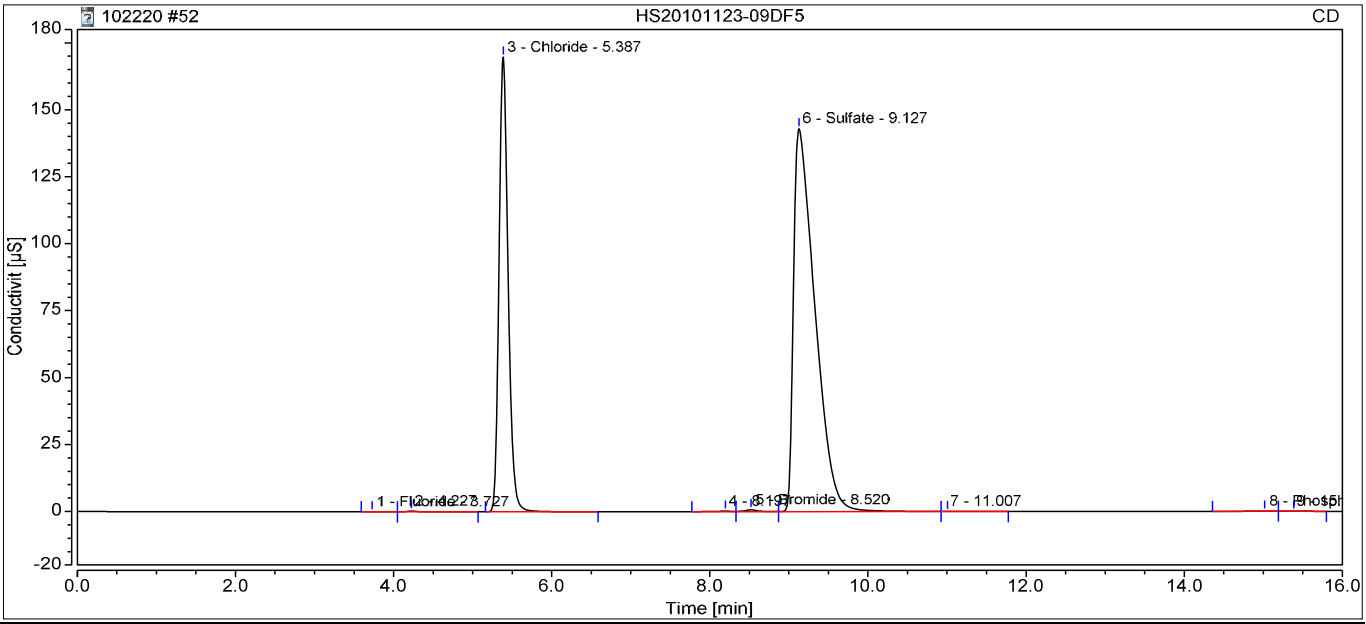
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.013	0.0480	0.0480	1.0000
5	5.35	Chloride	BMB	222.401	971.7366	971.7366	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
8	8.46	Bromide	BMB	3.252	32.1790	32.1790	1.0000
9	9.18	Sulfate	BM	27.276	170.3180	170.3180	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**252.942**		**1174.28**	

52 HS20101123-09DF5

Sample Name:	**HS20101123-09DF5**	*Injection Volume:*	**5.00**
Vial Number:	**GD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**5.0000**
Recording Time:	**10/22/2020 21:39**	*Sample Weight:*	**1.0000**

Run Time:



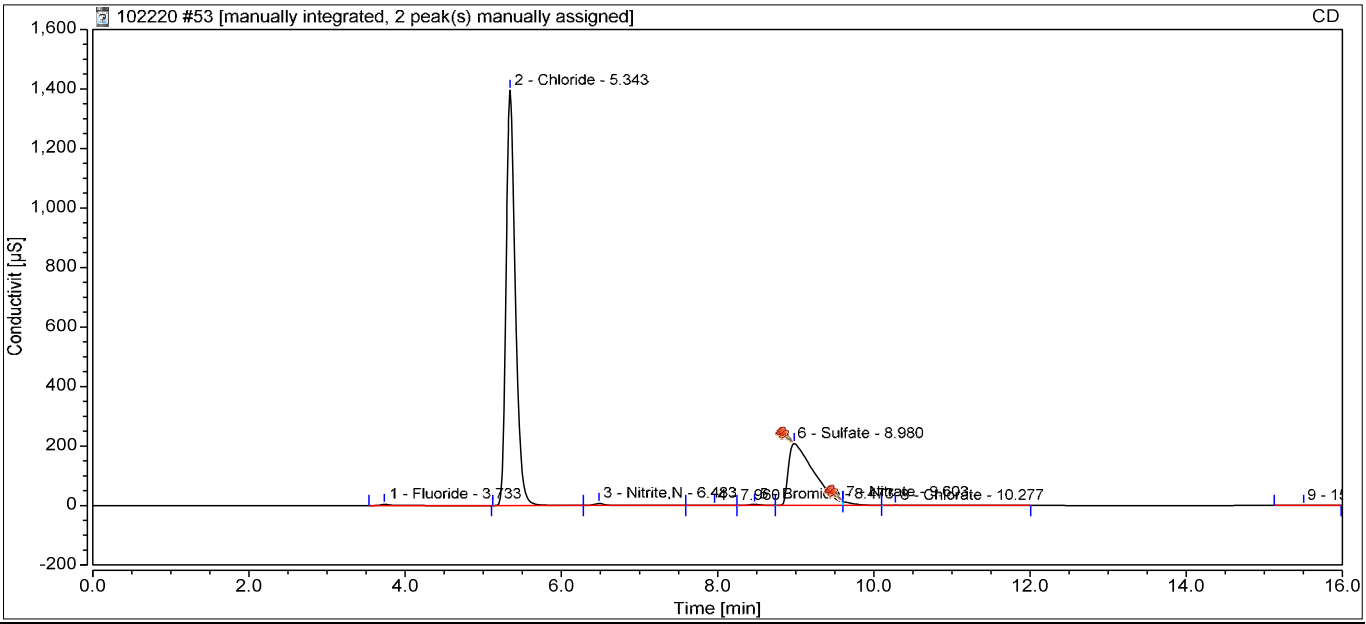
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.006	0.0277	0.1384	5.0000
3	5.39	Chloride	BMB	22.369	97.6857	488.4283	5.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	5.0000
5	8.52	Bromide	M	0.147	1.3745	6.8726	5.0000
6	9.13	Sulfate	M	44.553	278.1908	1390.9539	5.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	5.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	5.0000
8	15.02	Phosphate	BMB	0.018	0.4742	2.3710	5.0000
Total:			**0.000**	**67.092**		**1888.76**	

53 HS20101123-01MS

Sample Name:	**HS20101123-01MS**	*Injection Volume:*	**5.00**
Vial Number:	**GD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 21:57**	*Sample Weight:*	**1.0000**

Run Time:



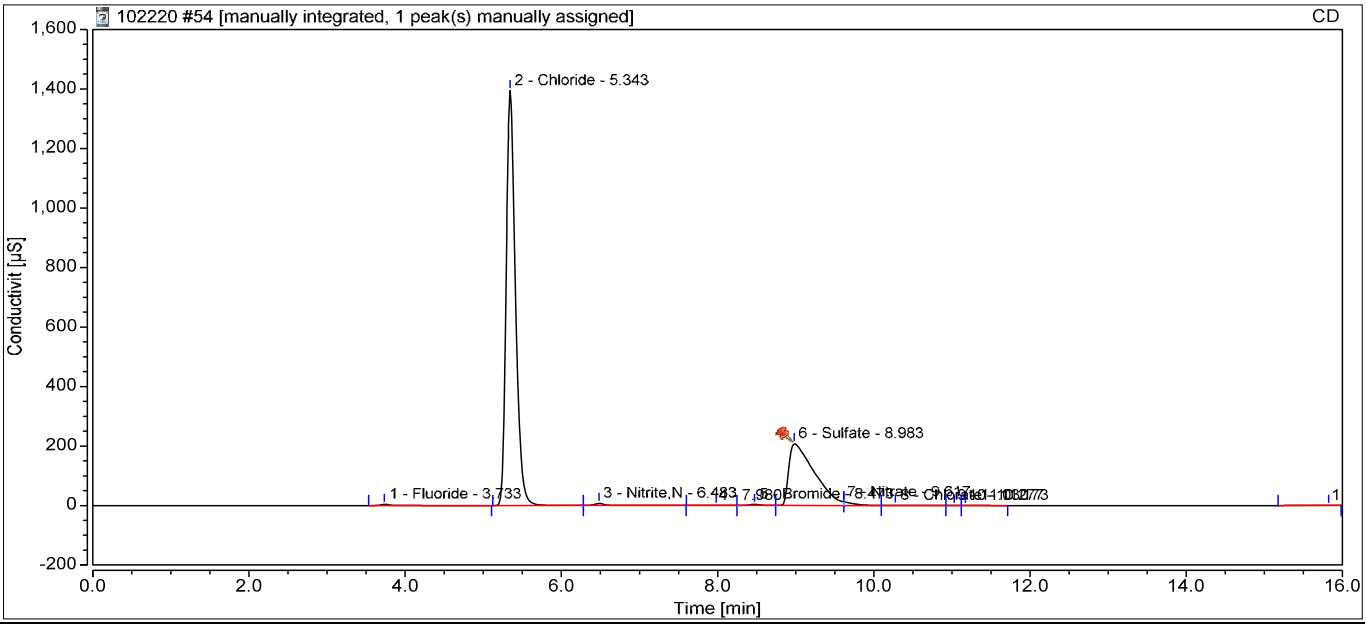
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.711	2.0215	2.0215	1.0000
2	5.34	Chloride	BMB	192.264	840.0527	840.0527	1.0000
3	6.48	Nitrite,N	BMB	1.077	2.2462	2.2462	1.0000
5	8.47	Bromide	M	0.652	6.3801	6.3801	1.0000
6	8.98	Sulfate	M *^	78.244	488.5536	488.5536	1.0000
7	9.60	Nitrate	M *^	1.965	3.1687	3.1687	1.0000
8	10.28	Chlorate	MB	0.314	2.9465	2.9465	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**275.226**		**1345.37**	

54 *HS20101123-01MSD*

Sample Name:	**HS20101123-01MSD**	*Injection Volume:*	**5.00**
Vial Number:	**GE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 22:15**	*Sample Weight:*	**1.0000**

Run Time:



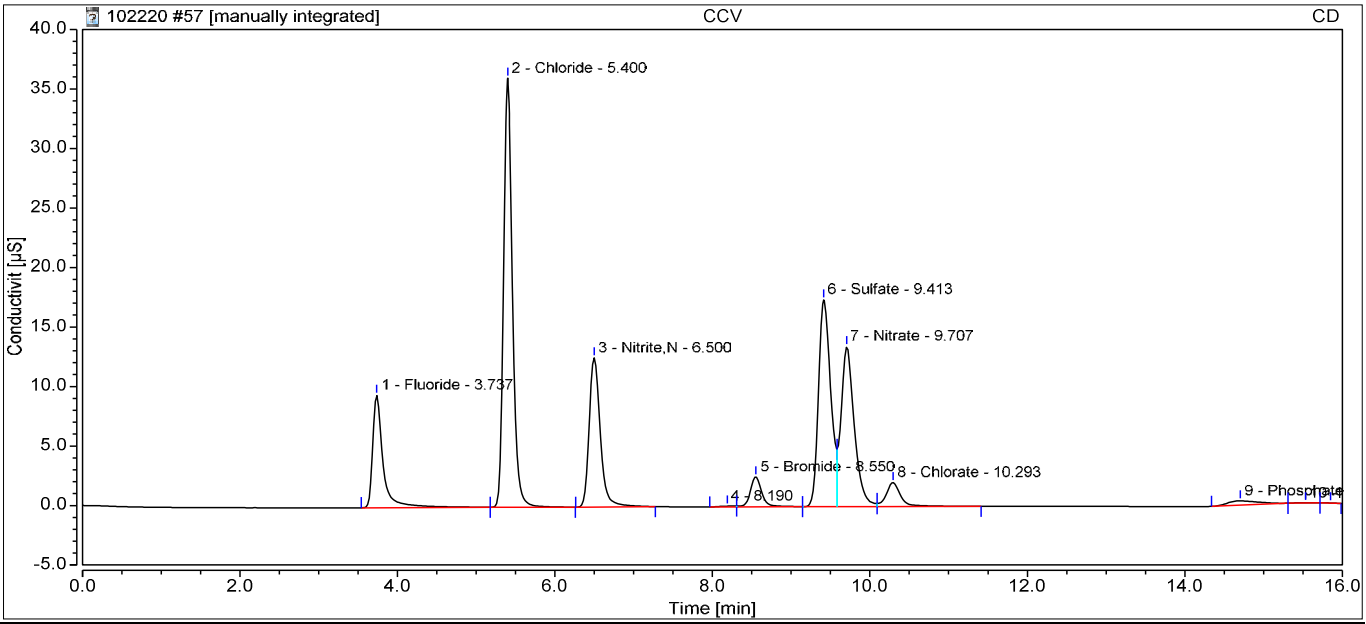
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.713	2.0287	2.0287	1.0000
2	5.34	Chloride	BMB	192.153	839.5648	839.5648	1.0000
3	6.48	Nitrite,N	BMB	1.075	2.2416	2.2416	1.0000
5	8.47	Bromide	M	0.650	6.3638	6.3638	1.0000
6	8.98	Sulfate	M *^	78.031	487.2265	487.2265	1.0000
7	9.62	Nitrate	M *	1.802	2.9044	2.9044	1.0000
8	10.28	Chlorate	M	0.290	2.7053	2.7053	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**274.713**		**1343.04**	

57 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 23:09**	*Sample Weight:*	**1.0000**

Run Time:



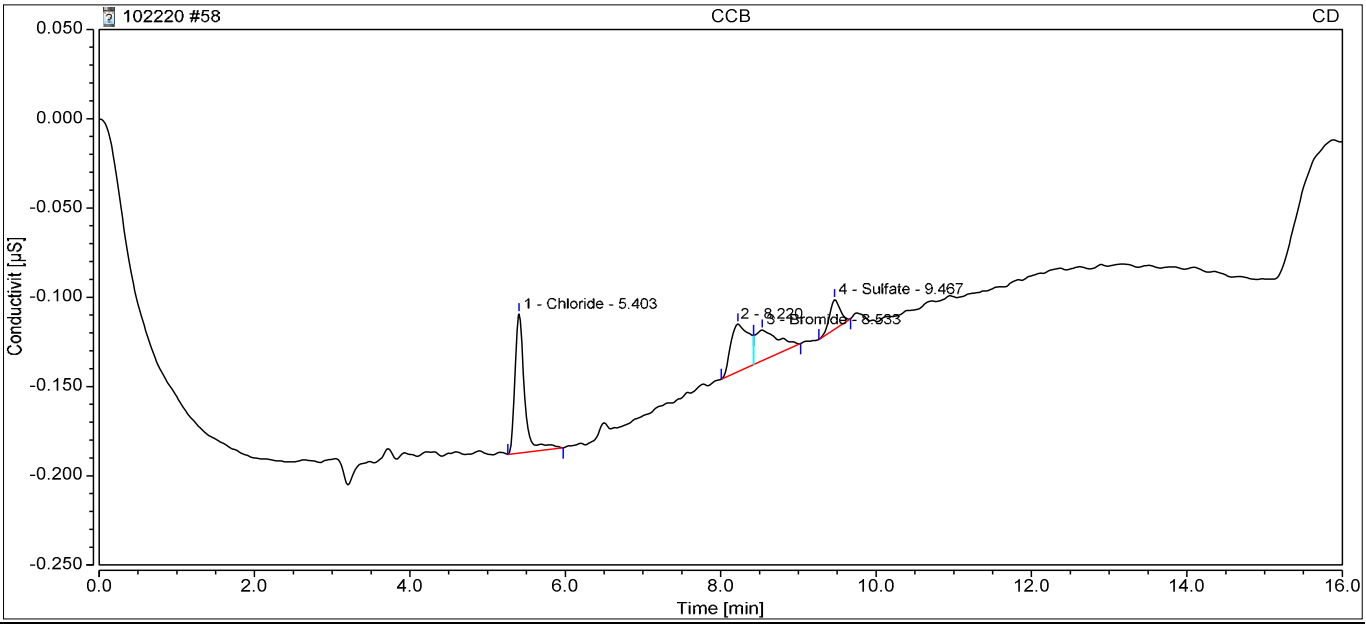
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.443	4.0912	4.0912	1.0000
2	5.40	Chloride	BMB	4.720	20.5702	20.5702	1.0000
3	6.50	Nitrite,N	BMB*	2.073	4.3605	4.3605	1.0000
5	8.55	Bromide	M	0.421	4.0971	4.0971	1.0000
6	9.41	Sulfate	M	3.126	19.5303	19.5303	1.0000
7	9.71	Nitrate	M	2.638	4.2624	4.2624	1.0000
8	10.29	Chlorate	MB	0.432	4.1006	4.1006	1.0000
9	14.70	Phosphate	BMB	0.162	1.2149	1.2149	1.0000
Total:			**0.000**	**15.015**		**62.23**	

58 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 23:27**	*Sample Weight:*	**1.0000**

Run Time:

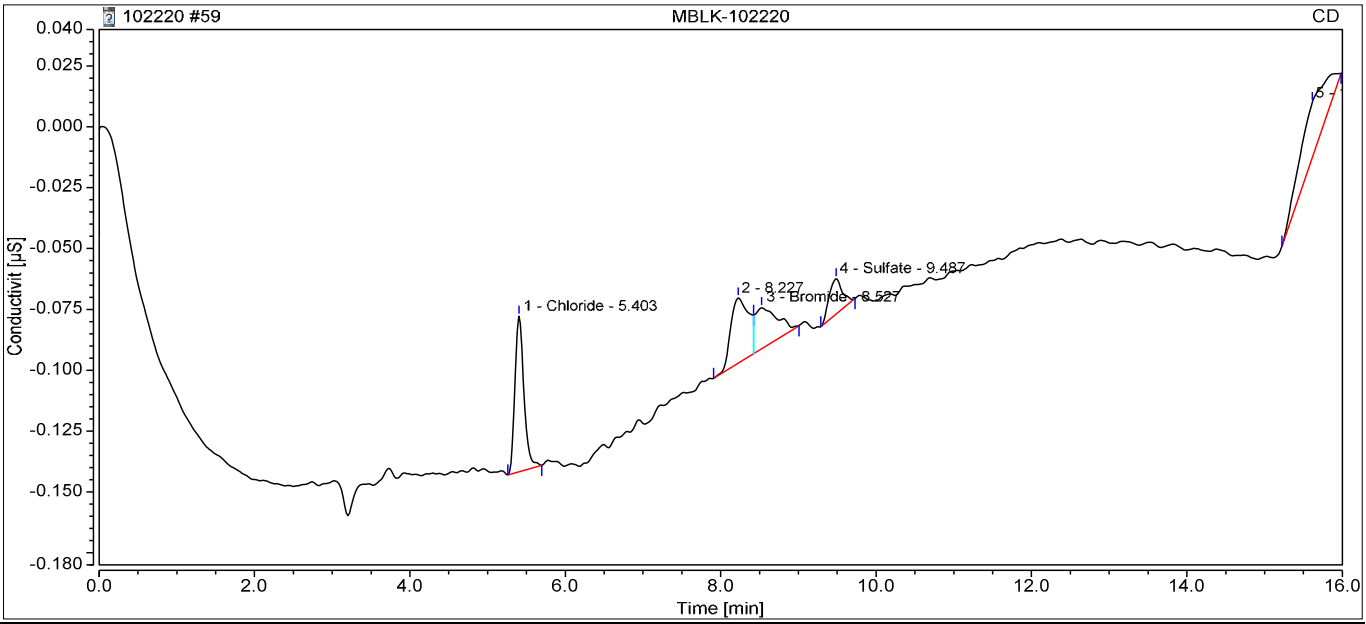


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.011	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.53	Bromide	MB	0.006	n.a.	n.a.	1.0000
4	9.47	Sulfate	BMB	0.003	0.0284	0.0284	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.019**		**0.03**	

59	*MBLK-102220*		
Sample Name:	**MBLK-102220**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/22/2020 23:45**	*Sample Weight:*	**1.0000**

Run Time:



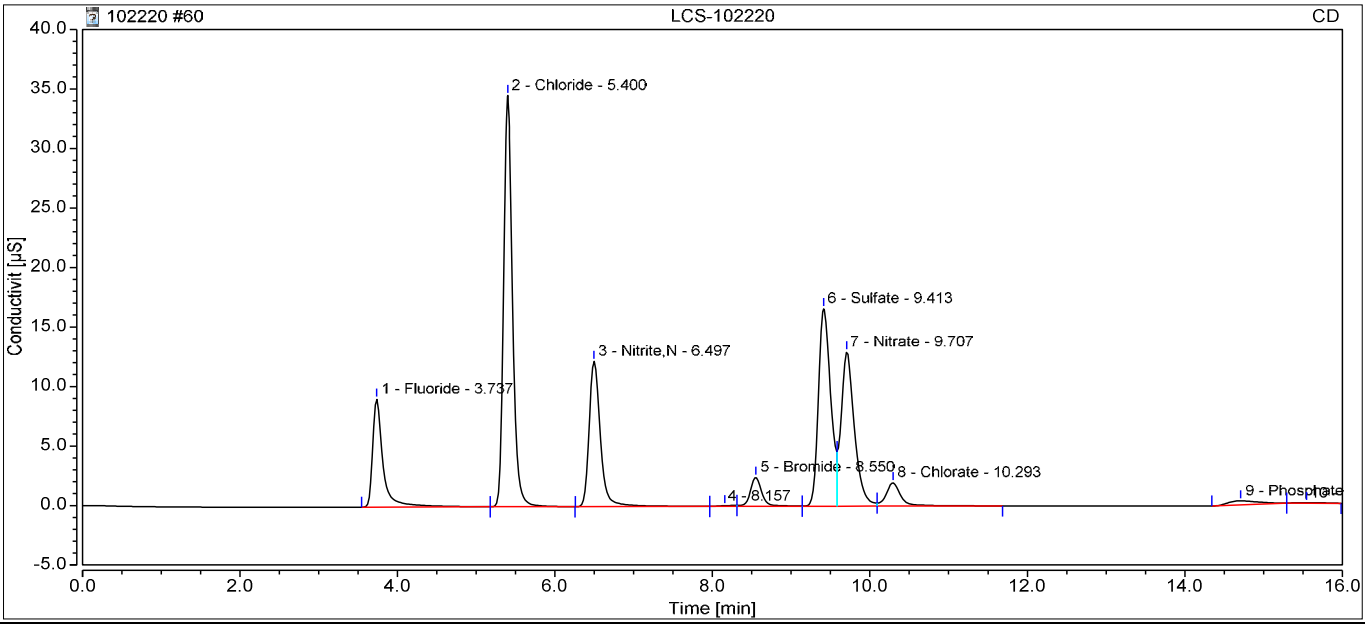
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.009	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.53	Bromide	MB	0.005	n.a.	n.a.	1.0000
4	9.49	Sulfate	BMB	0.003	0.0300	0.0300	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.017**		**0.03**	

60 LCS-102220

Sample Name:	**LCS-102220**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/23/2020 00:03**	*Sample Weight:*	**1.0000**

Run Time:



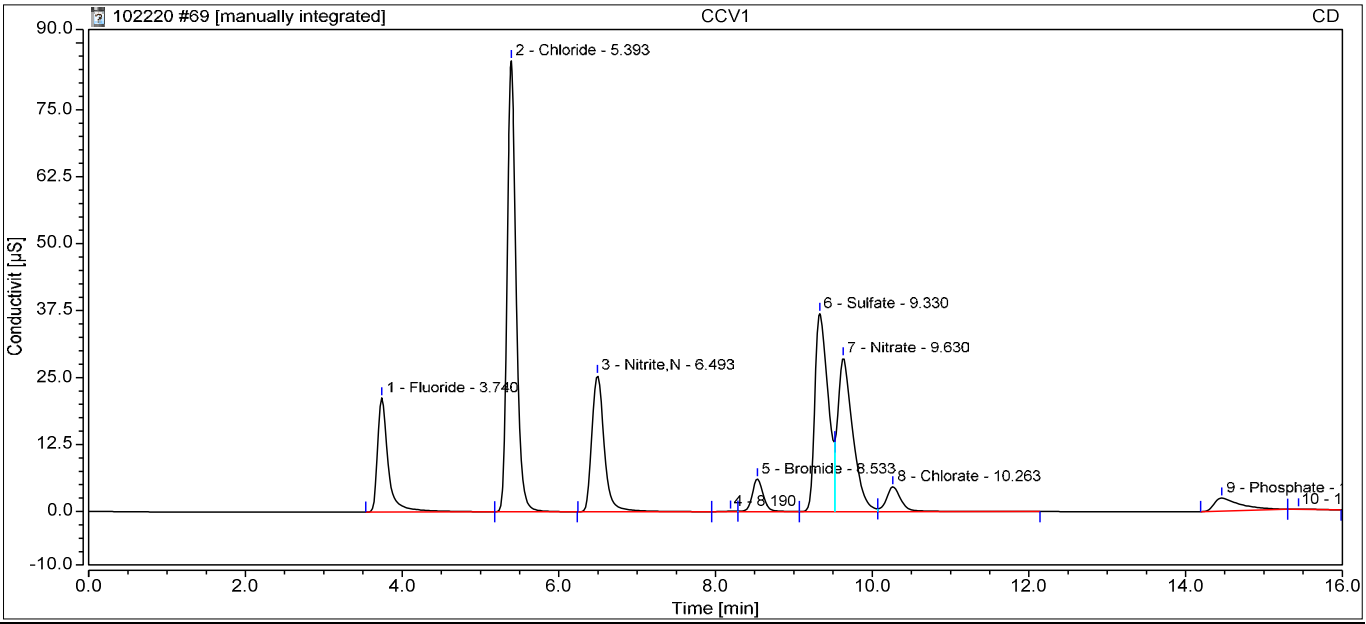
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	1.397	3.9605	3.9605	1.0000
2	5.40	Chloride	BMB	4.540	19.7801	19.7801	1.0000
3	6.50	Nitrite,N	BMB	2.044	4.2992	4.2992	1.0000
5	8.55	Bromide	M	0.411	3.9906	3.9906	1.0000
6	9.41	Sulfate	M	2.992	18.6930	18.6930	1.0000
7	9.71	Nitrate	M	2.558	4.1329	4.1329	1.0000
8	10.29	Chlorate	MB	0.429	4.0754	4.0754	1.0000
9	14.71	Phosphate	BMB	0.151	1.1546	1.1546	1.0000
Total:			**0.000**	**14.521**		**60.09**	

69 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/23/2020 02:45**	*Sample Weight:*	**1.0000**

Run Time:



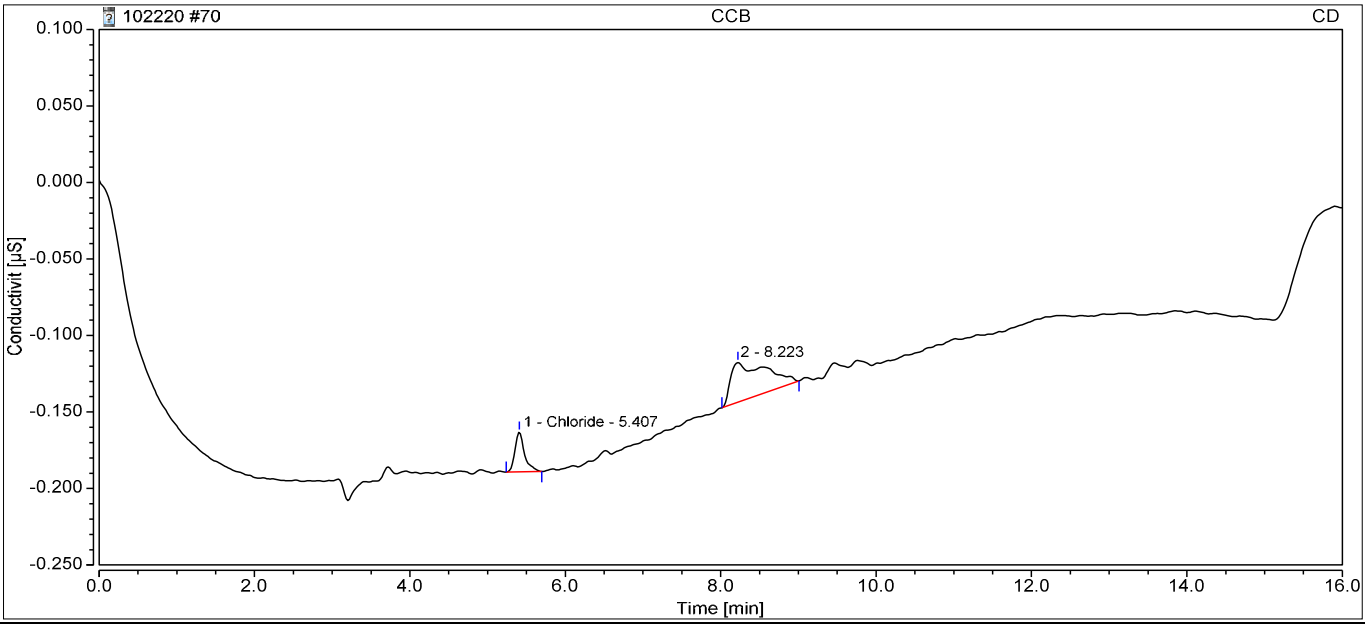
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.385	9.5839	9.5839	1.0000
2	5.39	Chloride	BMB	11.161	48.7142	48.7142	1.0000
3	6.49	Nitrite,N	BMB	4.684	9.9029	9.9029	1.0000
5	8.53	Bromide	M	0.999	9.8290	9.8290	1.0000
6	9.33	Sulfate	M *	7.302	45.6028	45.6028	1.0000
7	9.63	Nitrate	M *	6.426	10.4184	10.4184	1.0000
8	10.26	Chlorate	MB	1.020	9.8652	9.8652	1.0000
9	14.46	Phosphate	BMB	0.933	5.1855	5.1855	1.0000
Total:			**0.000**	**35.911**		**149.10**	

70 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/23/2020 03:03**	*Sample Weight:*	**1.0000**

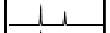
Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.41	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.00**	

Sequence: 110220
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	me	Status
	STD1		Calibration	BD1	1.00	1	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD2		Calibration	BD2	1.00	2	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD3		Calibration	BD3	1.00	3	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD4		Calibration	BD4	1.00	4	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD5		Calibration	BD5	1.00	5	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD6		Calibration	BD6	1.00	6	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICV		Unknown	BD7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICB		Unknown	BD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	MBLK-110220		Unknown	BA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	LCS-110220		Unknown	BA8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-01DF100		Unknown	RD8	100.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-04DF10		Unknown	RE1	10.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-09DF50		Unknown	RE2	50.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11		Unknown	GA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11MS		Unknown	GA6	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101310-11MSD		Unknown	GA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished

Sequence: 110220
Last Update Operator: alshs.nouser

Inject Time
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8/11/2020 11:04:45 AM -05:00
8/11/2020 11:22:45 AM -05:00
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11/3/2020 5:01:13 AM -06:00
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11/3/2020 8:19:33 AM -06:00
11/3/2020 8:55:35 AM -06:00

Sequence: 101520
Injection #6: STD6

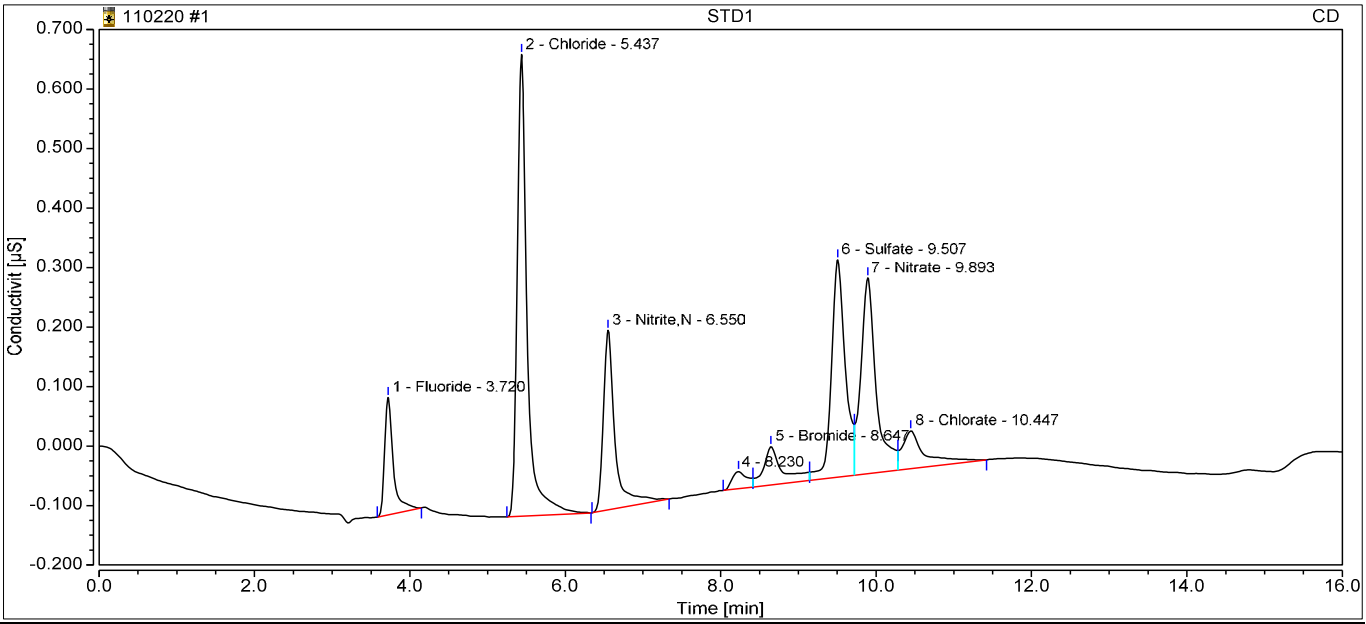
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	***Fluoride***	***Lin, WithOffset, 1/***	***Area***	***6***	***17.3553***	***0.99849***	***-0.0040***	***0.3537***	***0.0000***
2	Chloride	Lin, WithOffset, 1/	Area	6	5.4804	0.99983	0.0129	0.2289	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	26.1376	0.99573	0.0186	0.4711	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	0.9346	0.99999	0.0083	0.1008	0.0000
6	Sulfate	Lin, WithOffset, 1/	Area	6	5.2843	0.99985	-0.0019	0.1602	0.0000
7	Nitrate	Lin, WithOffset, 1/	Area	6	4.5248	0.99988	0.0144	0.6154	0.0000
8	Chlorate	Lin, WithOffset, 1/	Area	6	13.4374	0.99837	0.0139	0.1019	0.0000
10	Phosphate	Lin, WithOffset, 1/	Area	5	18.5357	0.99714	-0.0737	0.1942	0.0000
Maximum					**26.1376**	0.99999			
Minimum					0.9346	**0.99573**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 10:46**	*Sample Weight:*	**1.0000**

Run Time:



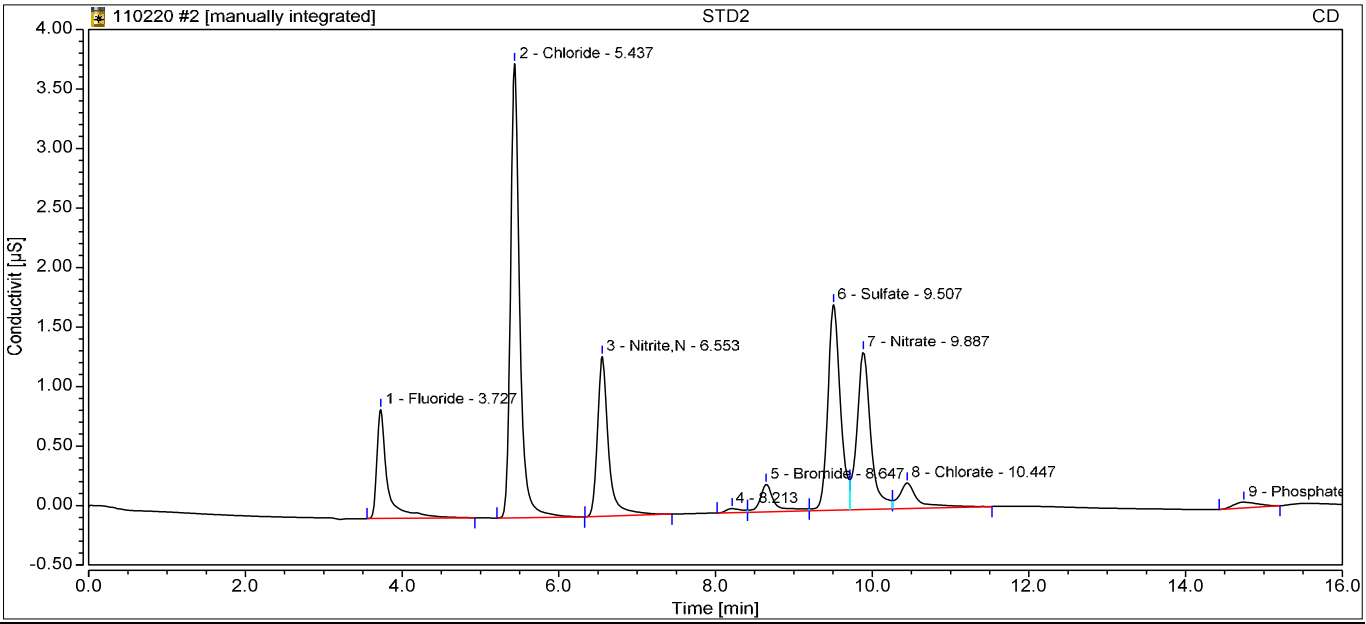
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.025	0.0833	0.0833	1.0000
2	5.44	Chloride	BMB	0.116	0.4487	0.4487	1.0000
3	6.55	Nitrite,N	BMB	0.052	0.0715	0.0715	1.0000
5	8.65	Bromide	M	0.018	0.0997	0.0997	1.0000
6	9.51	Sulfate	M	0.076	0.4861	0.4861	1.0000
7	9.89	Nitrate	M	0.075	0.0985	0.0985	1.0000
8	10.45	Chlorate	MB	0.021	0.0734	0.0734	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.384**		**1.36**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:04**	*Sample Weight:*	**1.0000**

Run Time:



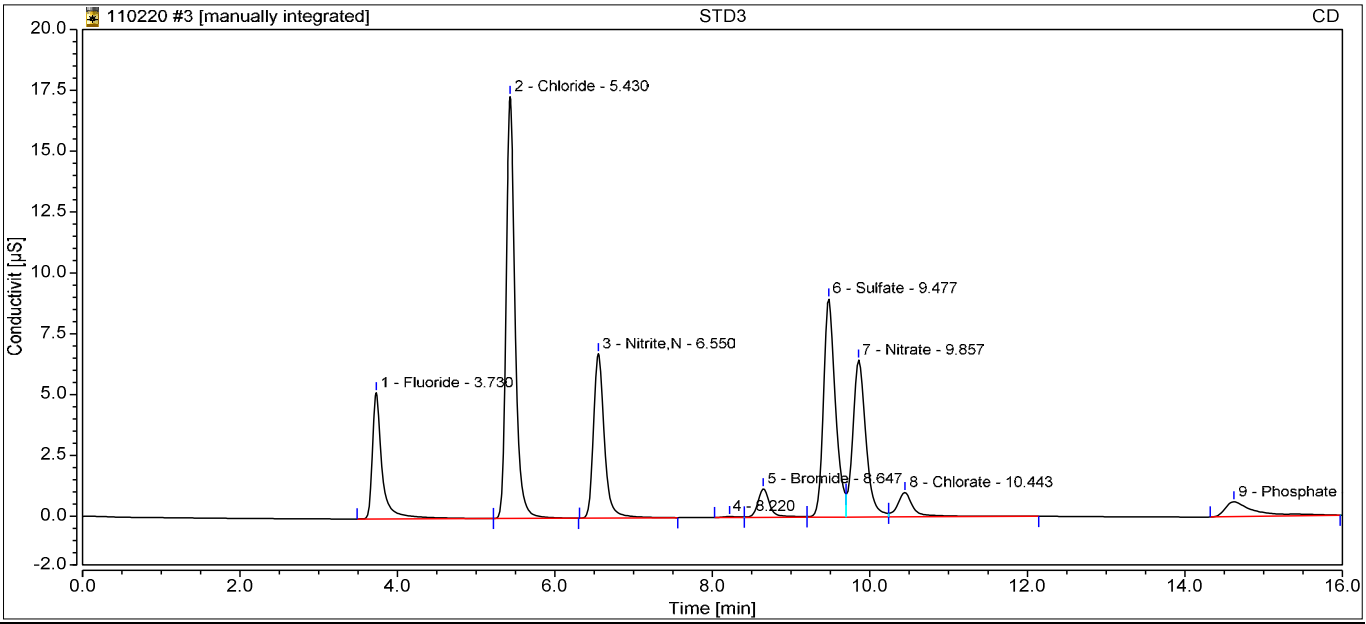
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.145	0.4204	0.4204	1.0000
2	5.44	Chloride	BMB	0.518	2.2084	2.2084	1.0000
3	6.55	Nitrite,N	BMB	0.221	0.4294	0.4294	1.0000
5	8.65	Bromide	M	0.049	0.4041	0.4041	1.0000
6	9.51	Sulfate	M	0.321	2.0151	2.0151	1.0000
7	9.89	Nitrate	M	0.270	0.4147	0.4147	1.0000
8	10.45	Chlorate	MB	0.060	0.4536	0.4536	1.0000
9	14.74	Phosphate	BMB	0.018	0.4703	0.4703	1.0000
Total:			**0.000**	**1.601**		**6.82**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



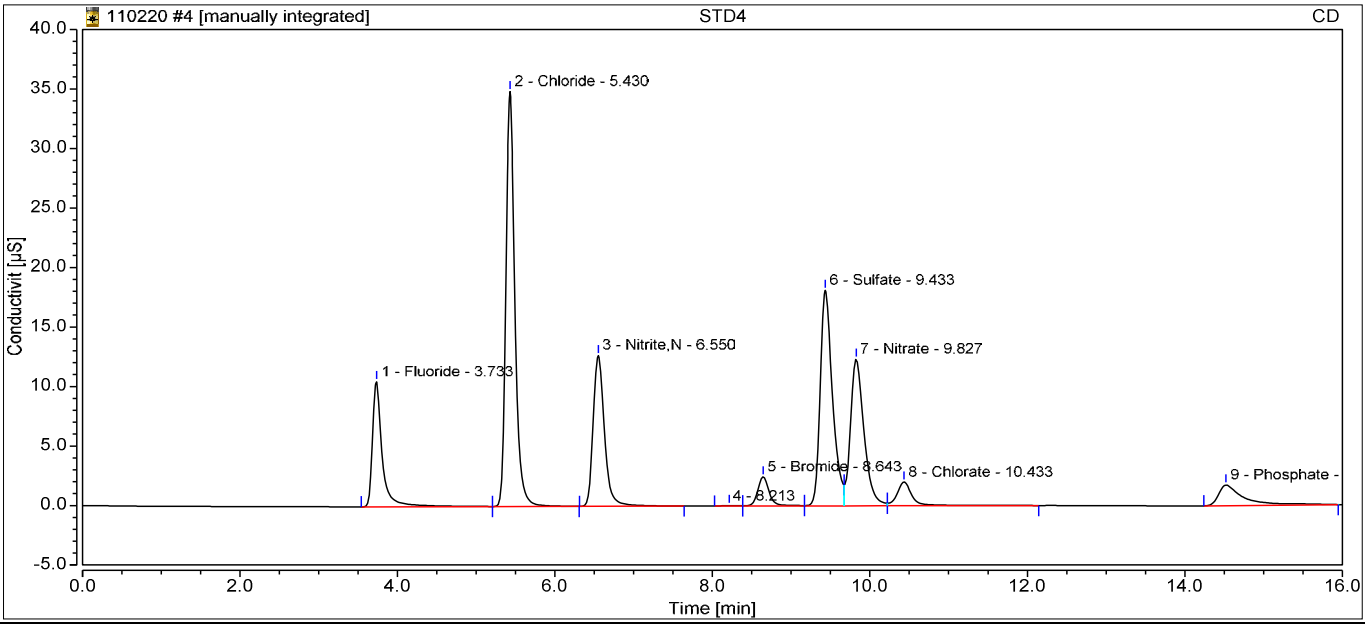
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.745	2.1166	2.1166	1.0000
2	5.43	Chloride	BMB	2.291	9.9533	9.9533	1.0000
3	6.55	Nitrite,N	BMB	1.077	2.2460	2.2460	1.0000
5	8.65	Bromide	M	0.209	1.9882	1.9882	1.0000
6	9.48	Sulfate	M	1.595	9.9688	9.9688	1.0000
7	9.86	Nitrate	M	1.238	1.9883	1.9883	1.0000
8	10.44	Chlorate	MB	0.239	2.2038	2.2038	1.0000
9	14.62	Phosphate	BM *	0.269	1.7634	1.7634	1.0000
Total:			**0.000**	**7.661**		**32.23**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BD4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:40**	*Sample Weight:*	**1.0000**

Run Time:



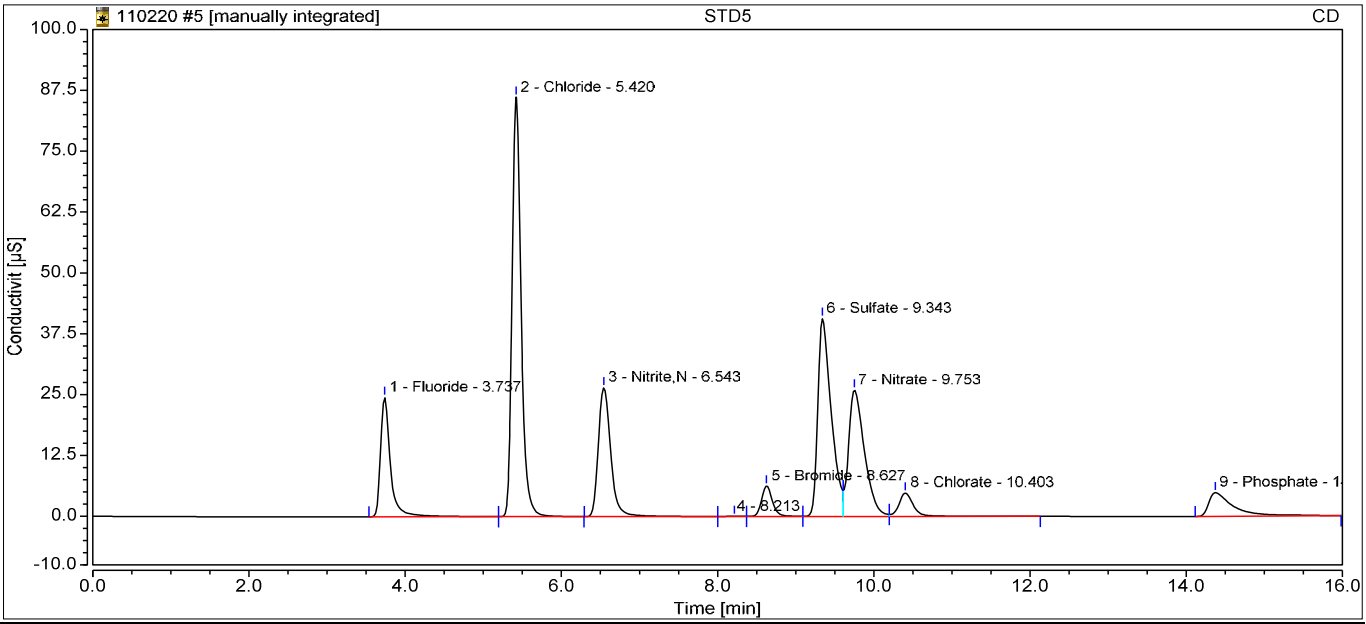
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.504	4.2630	4.2630	1.0000
2	5.43	Chloride	BMB	4.613	20.0986	20.0986	1.0000
3	6.55	Nitrite,N	BMB*	2.104	4.4276	4.4276	1.0000
5	8.64	Bromide	M	0.411	3.9946	3.9946	1.0000
6	9.43	Sulfate	M	3.273	20.4465	20.4465	1.0000
7	9.83	Nitrate	M	2.444	3.9482	3.9482	1.0000
8	10.43	Chlorate	MB	0.443	4.2079	4.2079	1.0000
9	14.52	Phosphate	BM *	0.648	3.7157	3.7157	1.0000
Total:			**0.000**	**15.439**		**65.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BD5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:58**	*Sample Weight:*	**1.0000**

Run Time:



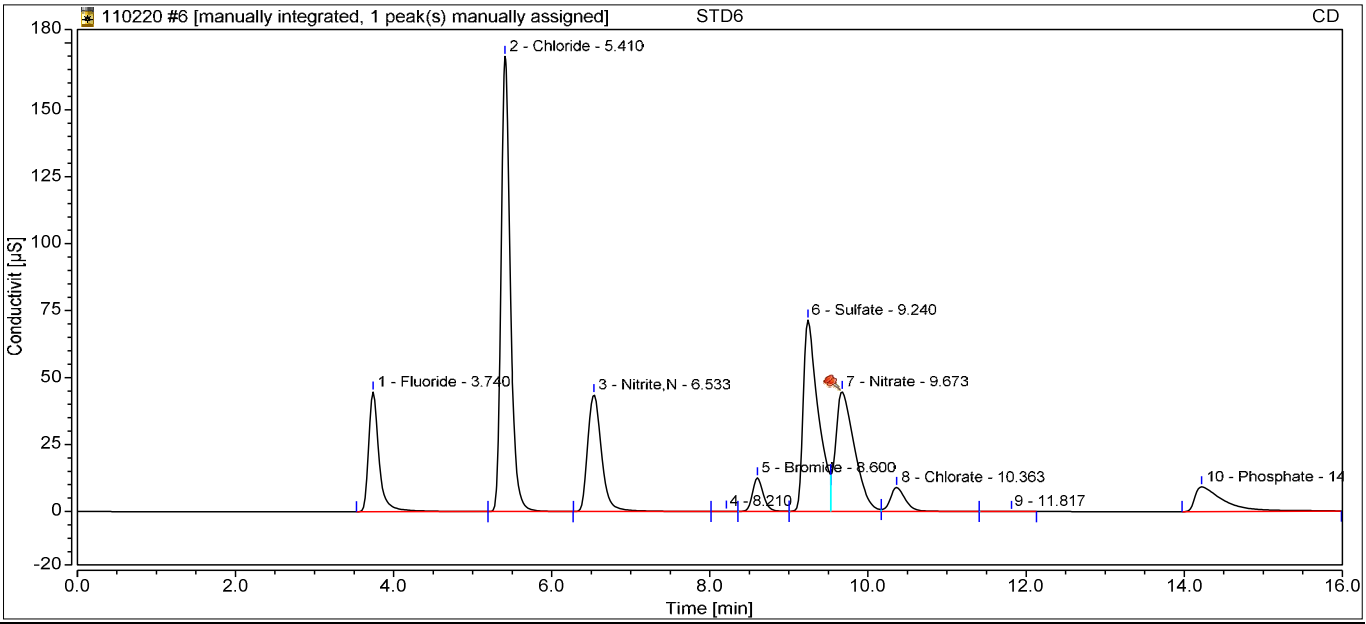
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.611	10.2228	10.2228	1.0000
2	5.42	Chloride	BMB	11.462	50.0272	50.0272	1.0000
3	6.54	Nitrite,N	BMB	4.877	10.3135	10.3135	1.0000
5	8.63	Bromide	M	1.014	9.9796	9.9796	1.0000
6	9.34	Sulfate	M	8.089	50.5200	50.5200	1.0000
7	9.75	Nitrate	M	6.097	9.8832	9.8832	1.0000
8	10.40	Chlorate	MB	1.032	9.9918	9.9918	1.0000
9	14.37	Phosphate	BM *	1.834	9.8223	9.8223	1.0000
Total:			**0.000**	**38.017**		**160.76**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BD6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



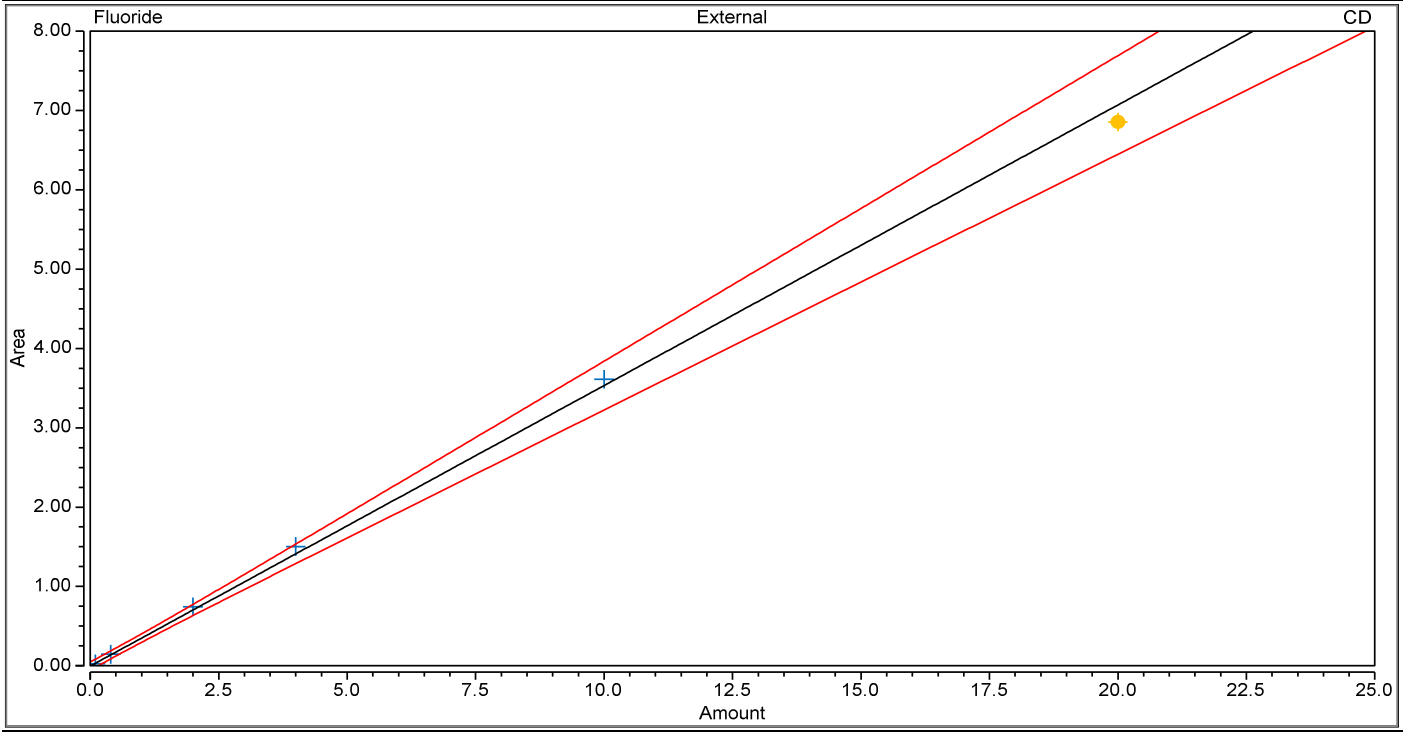
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	6.855	19.3940	19.3940	1.0000
2	5.41	Chloride	BMB	22.844	99.7639	99.7639	1.0000
3	6.53	Nitrite,N	BMB	8.975	19.0121	19.0121	1.0000
5	8.60	Bromide	M	2.028	20.0338	20.0338	1.0000
6	9.24	Sulfate	M	15.864	99.0635	99.0635	1.0000
7	9.67	Nitrate	M ^	12.426	20.1671	20.1671	1.0000
8	10.36	Chlorate	M	2.009	19.5694	19.5694	1.0000
10	14.22	Phosphate	BM *	3.933	20.6283	20.6283	1.0000
Total:			**0.000**	**74.933**		**317.63**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0040
Evaluation Type	Area	*Slope (C1)*	0.3537
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9985

Calibration Plot **Fluoride**



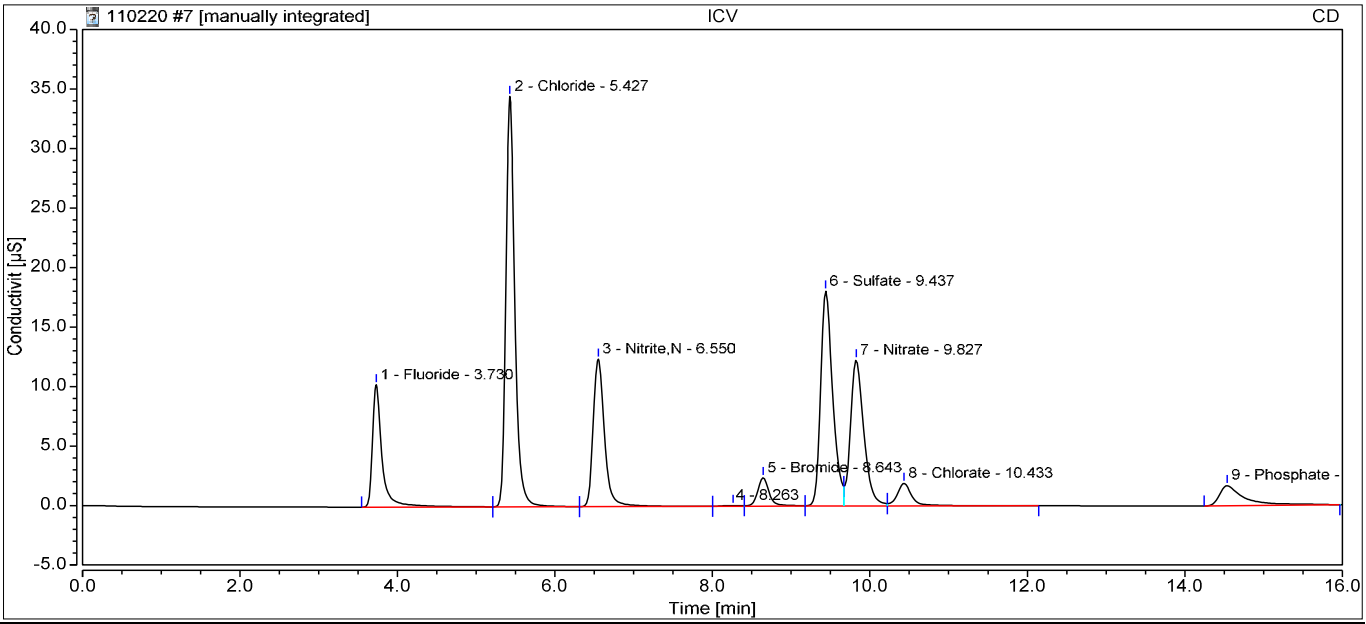
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0254	0.0254	0.025	0.197
2	STD2	2	0.4000	0.1446	0.1446	0.145	0.916
3	STD3	3	2.0000	0.7445	0.7445	0.745	5.182
4	STD4	4	4.0000	1.5036	1.5036	1.504	10.507
5	STD5	5	10.0000	3.6113	3.6113	3.611	24.538
6	STD6	6	20.0000	6.8547	6.8547	6.855	44.677

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



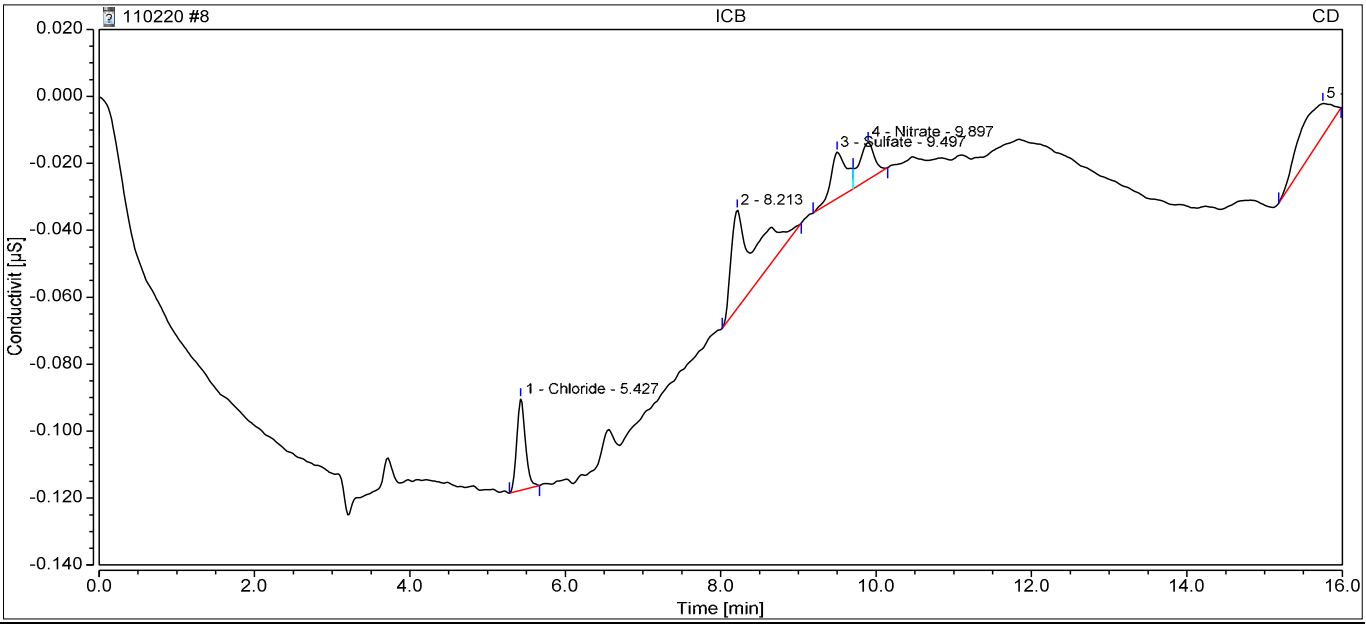
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.447	4.1020	4.1020	1.0000
2	5.43	Chloride	BMB	4.553	19.8399	19.8399	1.0000
3	6.55	Nitrite,N	BMB	2.061	4.3359	4.3359	1.0000
5	8.64	Bromide	M	0.413	4.0106	4.0106	1.0000
6	9.44	Sulfate	M	3.227	20.1622	20.1622	1.0000
7	9.83	Nitrate	M	2.405	3.8850	3.8850	1.0000
8	10.43	Chlorate	MB	0.422	4.0019	4.0019	1.0000
9	14.54	Phosphate	BM *	0.631	3.6292	3.6292	1.0000
Total:			**0.000**	**15.159**		**63.97**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**BD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:



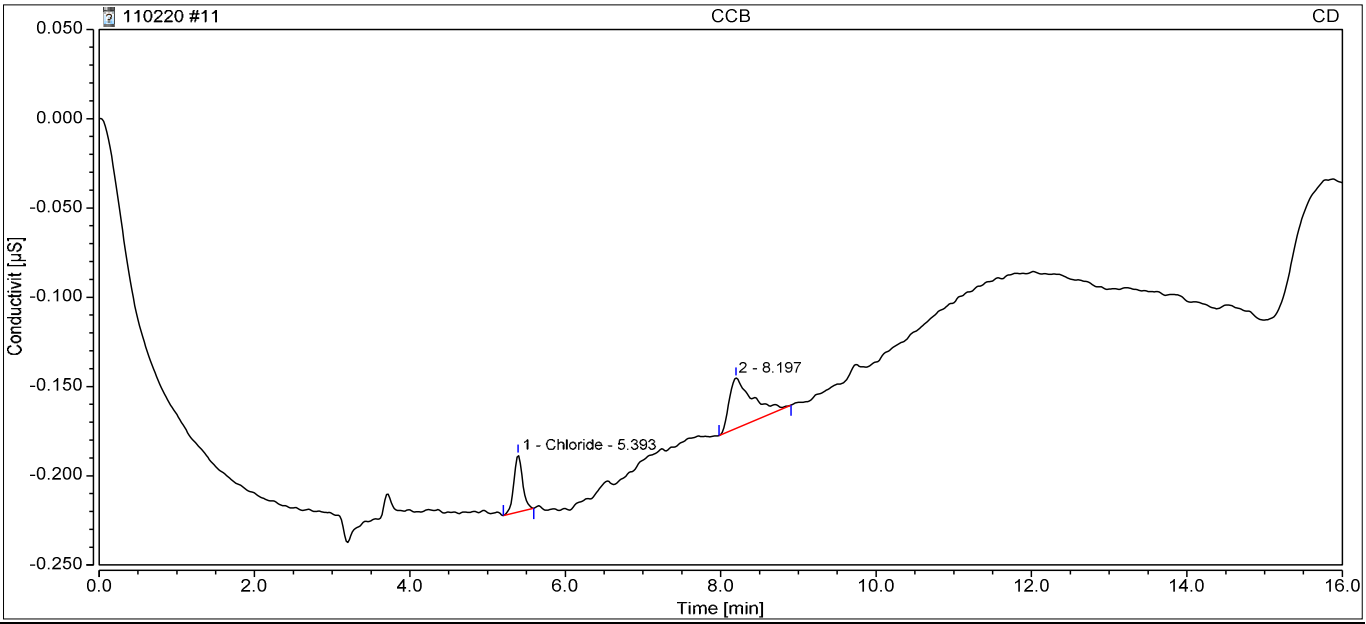
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.43	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.50	Sulfate	BM	0.003	0.0318	0.0318	1.0000
4	9.90	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.03**	

11 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 09:31**	*Sample Weight:*	**1.0000**

Run Time:



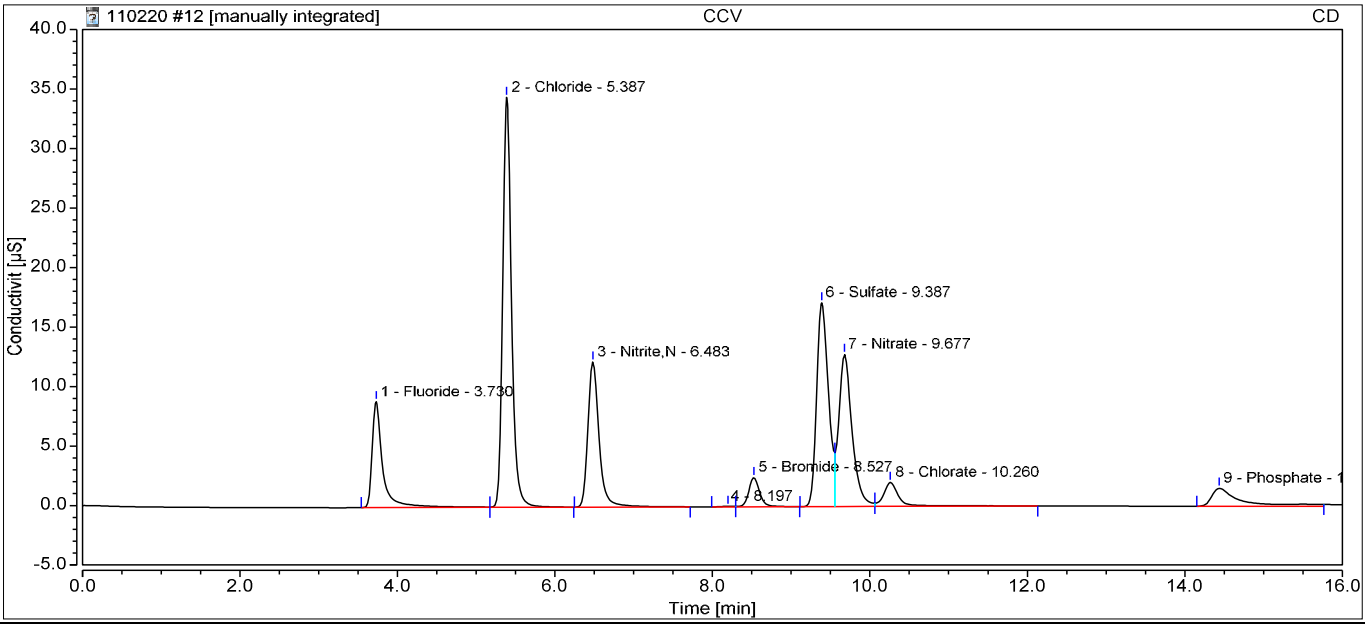
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.00**	

12 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 09:49**	*Sample Weight:*	**1.0000**

Run Time:



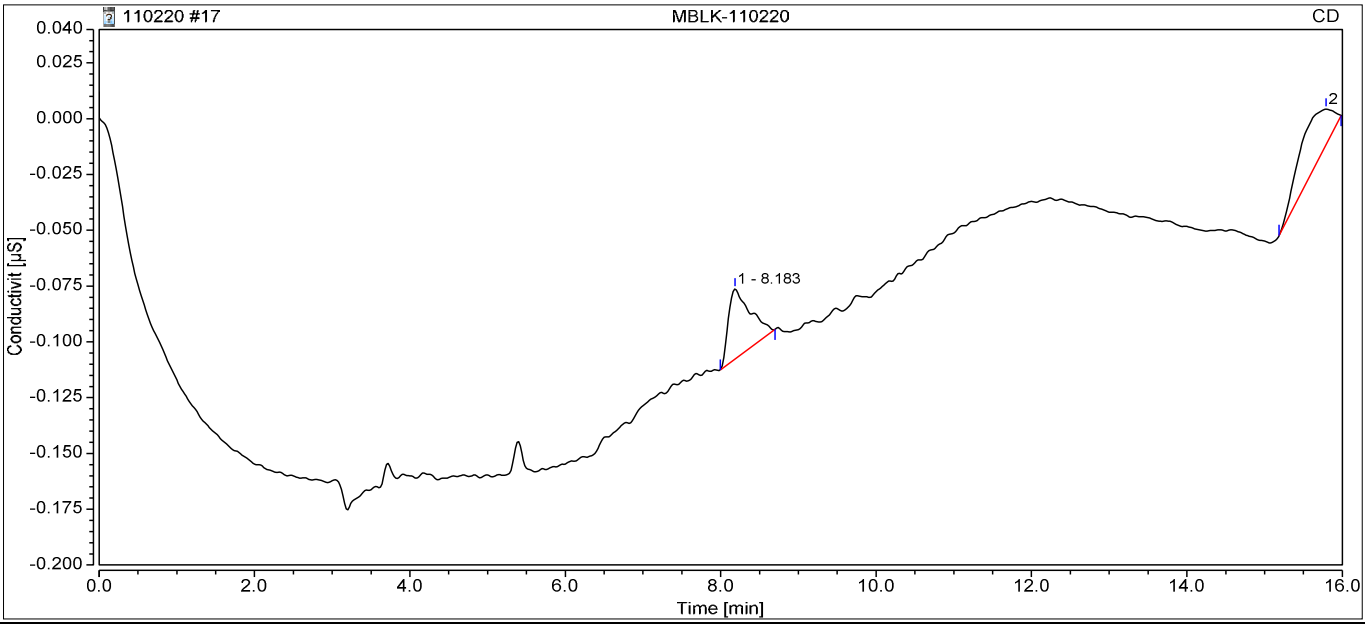
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.378	3.9067	3.9067	1.0000
2	5.39	Chloride	BMB	4.469	19.4721	19.4721	1.0000
3	6.48	Nitrite,N	BMB	2.025	4.2582	4.2582	1.0000
5	8.53	Bromide	MB	0.394	3.8236	3.8236	1.0000
6	9.39	Sulfate	BM	2.952	18.4420	18.4420	1.0000
7	9.68	Nitrate	M	2.516	4.0641	4.0641	1.0000
8	10.26	Chlorate	MB	0.460	4.3774	4.3774	1.0000
9	14.44	Phosphate	BM *	0.637	3.6574	3.6574	1.0000
Total:			**0.000**	**14.829**		**62.00**	

17 MBLK-110220

Sample Name:	**MBLK-110220**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:19**	*Sample Weight:*	**1.0000**

Run Time:



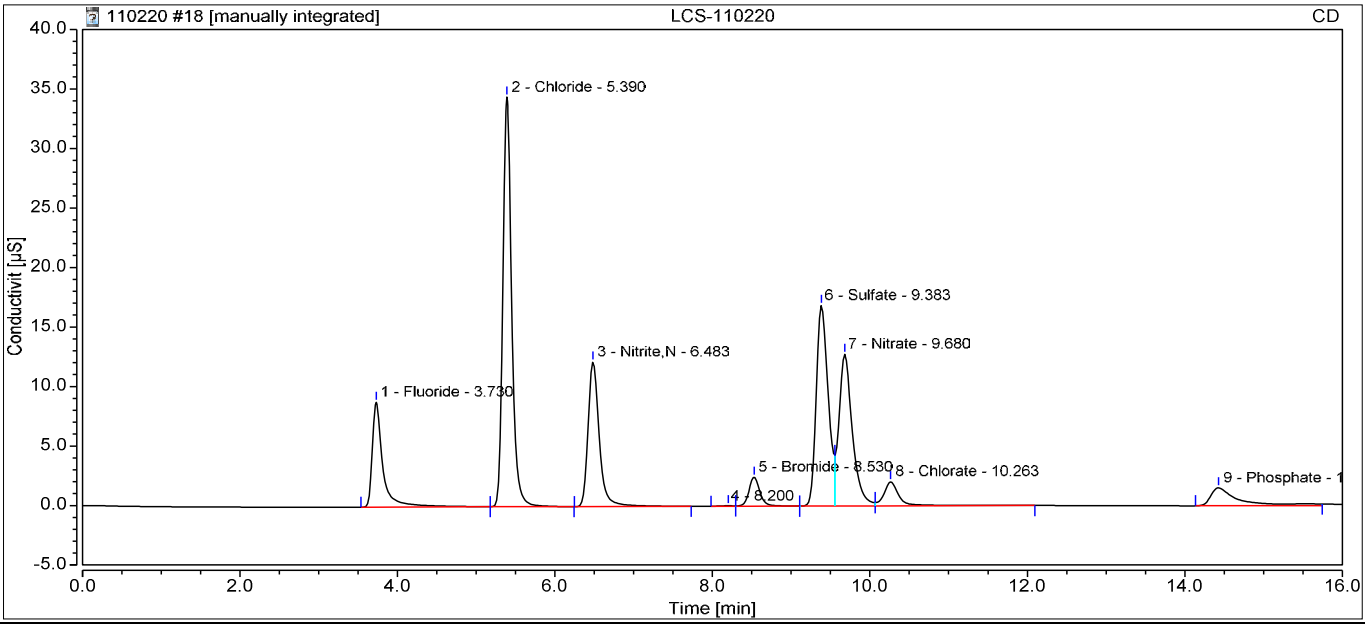
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

18 LCS-110220

Sample Name:	**LCS-110220**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:37**	*Sample Weight:*	**1.0000**

Run Time:



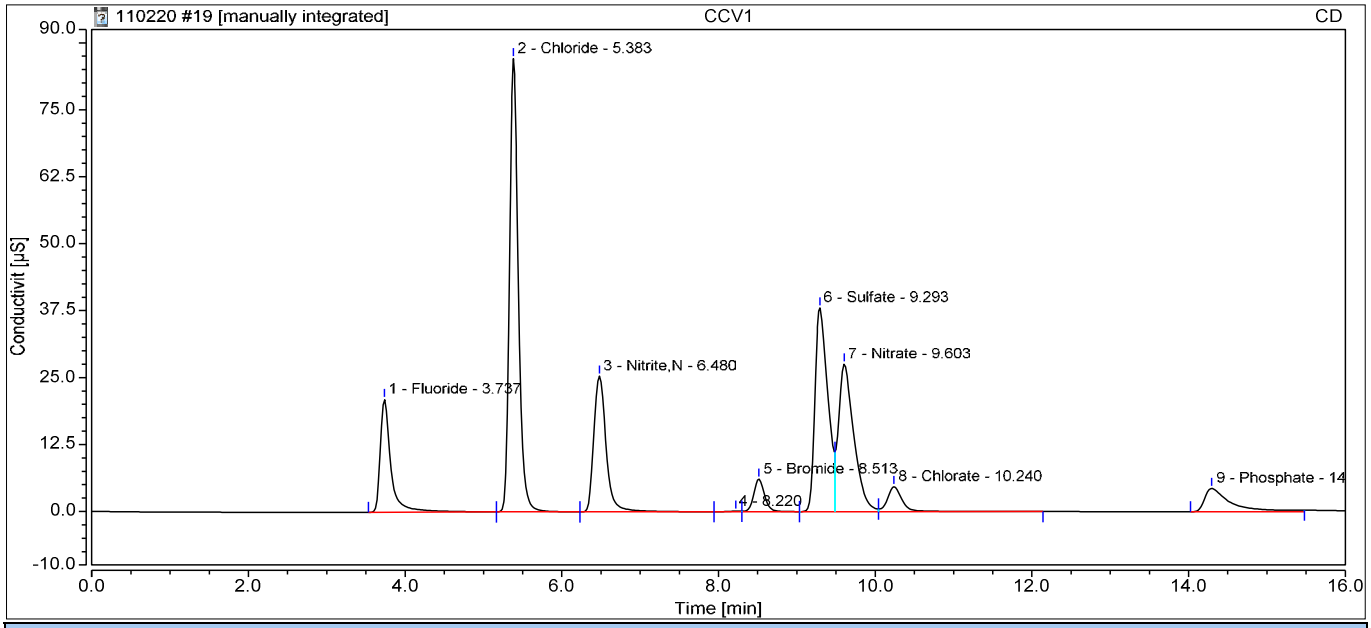
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.373	3.8936	3.8936	1.0000
2	5.39	Chloride	BMB	4.480	19.5205	19.5205	1.0000
3	6.48	Nitrite,N	BMB	2.026	4.2612	4.2612	1.0000
5	8.53	Bromide	M	0.394	3.8281	3.8281	1.0000
6	9.38	Sulfate	M	2.940	18.3657	18.3657	1.0000
7	9.68	Nitrate	M	2.526	4.0808	4.0808	1.0000
8	10.26	Chlorate	MB	0.457	4.3462	4.3462	1.0000
9	14.43	Phosphate	BM *	0.635	3.6474	3.6474	1.0000
Total:			**0.000**	**14.830**		**61.94**	

19 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 11:55**	*Sample Weight:*	**1.0000**

Run Time:



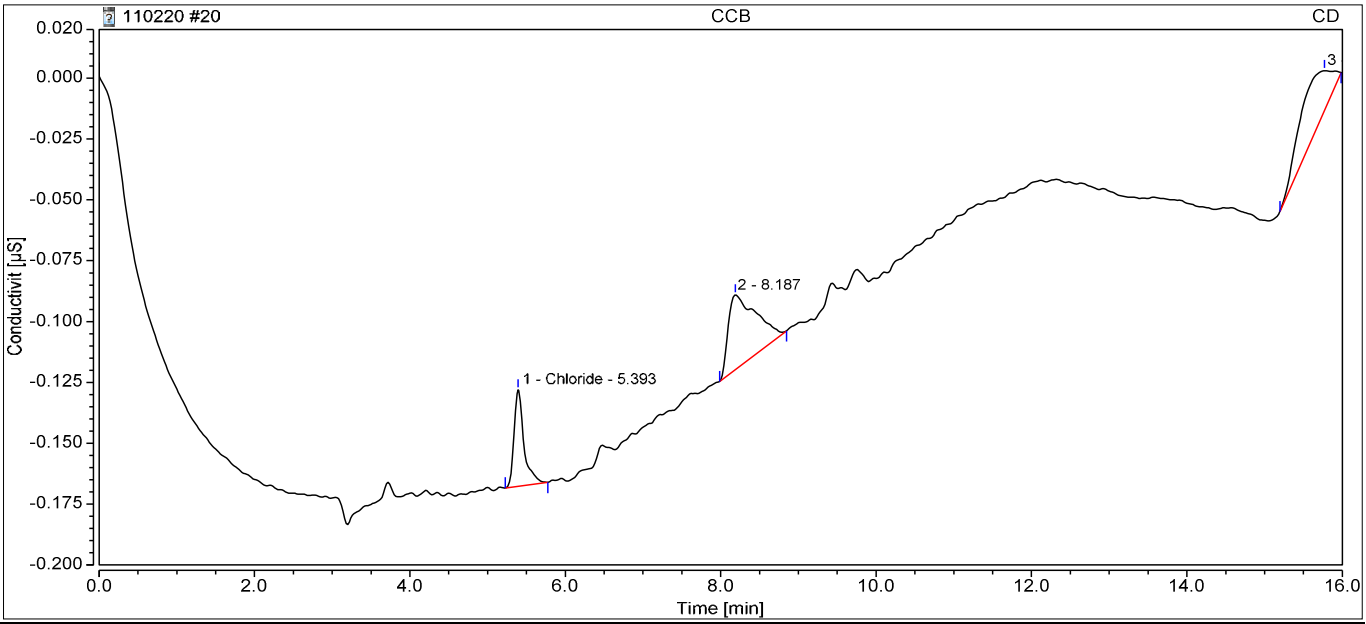
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.319	9.3970	9.3970	1.0000
2	5.38	Chloride	BMB	11.032	48.1486	48.1486	1.0000
3	6.48	Nitrite,N	BMB	4.622	9.7729	9.7729	1.0000
5	8.51	Bromide	M	0.981	9.6479	9.6479	1.0000
6	9.29	Sulfate	M	7.282	45.4766	45.4766	1.0000
7	9.60	Nitrate	M	6.275	10.1717	10.1717	1.0000
8	10.24	Chlorate	MB	1.017	9.8384	9.8384	1.0000
9	14.29	Phosphate	BM *	1.677	9.0119	9.0119	1.0000
Total:			**0.000**	**36.204**		**151.46**	

20 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/02/2020 12:13**	*Sample Weight:*	**1.0000**

Run Time:



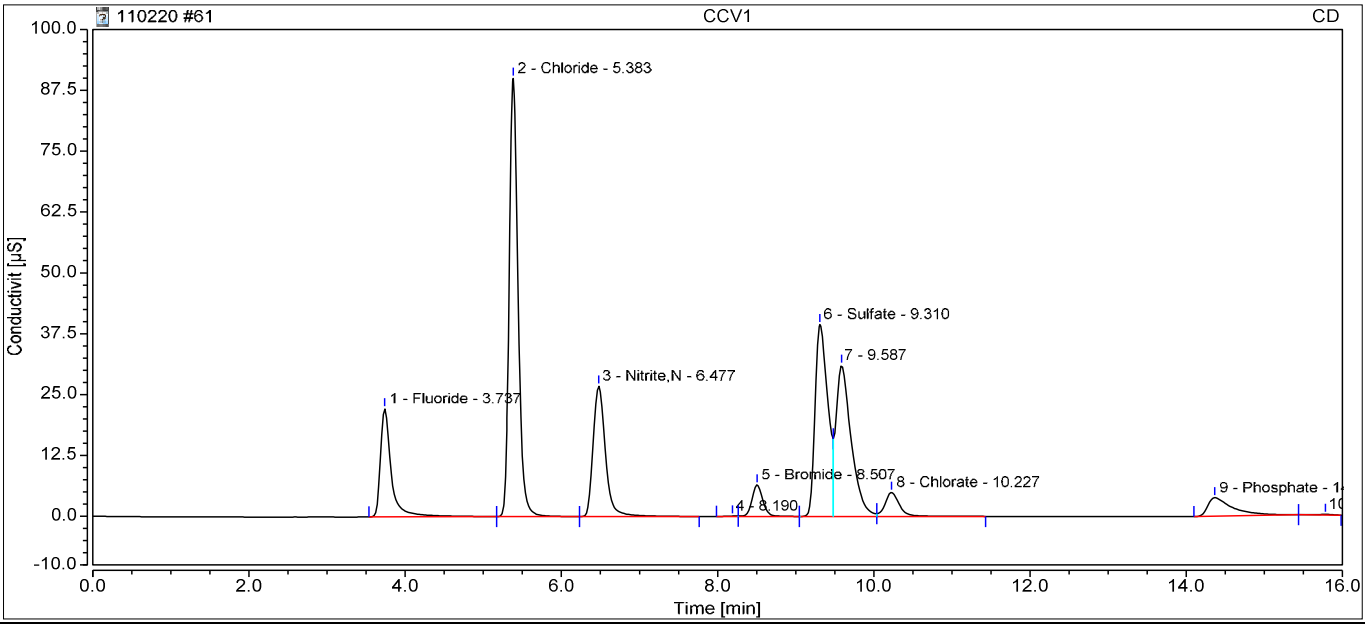
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.006**		**0.00**	

61 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 00:48**	*Sample Weight:*	**1.0000**

Run Time:



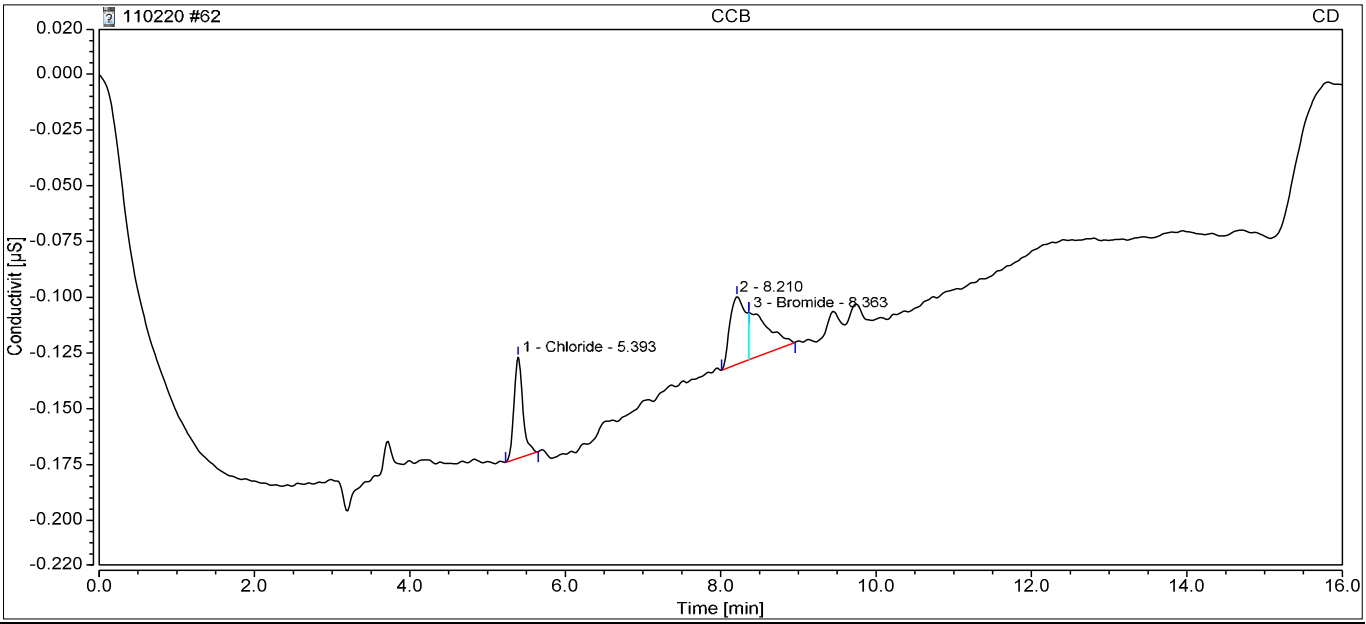
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.573	10.1147	10.1147	1.0000
2	5.38	Chloride	BMB	11.759	51.3256	51.3256	1.0000
3	6.48	Nitrite,N	BMB	4.916	10.3969	10.3969	1.0000
5	8.51	Bromide	M	1.048	10.3133	10.3133	1.0000
6	9.31	Sulfate	M	7.437	46.4495	46.4495	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
8	10.23	Chlorate	MB	1.051	10.1739	10.1739	1.0000
9	14.37	Phosphate	BMB	1.383	7.5008	7.5008	1.0000
Total:			**0.000**	**31.168**		**146.27**	

62 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 01:25**	*Sample Weight:*	**1.0000**

Run Time:



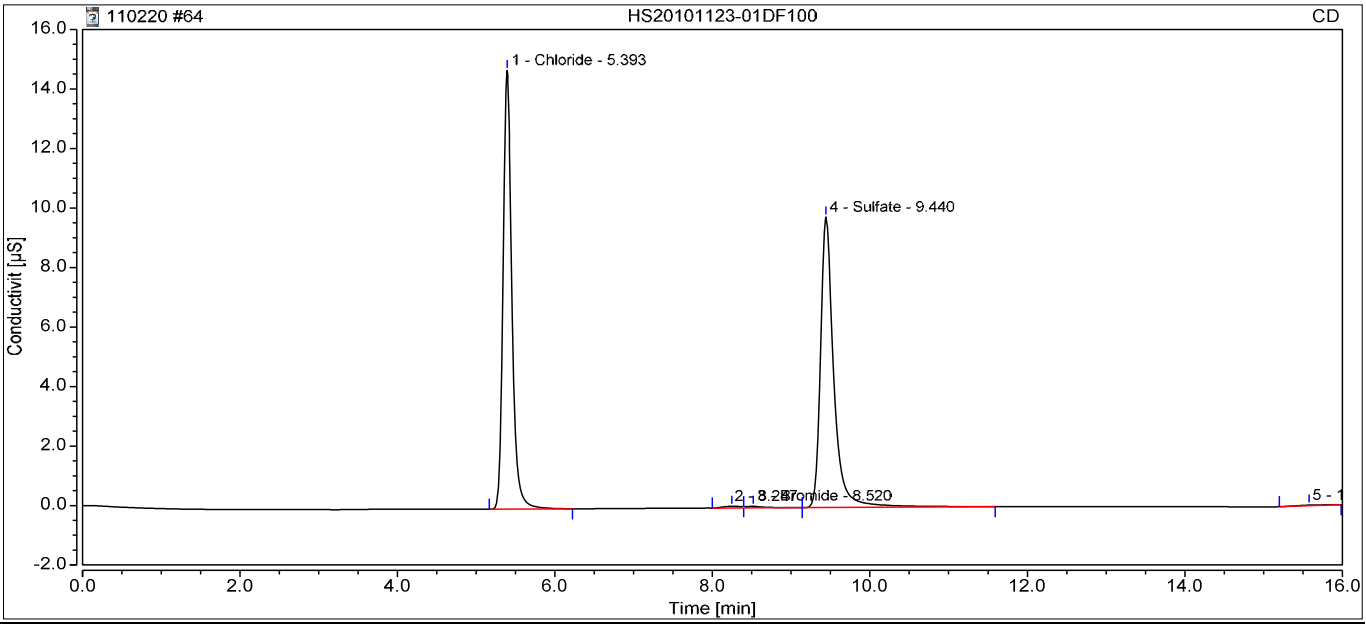
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.36	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.012**		**0.00**	

64 HS20101123-01DF100

Sample Name:	**HS20101123-01DF100**	*Injection Volume:*	**5.00**
Vial Number:	**RD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**100.0000**
Recording Time:	**11/03/2020 02:01**	*Sample Weight:*	**1.0000**

Run Time:



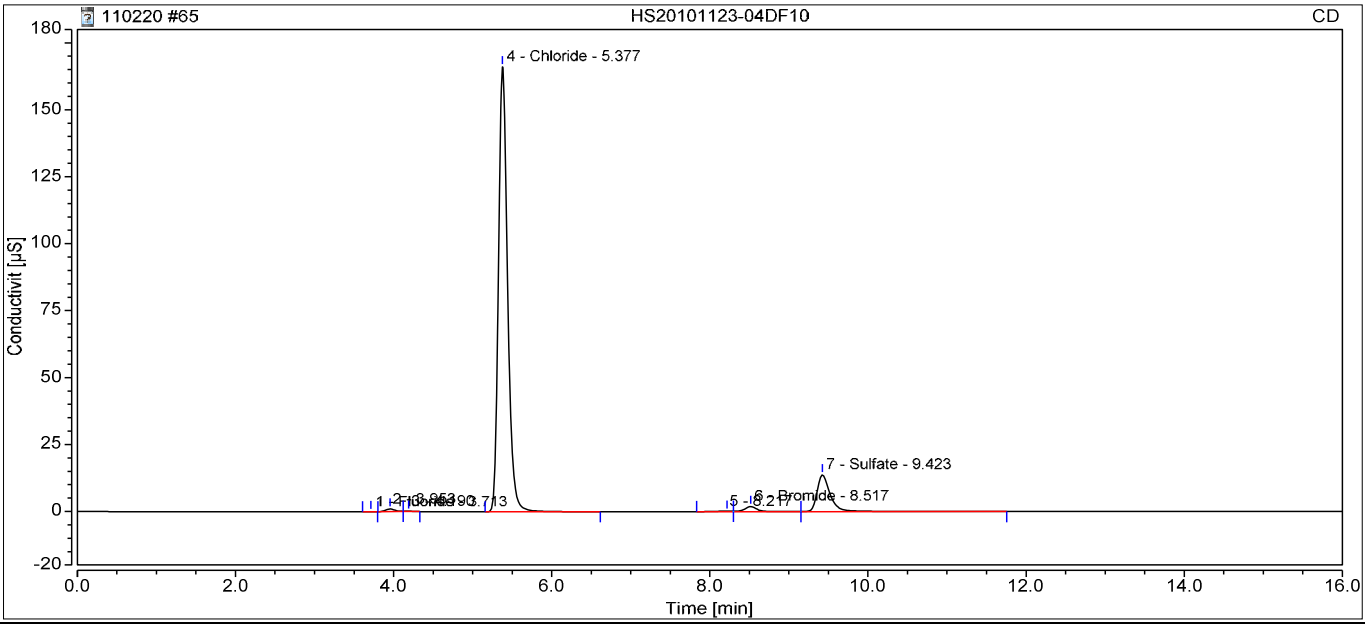
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	100.0000
1	5.39	Chloride	BMB	1.923	8.3474	834.7381	100.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	100.0000
3	8.52	Bromide	M	0.015	0.0627	6.2650	100.0000
4	9.44	Sulfate	MB	1.906	11.9150	1191.4985	100.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	100.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	100.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	100.0000
Total:			**0.000**	**3.844**		**2032.50**	

65 HS20101123-04DF10

Sample Name:	**HS20101123-04DF10**	*Injection Volume:*	**5.00**
Vial Number:	**RE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**11/03/2020 02:19**	*Sample Weight:*	**1.0000**

Run Time:



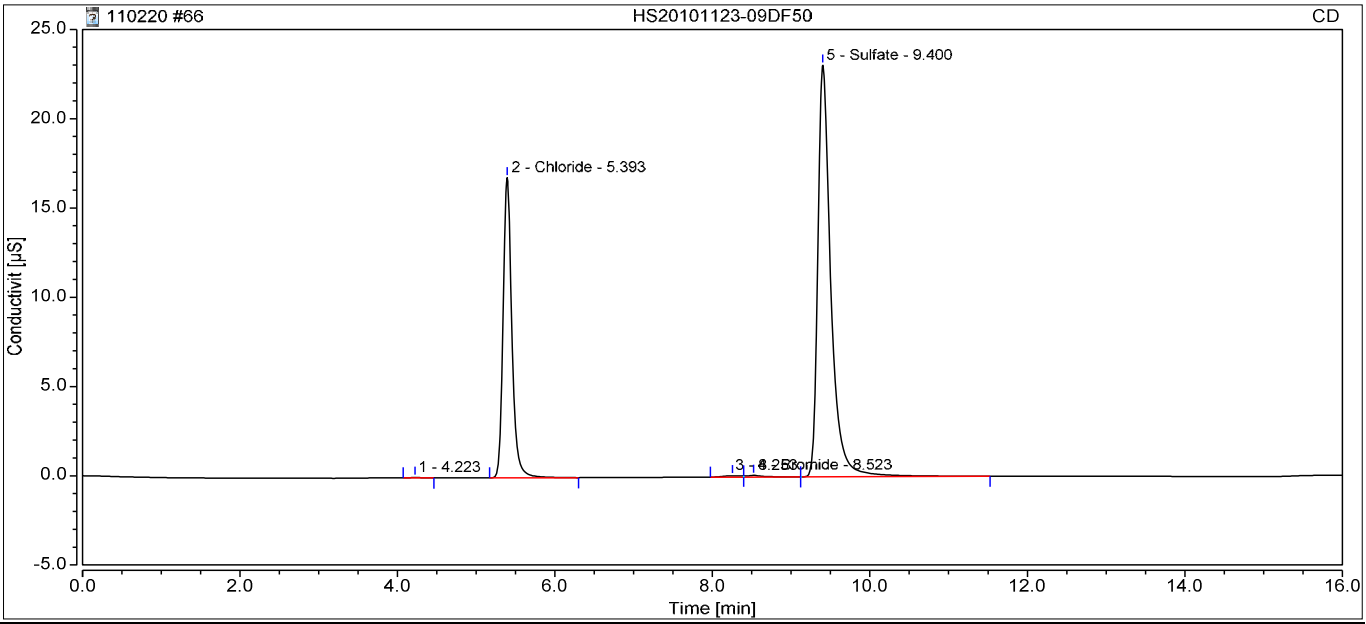
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.71	Fluoride	BMB	0.004	0.0217	0.2171	10.0000
4	5.38	Chloride	BMB	21.890	95.5936	955.9363	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
6	8.52	Bromide	M	0.360	3.4860	34.8601	10.0000
7	9.42	Sulfate	MB	2.640	16.4939	164.9390	10.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**24.893**		**1155.95**	

66 HS20101123-09DF50

Sample Name:	**HS20101123-09DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RE2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**11/03/2020 02:37**	*Sample Weight:*	**1.0000**

Run Time:



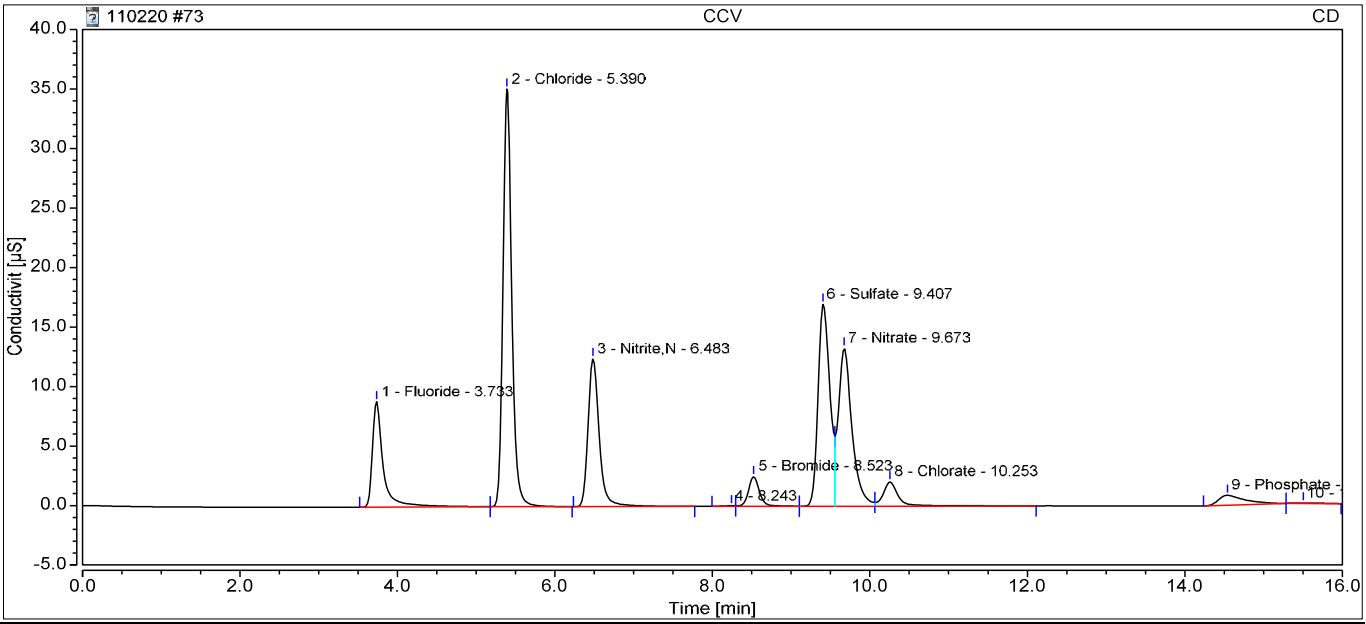
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.39	Chloride	BMB	2.195	9.5332	476.6595	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.52	Bromide	M	0.024	0.1593	7.9672	50.0000
5	9.40	Sulfate	MB	4.426	27.6472	1382.3580	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**6.645**		**1866.98**	

73 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 04:43**	*Sample Weight:*	**1.0000**

Run Time:



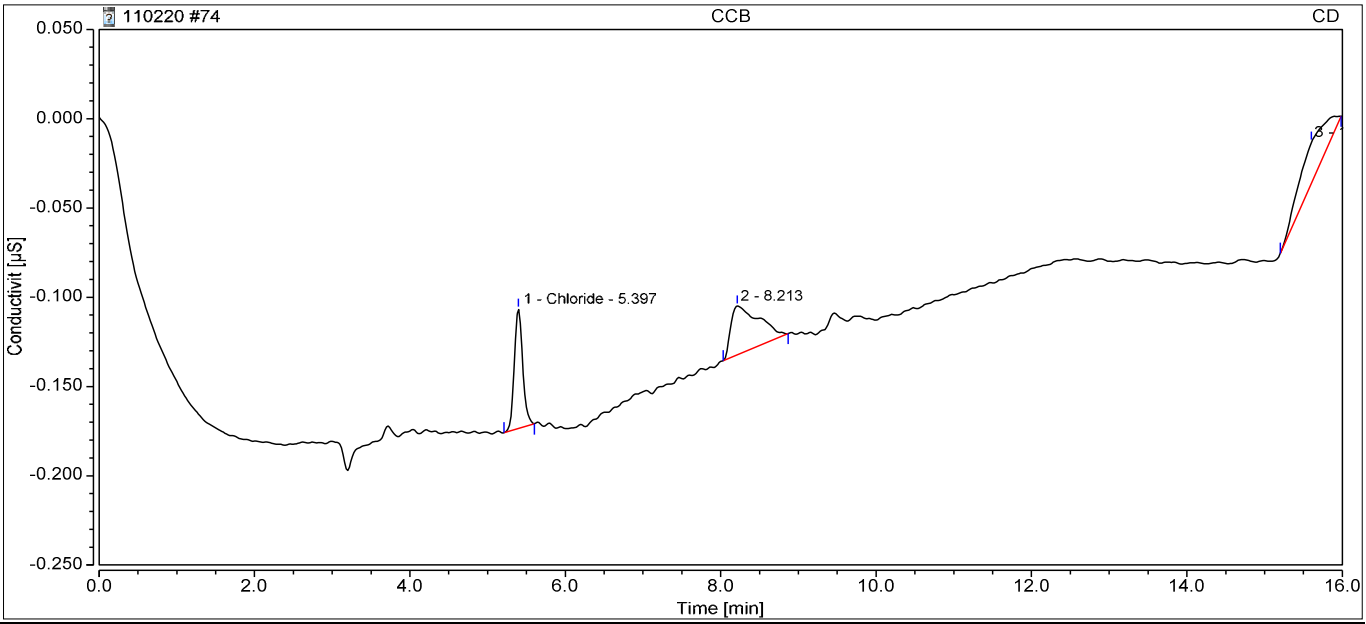
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.407	3.9911	3.9911	1.0000
2	5.39	Chloride	BMB	4.561	19.8713	19.8713	1.0000
3	6.48	Nitrite,N	BMB	2.064	4.3411	4.3411	1.0000
5	8.52	Bromide	M	0.409	3.9779	3.9779	1.0000
6	9.41	Sulfate	M	2.926	18.2839	18.2839	1.0000
7	9.67	Nitrate	M	2.670	4.3143	4.3143	1.0000
8	10.25	Chlorate	MB	0.460	4.3734	4.3734	1.0000
9	14.54	Phosphate	BMB	0.320	2.0291	2.0291	1.0000
Total:			**0.000**	**14.817**		**61.18**	

74 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 05:01**	*Sample Weight:*	**1.0000**

Run Time:



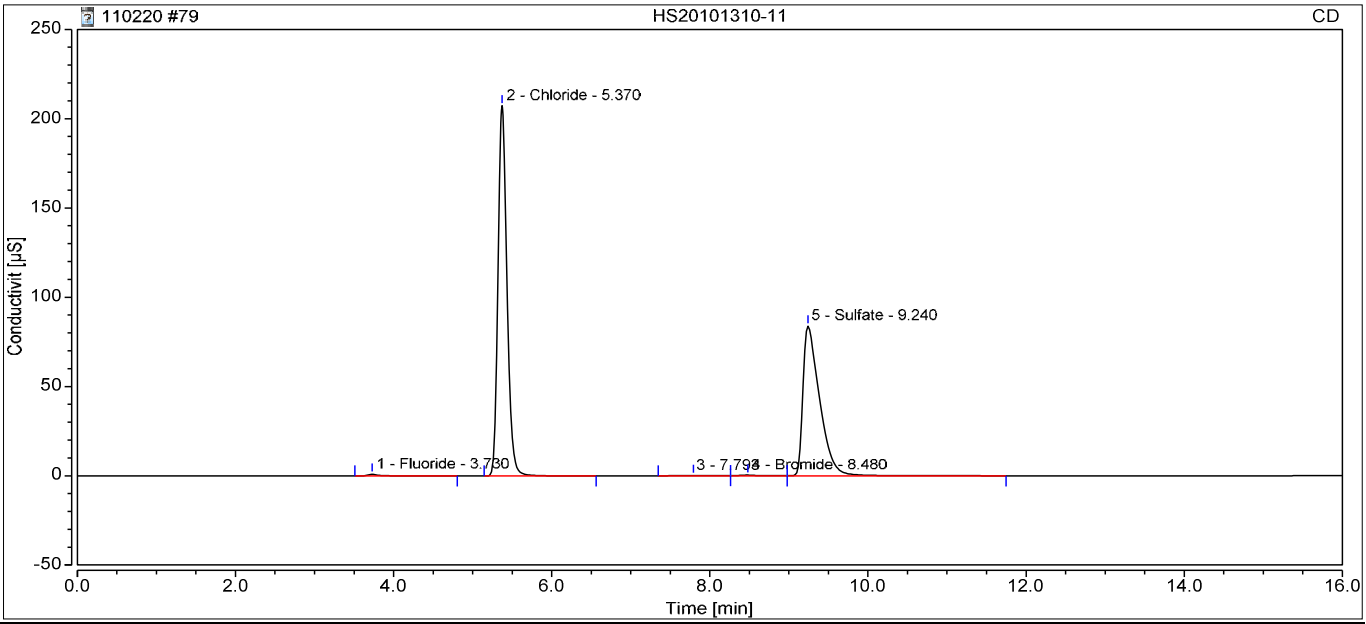
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.40	Chloride	BMB	0.008	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.008**		**0.00**	

79 HS20101310-11

Sample Name:	**HS20101310-11**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 06:31**	*Sample Weight:*	**1.0000**

Run Time:



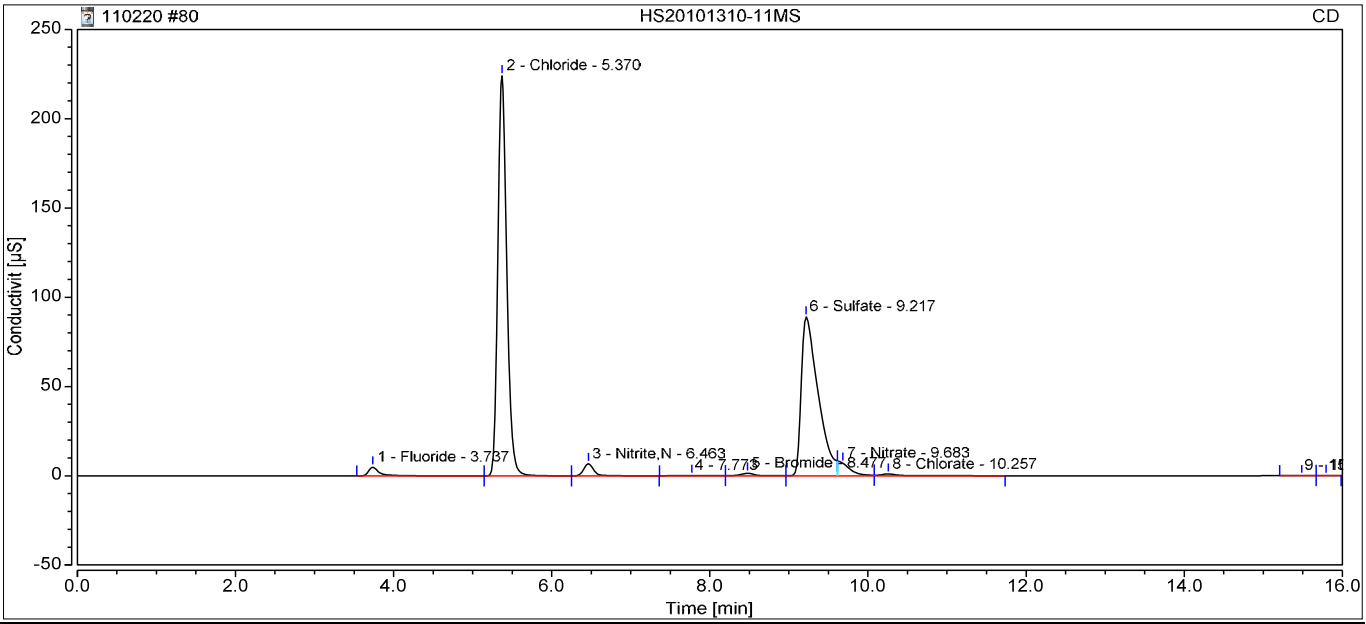
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.181	0.5219	0.5219	1.0000
2	5.37	Chloride	BMB	26.906	117.5115	117.5115	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	8.48	Bromide	M	0.137	1.2739	1.2739	1.0000
5	9.24	Sulfate	MB	20.596	128.6129	128.6129	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**47.820**		**247.92**	

80 HS20101310-11MS

Sample Name:	**HS20101310-11MS**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 06:49**	*Sample Weight:*	**1.0000**

Run Time:



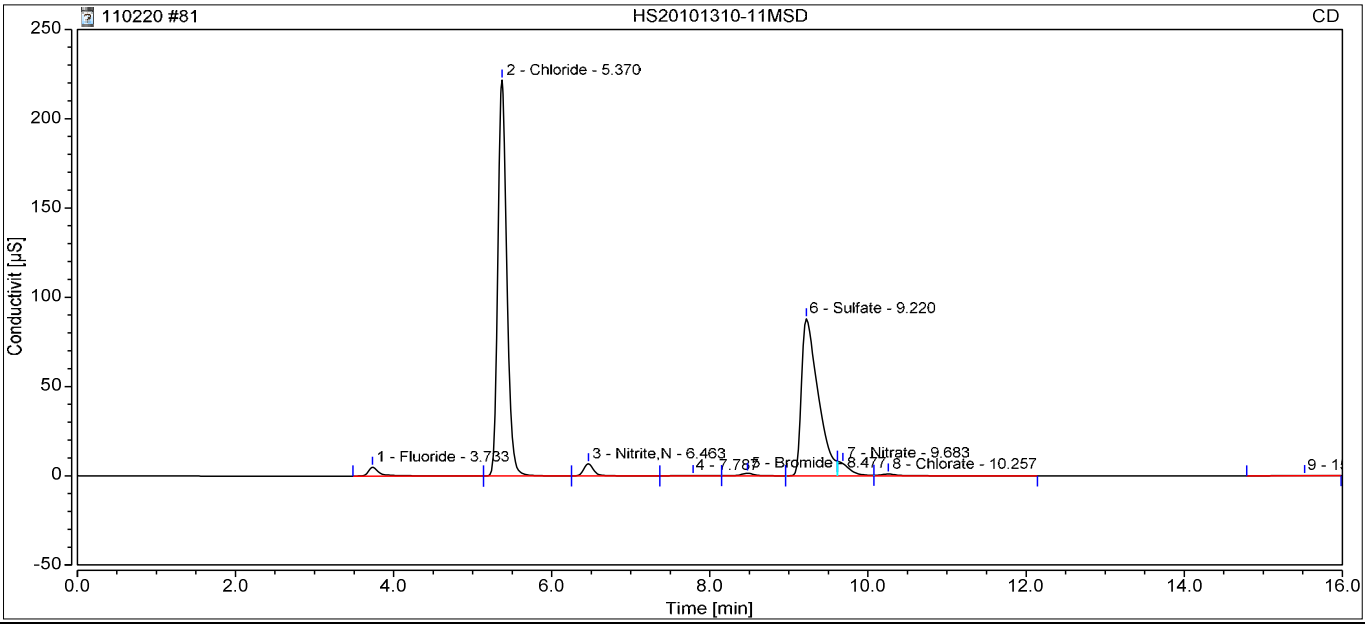
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	0.854	2.4259	2.4259	1.0000
2	5.37	Chloride	BMB	29.112	127.1522	127.1522	1.0000
3	6.46	Nitrite,N	BMB	1.022	2.1309	2.1309	1.0000
5	8.48	Bromide	M	0.322	3.1114	3.1114	1.0000
6	9.22	Sulfate	M	22.026	137.5388	137.5388	1.0000
7	9.68	Nitrate	M	1.405	2.2594	2.2594	1.0000
8	10.26	Chlorate	MB	0.278	2.5865	2.5865	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**55.019**		**277.21**	

81 HS20101310-11MSD

Sample Name:	**HS20101310-11MSD**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 07:07**	*Sample Weight:*	**1.0000**

Run Time:



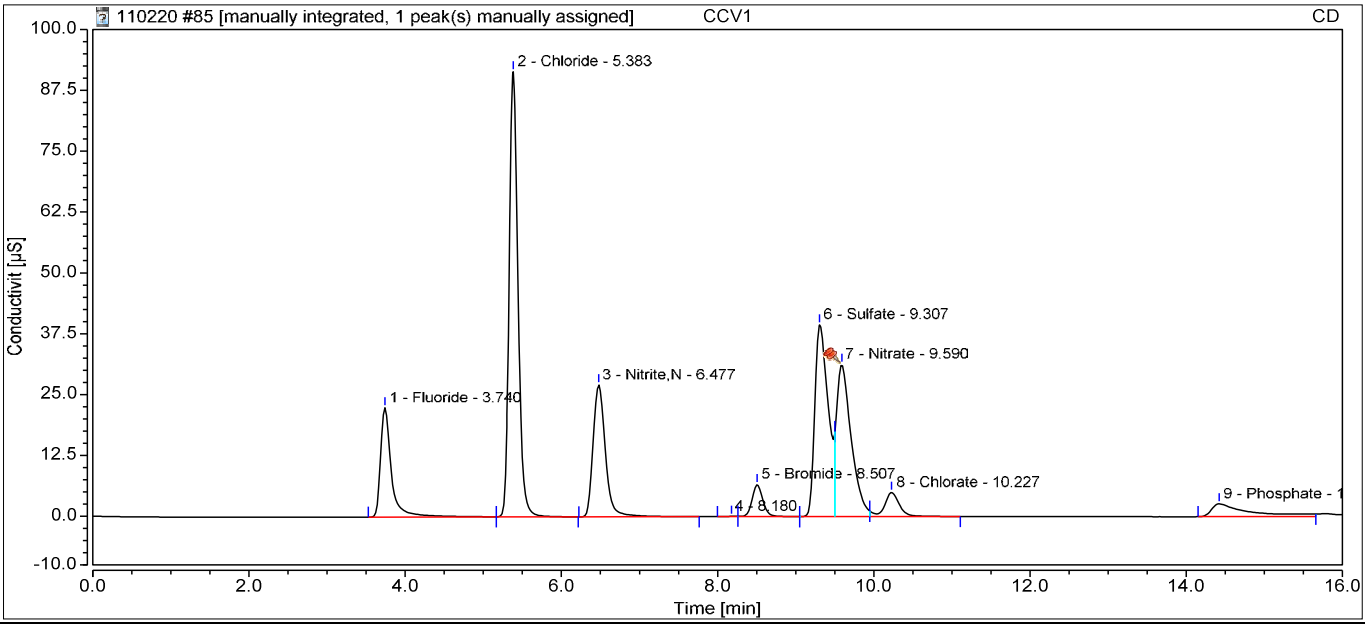
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.837	2.3791	2.3791	1.0000
2	5.37	Chloride	BMB	28.776	125.6800	125.6800	1.0000
3	6.46	Nitrite,N	BMB	1.011	2.1077	2.1077	1.0000
5	8.48	Bromide	M	0.330	3.1910	3.1910	1.0000
6	9.22	Sulfate	M	21.664	135.2784	135.2784	1.0000
7	9.68	Nitrate	M	1.358	2.1830	2.1830	1.0000
8	10.26	Chlorate	MB	0.289	2.6969	2.6969	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**54.265**		**273.52**	

85 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 08:19**	*Sample Weight:*	**1.0000**

Run Time:



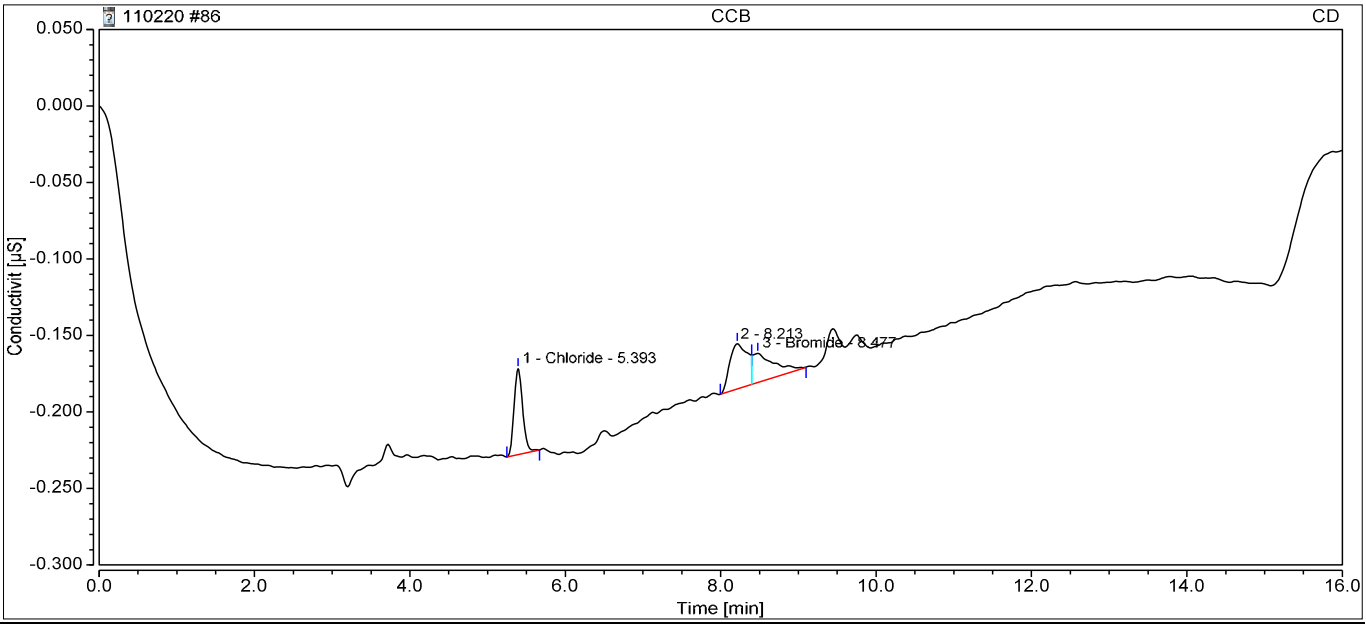
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.618	10.2417	10.2417	1.0000
2	5.38	Chloride	BMB	11.912	51.9929	51.9929	1.0000
3	6.48	Nitrite,N	BMB	4.968	10.5078	10.5078	1.0000
5	8.51	Bromide	M *	1.058	10.4121	10.4121	1.0000
6	9.31	Sulfate	M *	7.929	49.5173	49.5173	1.0000
7	9.59	Nitrate	M *^	6.666	10.8076	10.8076	1.0000
8	10.23	Chlorate	MB*	1.108	10.7343	10.7343	1.0000
9	14.42	Phosphate	BM *	1.453	7.8616	7.8616	1.0000
Total:			**0.000**	**38.712**		**162.08**	

86 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 08:55**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.007	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.48	Bromide	MB	0.006	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.00**	

Sequence: 110320
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	me	Status
	STD1		Calibration	BD1	1.00	1	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD2		Calibration	BD2	1.00	2	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD3		Calibration	BD3	1.00	3	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD4		Calibration	BD4	1.00	4	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD5		Calibration	BD5	1.00	5	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	STD6		Calibration	BD6	1.00	6	Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICV		Unknown	BD7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	ICB		Unknown	BD8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	MBLK-110320		Unknown	BA7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	LCS-110320		Unknown	BA8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB7	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-05DF2		Unknown	GB1	2.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-06DF2		Unknown	GB2	2.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-07		Unknown	GB3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20101123-08		Unknown	GB4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BB8	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20110128-11DF2		Unknown	GD8	2.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV		Unknown	BA2	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA3	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20110128-11MSDF2		Unknown	GE1	2.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	HS20110128-11MSDDF2		Unknown	GE2	2.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCV1		Unknown	BA4	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished
	CCB		Unknown	BA5	1.00		Anions Program 06022020.1	Anions Processing Method	5.0	Finished

Sequence: 110320
Last Update Operator: alshs.nouser

Inject Time
8/11/2020 10:46:45 AM -05:00
8/11/2020 11:04:45 AM -05:00
8/11/2020 11:22:45 AM -05:00
8/11/2020 11:40:48 AM -05:00
8/11/2020 11:58:48 AM -05:00
8/11/2020 12:16:48 PM -05:00
8/11/2020 12:34:48 PM -05:00
8/11/2020 12:52:50 PM -05:00
11/3/2020 12:34:13 PM -06:00
11/3/2020 12:52:14 PM -06:00
11/3/2020 1:46:18 PM -06:00
11/3/2020 2:04:19 PM -06:00
11/3/2020 4:10:43 PM -06:00
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11/4/2020 6:54:19 AM -06:00
11/4/2020 7:12:19 AM -06:00
11/4/2020 9:00:29 AM -06:00
11/4/2020 9:18:34 AM -06:00
11/4/2020 9:36:38 AM -06:00
11/4/2020 10:30:53 AM -06:00
11/4/2020 10:48:54 AM -06:00
11/4/2020 12:37:04 PM -06:00
11/4/2020 2:07:18 PM -06:00
11/4/2020 2:43:19 PM -06:00
11/4/2020 3:19:26 PM -06:00
11/4/2020 6:01:43 PM -06:00
11/4/2020 6:19:48 PM -06:00
11/4/2020 7:14:00 PM -06:00
11/4/2020 7:32:00 PM -06:00
11/4/2020 9:56:17 PM -06:00
11/4/2020 10:32:20 PM -06:00

Sequence: 101520
Injection #6: STD6

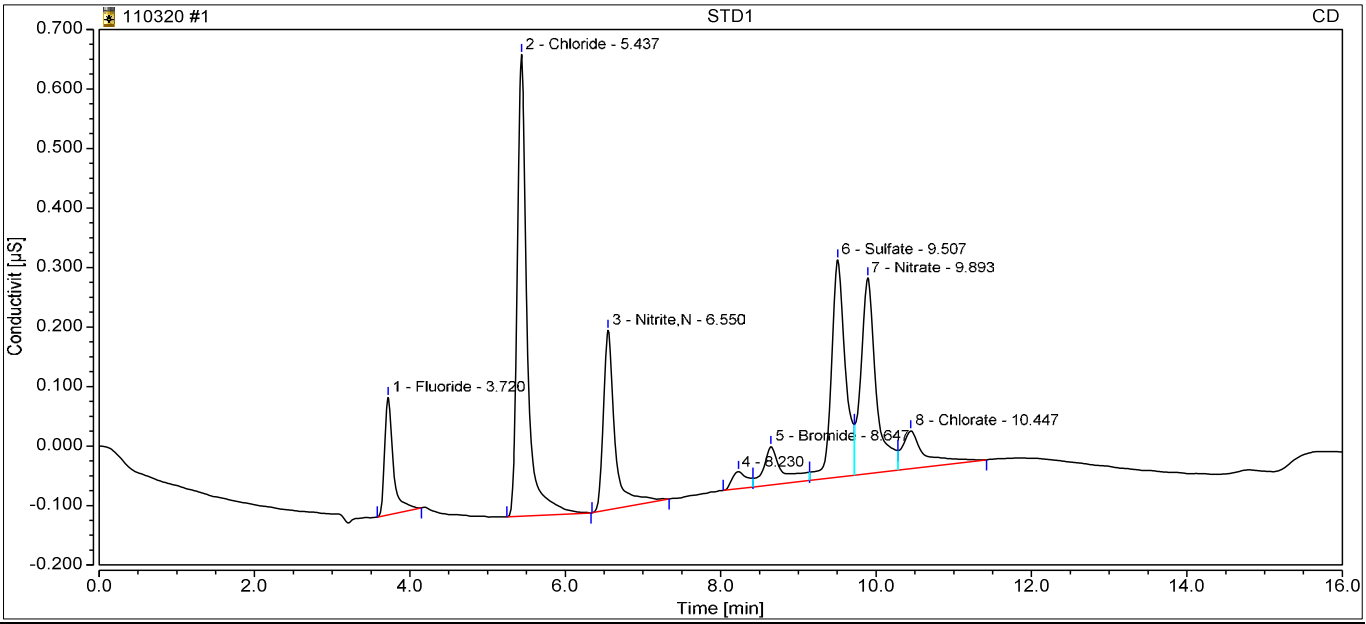
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	***Fluoride***	***Lin, WithOffset, 1/***	***Area***	***6***	***17.3553***	***0.99849***	***-0.0040***	***0.3537***	***0.0000***
2	Chloride	Lin, WithOffset, 1/	Area	6	5.4804	0.99983	0.0129	0.2289	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	26.1376	0.99573	0.0186	0.4711	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	0.9346	0.99999	0.0083	0.1008	0.0000
6	Sulfate	Lin, WithOffset, 1/	Area	6	5.2843	0.99985	-0.0019	0.1602	0.0000
7	Nitrate	Lin, WithOffset, 1/	Area	6	4.5248	0.99988	0.0144	0.6154	0.0000
8	Chlorate	Lin, WithOffset, 1/	Area	6	13.4374	0.99837	0.0139	0.1019	0.0000
10	Phosphate	Lin, WithOffset, 1/	Area	5	18.5357	0.99714	-0.0737	0.1942	0.0000
Maximum					**26.1376**	0.99999			
Minimum					0.9346	**0.99573**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BD1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 10:46**	*Sample Weight:*	**1.0000**

Run Time:



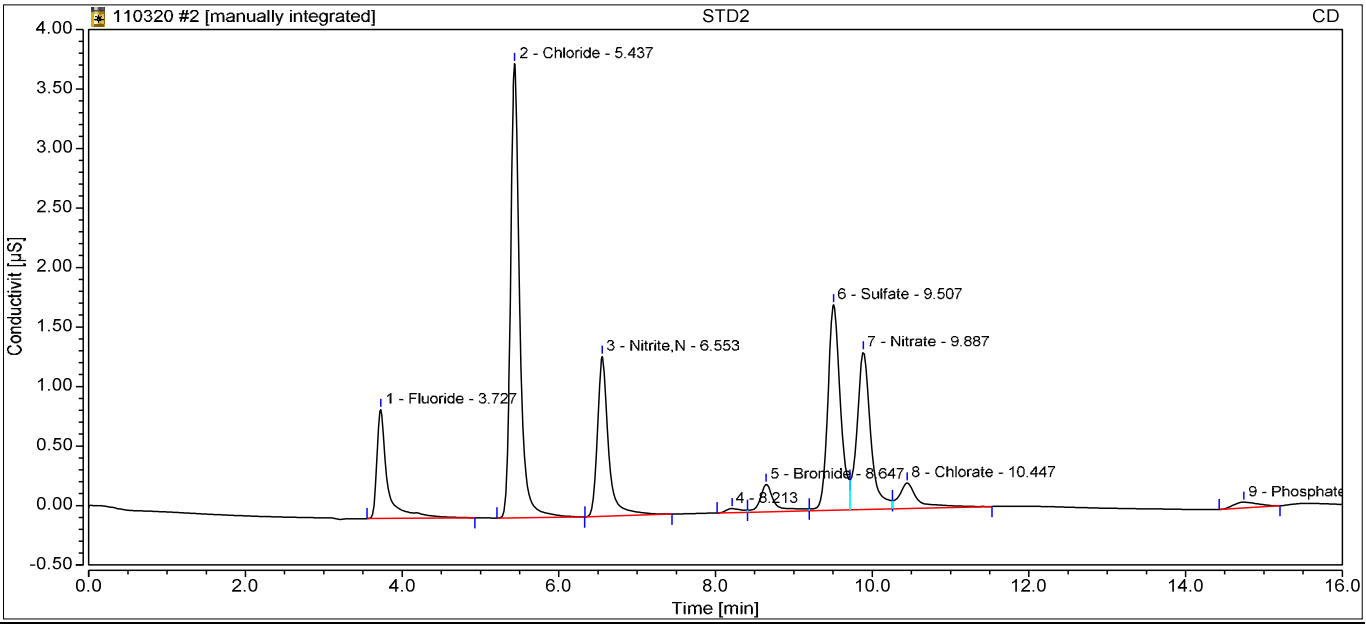
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.025	0.0833	0.0833	1.0000
2	5.44	Chloride	BMB	0.116	0.4487	0.4487	1.0000
3	6.55	Nitrite,N	BMB	0.052	0.0715	0.0715	1.0000
5	8.65	Bromide	M	0.018	0.0997	0.0997	1.0000
6	9.51	Sulfate	M	0.076	0.4861	0.4861	1.0000
7	9.89	Nitrate	M	0.075	0.0985	0.0985	1.0000
8	10.45	Chlorate	MB	0.021	0.0734	0.0734	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.384**		**1.36**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BD2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:04**	*Sample Weight:*	**1.0000**

Run Time:



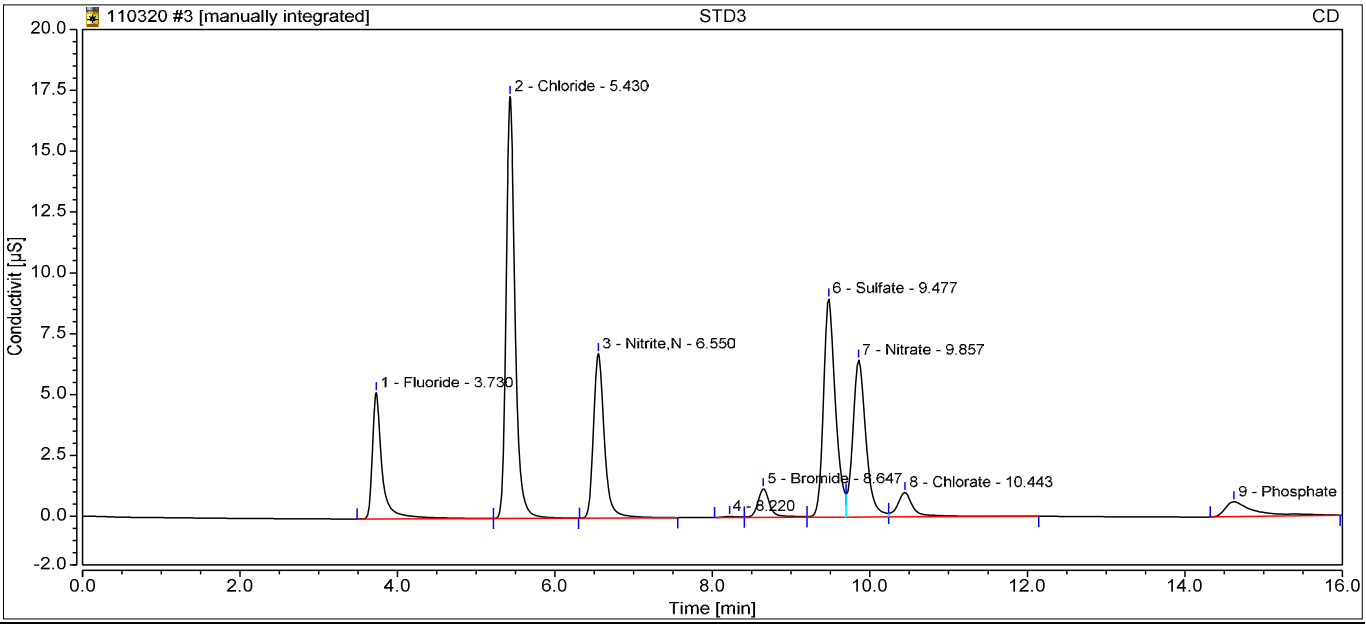
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.145	0.4204	0.4204	1.0000
2	5.44	Chloride	BMB	0.518	2.2084	2.2084	1.0000
3	6.55	Nitrite,N	BMB	0.221	0.4294	0.4294	1.0000
5	8.65	Bromide	M	0.049	0.4041	0.4041	1.0000
6	9.51	Sulfate	M	0.321	2.0151	2.0151	1.0000
7	9.89	Nitrate	M	0.270	0.4147	0.4147	1.0000
8	10.45	Chlorate	MB	0.060	0.4536	0.4536	1.0000
9	14.74	Phosphate	BMB	0.018	0.4703	0.4703	1.0000
Total:			**0.000**	**1.601**		**6.82**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BD3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



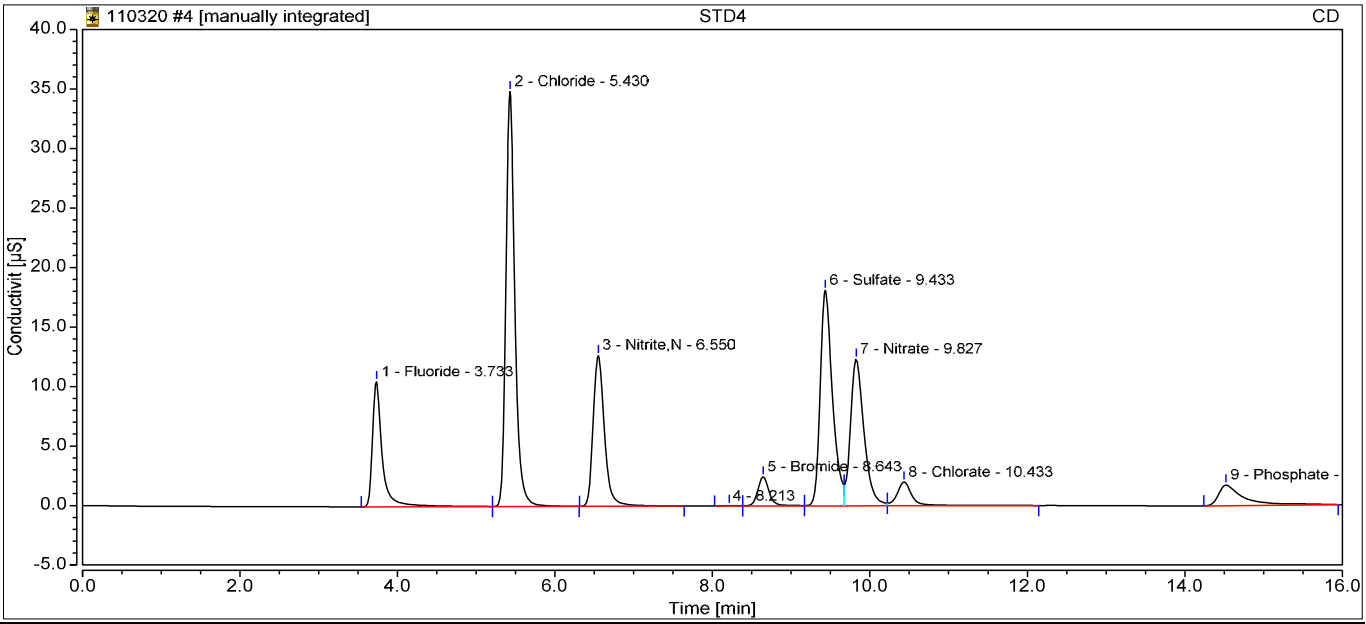
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.745	2.1166	2.1166	1.0000
2	5.43	Chloride	BMB	2.291	9.9533	9.9533	1.0000
3	6.55	Nitrite,N	BMB	1.077	2.2460	2.2460	1.0000
5	8.65	Bromide	M	0.209	1.9882	1.9882	1.0000
6	9.48	Sulfate	M	1.595	9.9688	9.9688	1.0000
7	9.86	Nitrate	M	1.238	1.9883	1.9883	1.0000
8	10.44	Chlorate	MB	0.239	2.2038	2.2038	1.0000
9	14.62	Phosphate	BM *	0.269	1.7634	1.7634	1.0000
Total:			**0.000**	**7.661**		**32.23**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BD4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:40**	*Sample Weight:*	**1.0000**

Run Time:



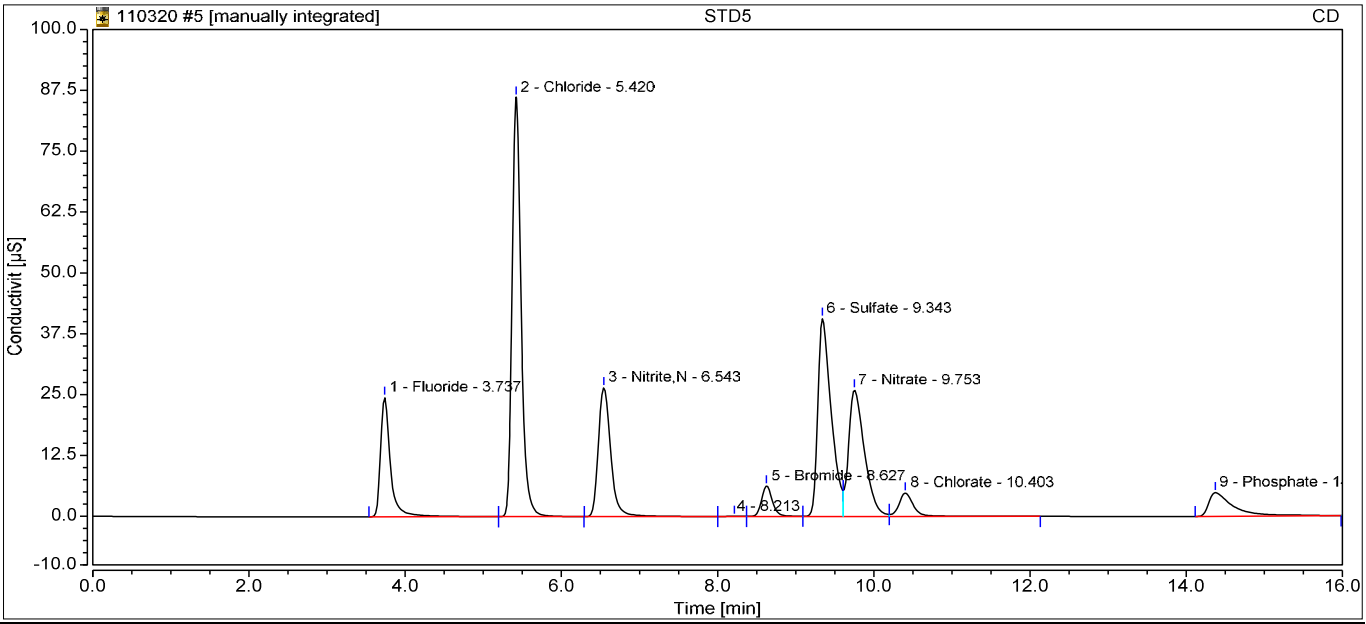
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.504	4.2630	4.2630	1.0000
2	5.43	Chloride	BMB	4.613	20.0986	20.0986	1.0000
3	6.55	Nitrite,N	BMB*	2.104	4.4276	4.4276	1.0000
5	8.64	Bromide	M	0.411	3.9946	3.9946	1.0000
6	9.43	Sulfate	M	3.273	20.4465	20.4465	1.0000
7	9.83	Nitrate	M	2.444	3.9482	3.9482	1.0000
8	10.43	Chlorate	MB	0.443	4.2079	4.2079	1.0000
9	14.52	Phosphate	BM *	0.648	3.7157	3.7157	1.0000
Total:			**0.000**	**15.439**		**65.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BD5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 11:58**	*Sample Weight:*	**1.0000**

Run Time:



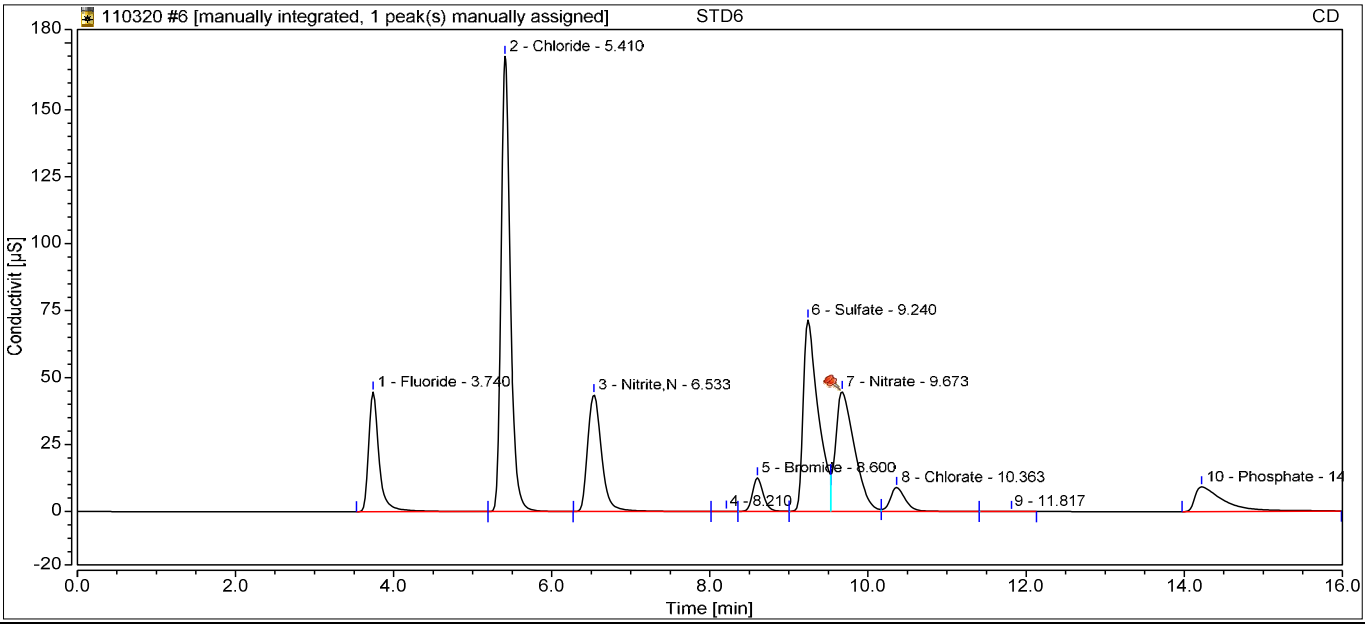
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.611	10.2228	10.2228	1.0000
2	5.42	Chloride	BMB	11.462	50.0272	50.0272	1.0000
3	6.54	Nitrite,N	BMB	4.877	10.3135	10.3135	1.0000
5	8.63	Bromide	M	1.014	9.9796	9.9796	1.0000
6	9.34	Sulfate	M	8.089	50.5200	50.5200	1.0000
7	9.75	Nitrate	M	6.097	9.8832	9.8832	1.0000
8	10.40	Chlorate	MB	1.032	9.9918	9.9918	1.0000
9	14.37	Phosphate	BM *	1.834	9.8223	9.8223	1.0000
Total:			**0.000**	**38.017**		**160.76**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BD6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:16**	*Sample Weight:*	**1.0000**

Run Time:



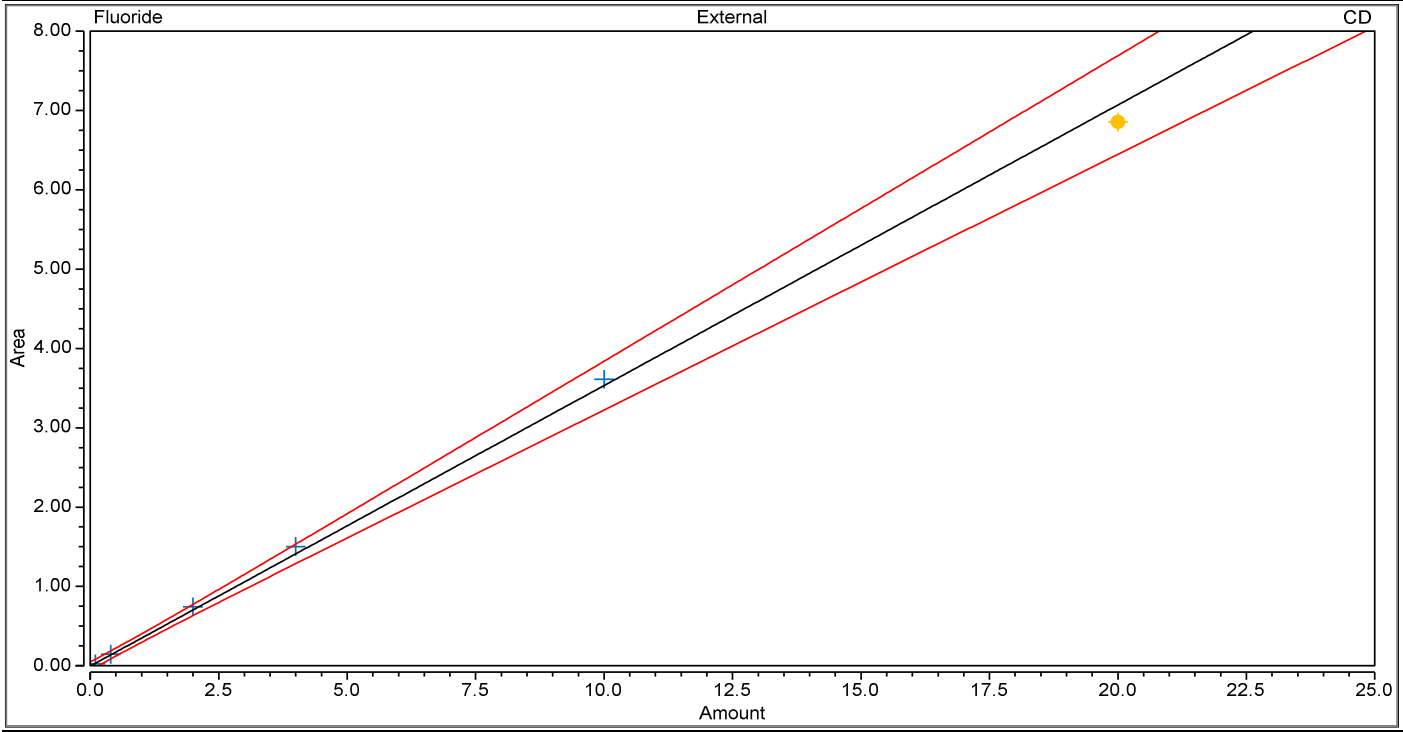
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	6.855	19.3940	19.3940	1.0000
2	5.41	Chloride	BMB	22.844	99.7639	99.7639	1.0000
3	6.53	Nitrite,N	BMB	8.975	19.0121	19.0121	1.0000
5	8.60	Bromide	M	2.028	20.0338	20.0338	1.0000
6	9.24	Sulfate	M	15.864	99.0635	99.0635	1.0000
7	9.67	Nitrate	M ^	12.426	20.1671	20.1671	1.0000
8	10.36	Chlorate	M	2.009	19.5694	19.5694	1.0000
10	14.22	Phosphate	BM *	3.933	20.6283	20.6283	1.0000
Total:			**0.000**	**74.933**		**317.63**	

Calibration

Calibration Details	Fluoride		
Calibration Type	Lin, WithOffset, 1/A	*Offset (C0)*	-0.0040
Evaluation Type	Area	*Slope (C1)*	0.3537
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.9985

Calibration Plot **Fluoride**



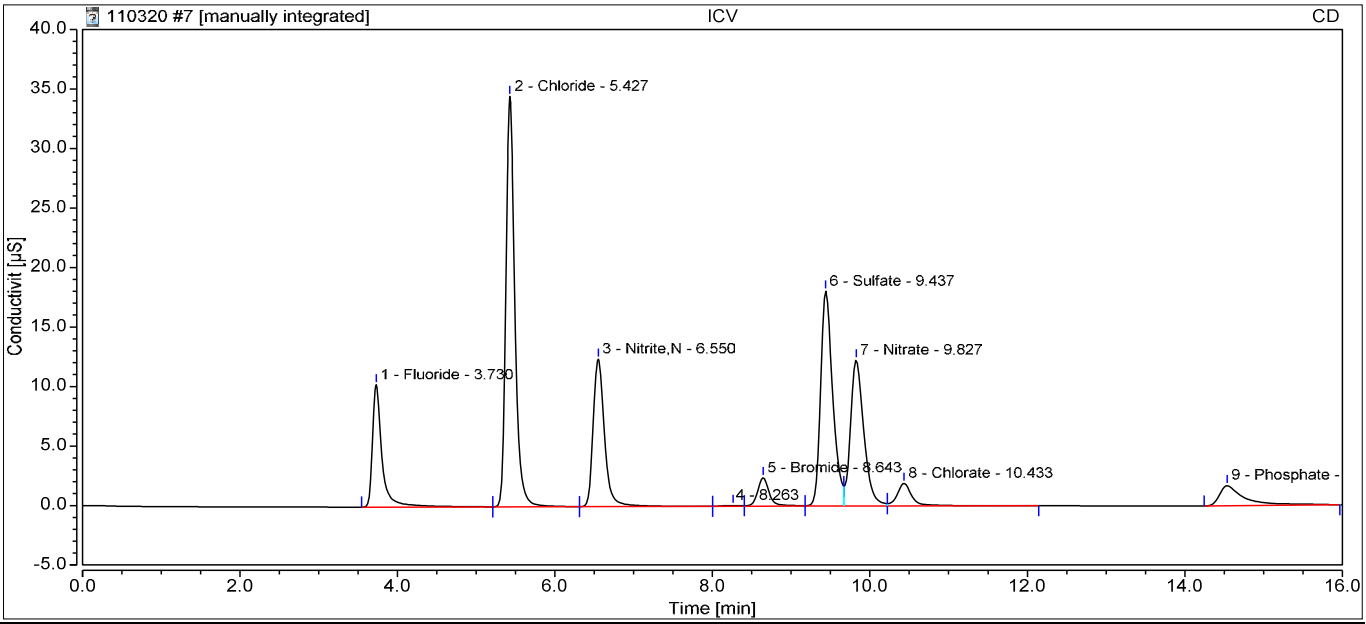
Calibration Results **Fluoride**

No.	Injection Name	Calibration Level	X Value CD Fluoride	Y Value CD Fluoride	Y Value CD Fluoride	Area µS*min CD Fluoride	Height µS CD Fluoride
1	STD1	1	0.1000	0.0254	0.0254	0.025	0.197
2	STD2	2	0.4000	0.1446	0.1446	0.145	0.916
3	STD3	3	2.0000	0.7445	0.7445	0.745	5.182
4	STD4	4	4.0000	1.5036	1.5036	1.504	10.507
5	STD5	5	10.0000	3.6113	3.6113	3.611	24.538
6	STD6	6	20.0000	6.8547	6.8547	6.855	44.677

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BD7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



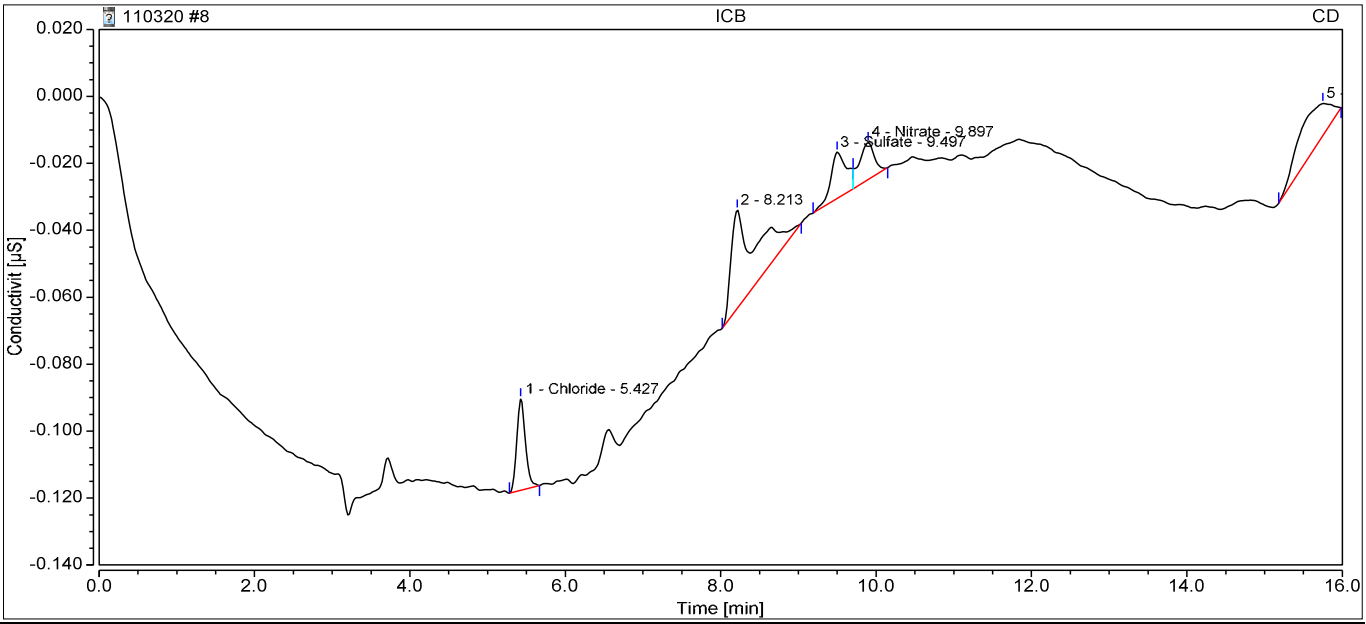
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.447	4.1020	4.1020	1.0000
2	5.43	Chloride	BMB	4.553	19.8399	19.8399	1.0000
3	6.55	Nitrite,N	BMB	2.061	4.3359	4.3359	1.0000
5	8.64	Bromide	M	0.413	4.0106	4.0106	1.0000
6	9.44	Sulfate	M	3.227	20.1622	20.1622	1.0000
7	9.83	Nitrate	M	2.405	3.8850	3.8850	1.0000
8	10.43	Chlorate	MB	0.422	4.0019	4.0019	1.0000
9	14.54	Phosphate	BM *	0.631	3.6292	3.6292	1.0000
Total:			**0.000**	**15.159**		**63.97**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**BD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/11/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:

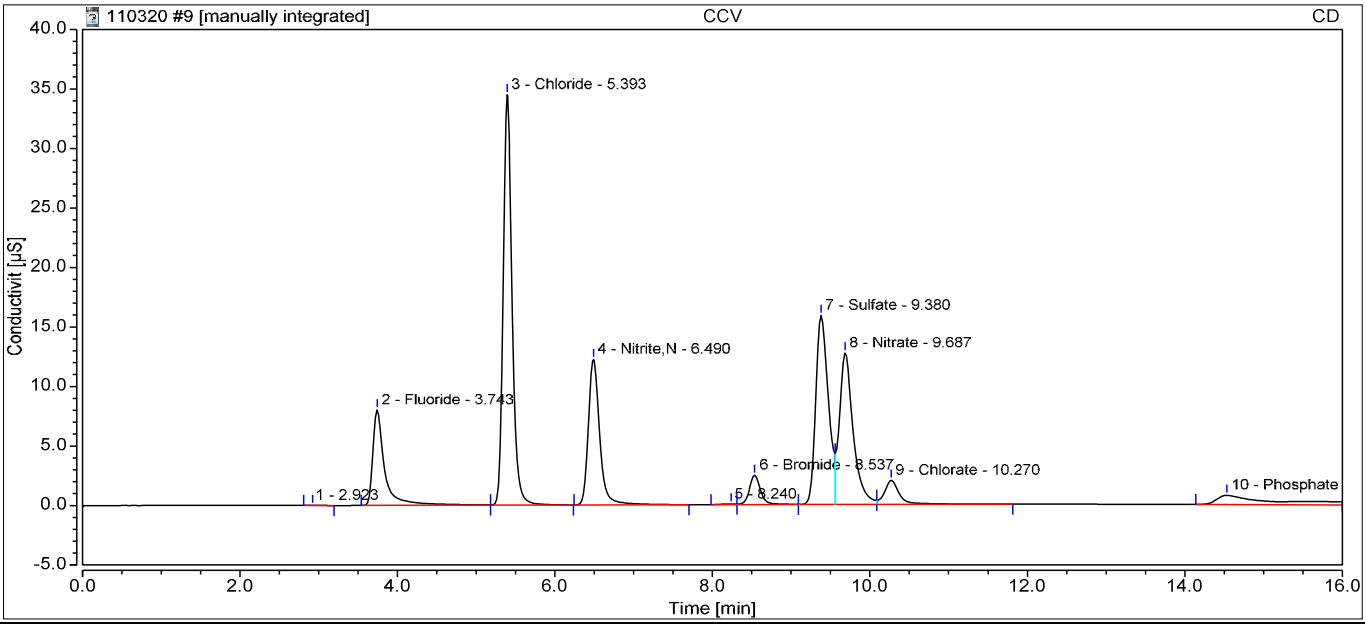


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.43	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.50	Sulfate	BM	0.003	0.0318	0.0318	1.0000
4	9.90	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.03**	

9 CCV			
Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 12:34**	*Sample Weight:*	**1.0000**

Run Time:



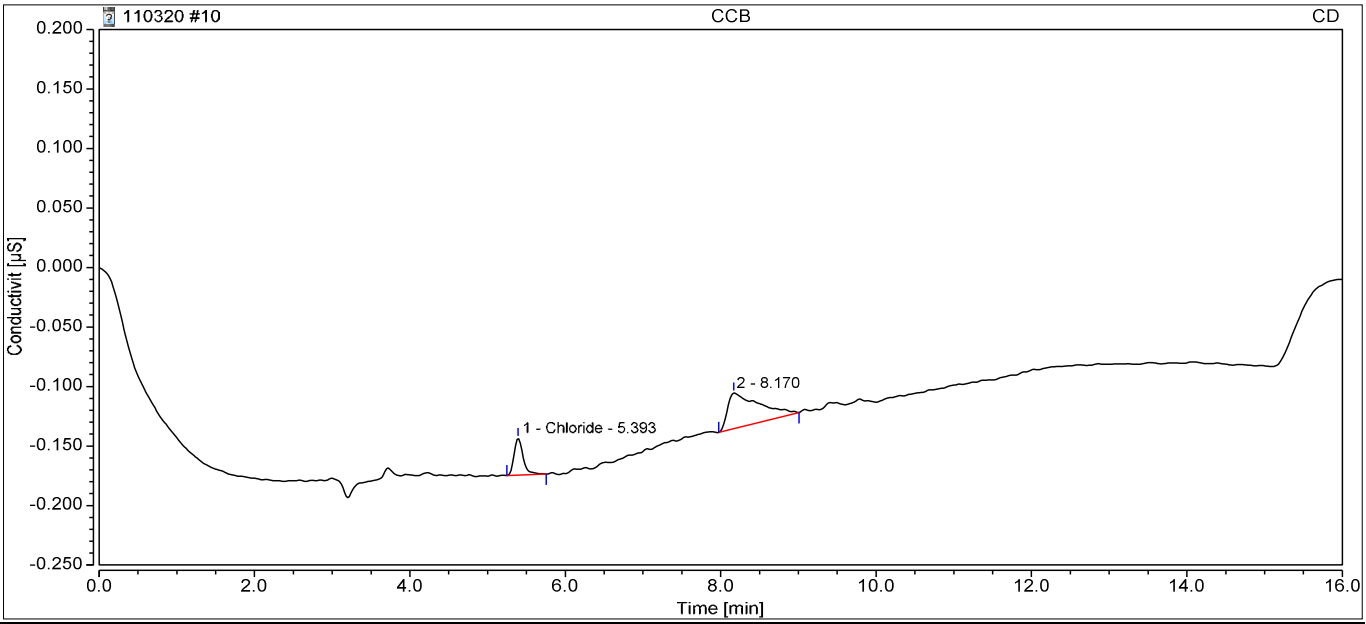
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
2	3.74	Fluoride	BMB	1.388	3.9362	3.9362	1.0000
3	5.39	Chloride	BMB	4.518	19.6858	19.6858	1.0000
4	6.49	Nitrite,N	BMB	2.047	4.3060	4.3060	1.0000
6	8.54	Bromide	M	0.406	3.9459	3.9459	1.0000
7	9.38	Sulfate	M	2.932	18.3188	18.3188	1.0000
8	9.69	Nitrate	M	2.590	4.1846	4.1846	1.0000
9	10.27	Chlorate	MB	0.451	4.2859	4.2859	1.0000
10	14.53	Phosphate	BM *	0.628	3.6134	3.6134	1.0000
Total:			**0.000**	**14.960**		**62.28**	

10 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 12:52**	*Sample Weight:*	**1.0000**

Run Time:



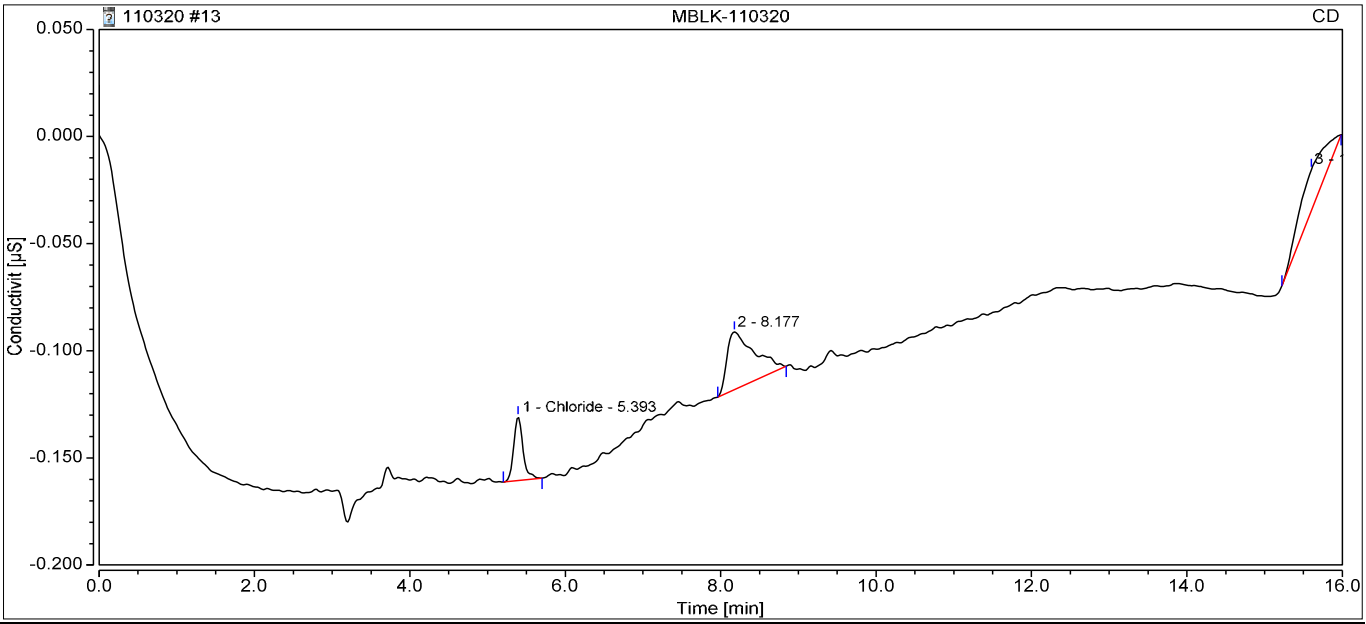
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.00**	

13 MBLK-110320

Sample Name:	**MBLK-110320**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 13:46**	*Sample Weight:*	**1.0000**

Run Time:



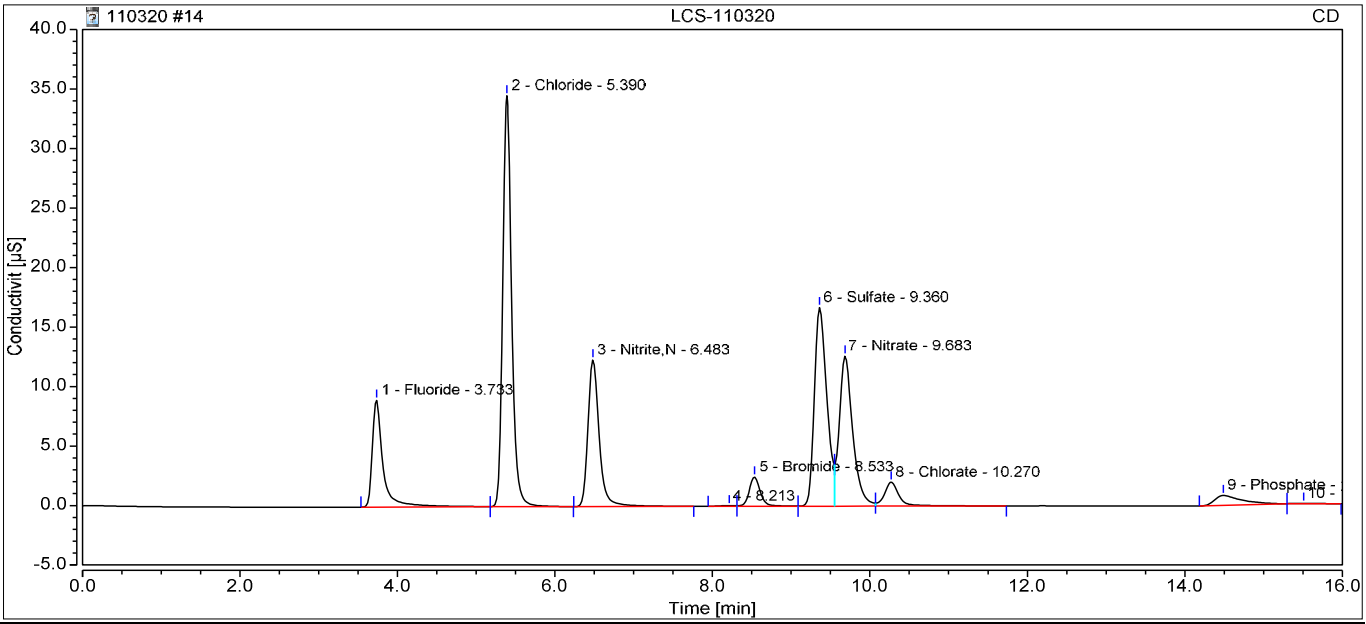
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.004	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.004**		**0.00**	

14 LCS-110320

Sample Name:	**LCS-110320**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 14:04**	*Sample Weight:*	**1.0000**

Run Time:



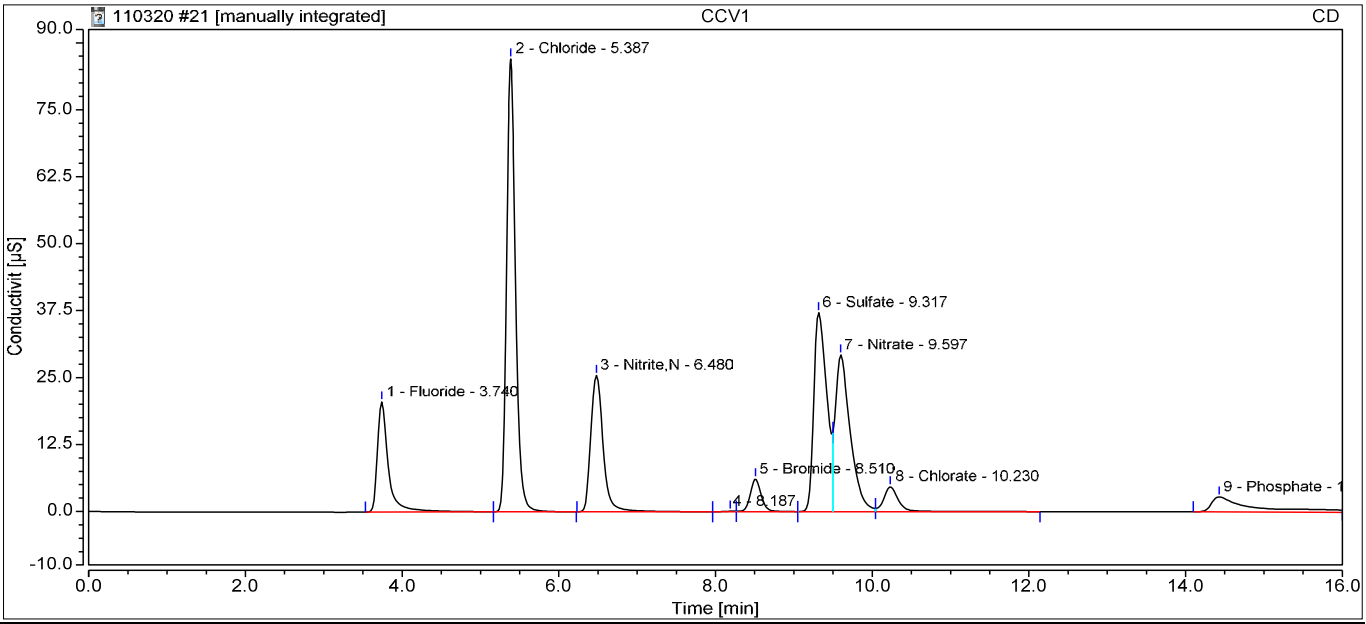
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.413	4.0060	4.0060	1.0000
2	5.39	Chloride	BMB	4.526	19.7212	19.7212	1.0000
3	6.48	Nitrite,N	BMB	2.053	4.3184	4.3184	1.0000
5	8.53	Bromide	M	0.402	3.9047	3.9047	1.0000
6	9.36	Sulfate	M	3.038	18.9799	18.9799	1.0000
7	9.68	Nitrate	M	2.513	4.0600	4.0600	1.0000
8	10.27	Chlorate	MB	0.434	4.1248	4.1248	1.0000
9	14.49	Phosphate	BMB	0.331	2.0845	2.0845	1.0000
Total:			**0.000**	**14.710**		**61.20**	

21 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 16:10**	*Sample Weight:*	**1.0000**

Run Time:

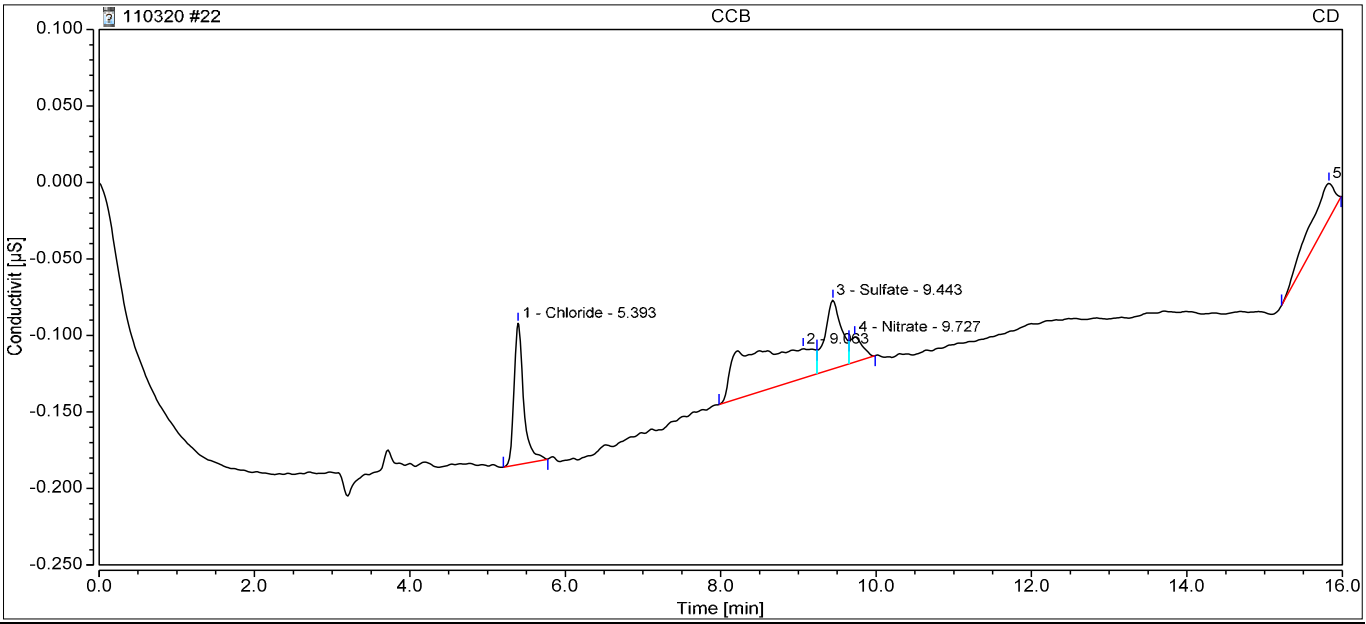


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.348	9.4774	9.4774	1.0000
2	5.39	Chloride	BMB	11.119	48.5297	48.5297	1.0000
3	6.48	Nitrite,N	BMB	4.651	9.8334	9.8334	1.0000
5	8.51	Bromide	M	0.997	9.8039	9.8039	1.0000
6	9.32	Sulfate	M *	7.223	45.1101	45.1101	1.0000
7	9.60	Nitrate	M *	6.441	10.4429	10.4429	1.0000
8	10.23	Chlorate	MB	1.023	9.8963	9.8963	1.0000
9	14.43	Phosphate	BM *	1.689	9.0779	9.0779	1.0000
Total:			**0.000**	**36.491**		**152.17**	

22 CCB			
Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/03/2020 16:28**	*Sample Weight:*	**1.0000**

Run Time:



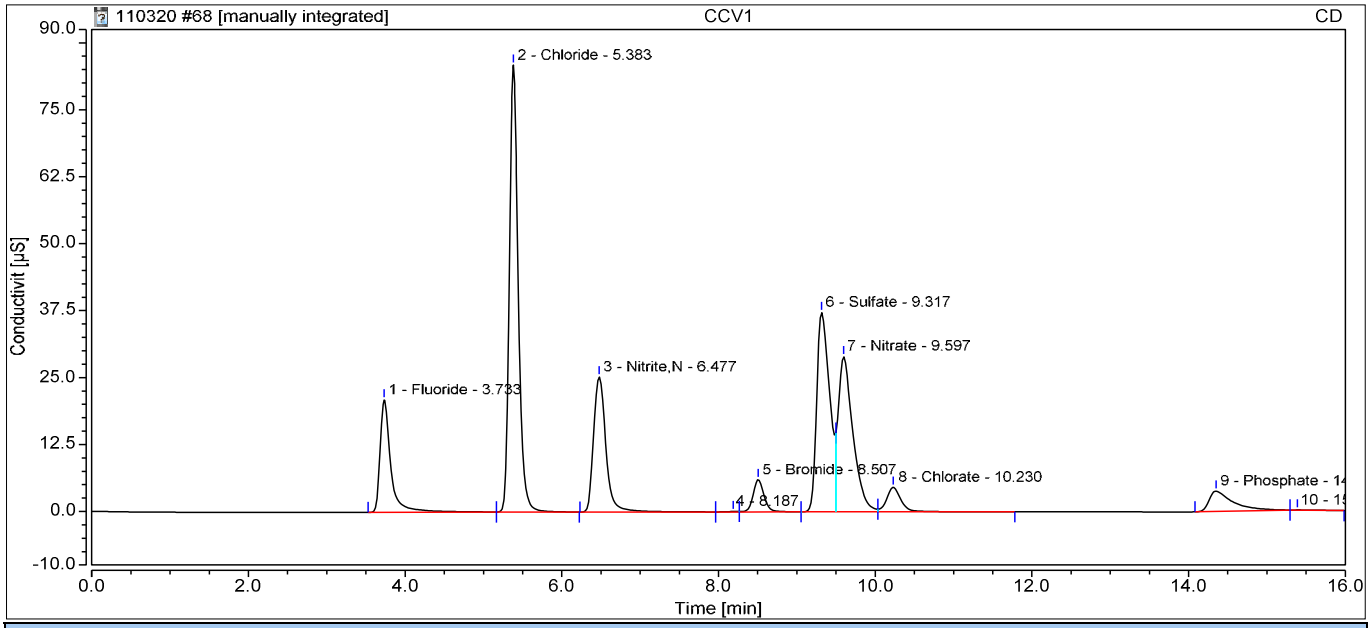
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.013	0.0015	0.0015	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.44	Sulfate	M	0.011	0.0816	0.0816	1.0000
4	9.73	Nitrate	MB	0.003	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.027**		**0.08**	

68 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 06:54**	*Sample Weight:*	**1.0000**

Run Time:



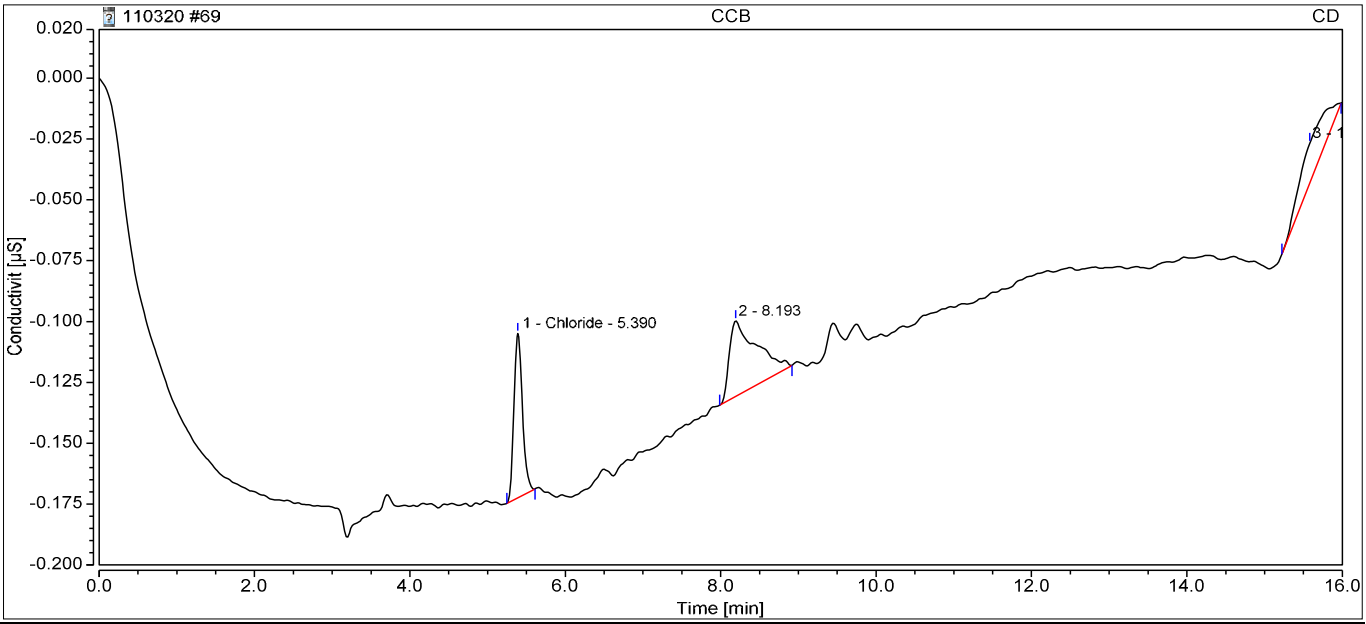
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	3.323	9.4089	9.4089	1.0000
2	5.38	Chloride	BMB	10.942	47.7537	47.7537	1.0000
3	6.48	Nitrite,N	BMB	4.601	9.7270	9.7270	1.0000
5	8.51	Bromide	M	0.979	9.6268	9.6268	1.0000
6	9.32	Sulfate	M *	7.231	45.1620	45.1620	1.0000
7	9.60	Nitrate	M *	6.248	10.1283	10.1283	1.0000
8	10.23	Chlorate	MB	0.986	9.5398	9.5398	1.0000
9	14.35	Phosphate	BMB	1.343	7.2966	7.2966	1.0000
Total:			**0.000**	**35.653**		**148.64**	

69 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 07:12**	*Sample Weight:*	**1.0000**

Run Time:



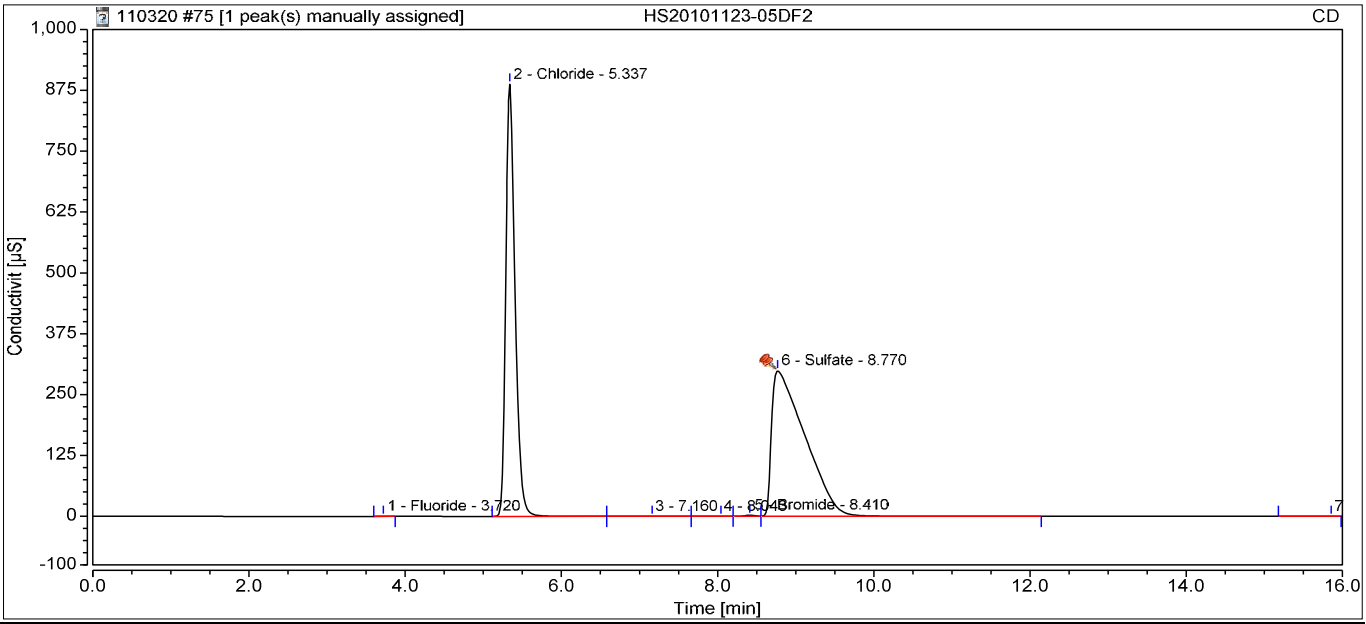
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.009	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.00**	

75 HS20101123-05DF2

Sample Name:	**HS20101123-05DF2**	*Injection Volume:*	**5.00**
Vial Number:	**GB1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**2.0000**
Recording Time:	**11/04/2020 09:00**	*Sample Weight:*	**1.0000**

Run Time:



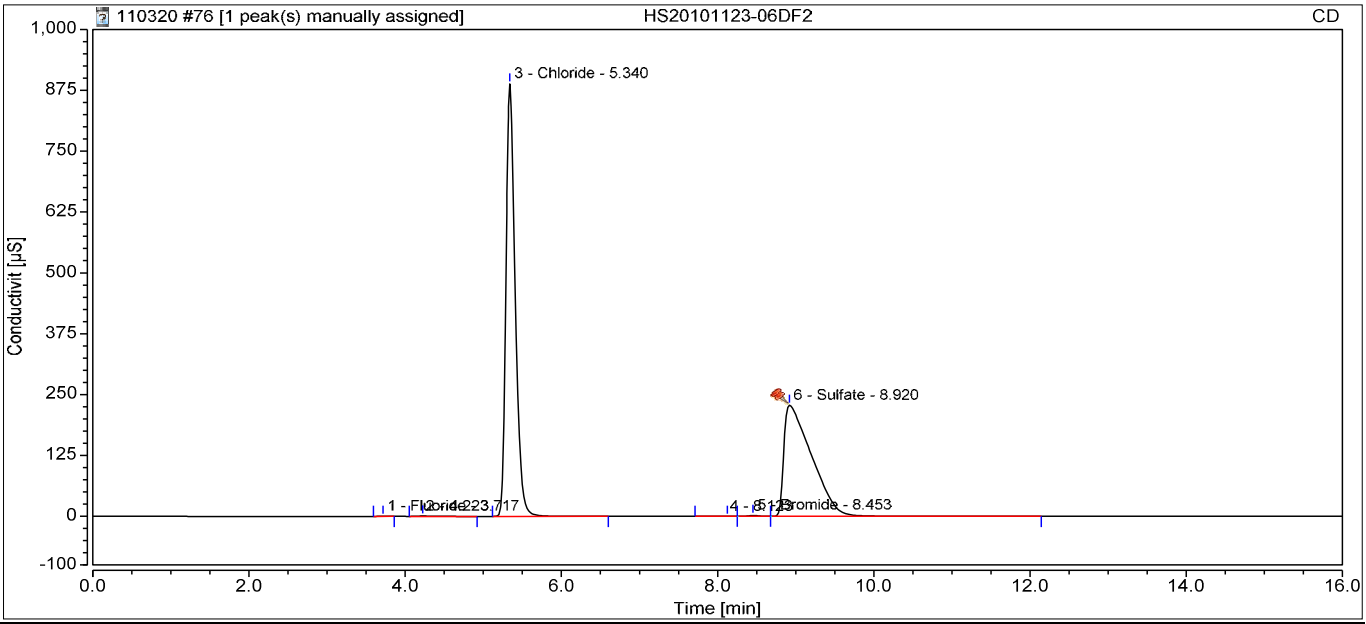
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.011	0.0422	0.0844	2.0000
2	5.34	Chloride	BMB	122.155	533.7079	1067.4158	2.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	2.0000
5	8.41	Bromide	M	0.360	3.4863	6.9726	2.0000
6	8.77	Sulfate	MB^	146.842	916.8714	1833.7428	2.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	2.0000
Total:			**0.000**	**269.368**		**2908.22**	

76 HS20101123-06DF2

Sample Name:	**HS20101123-06DF2**	*Injection Volume:*	**5.00**
Vial Number:	**GB2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**2.0000**
Recording Time:	**11/04/2020 09:18**	*Sample Weight:*	**1.0000**

Run Time:



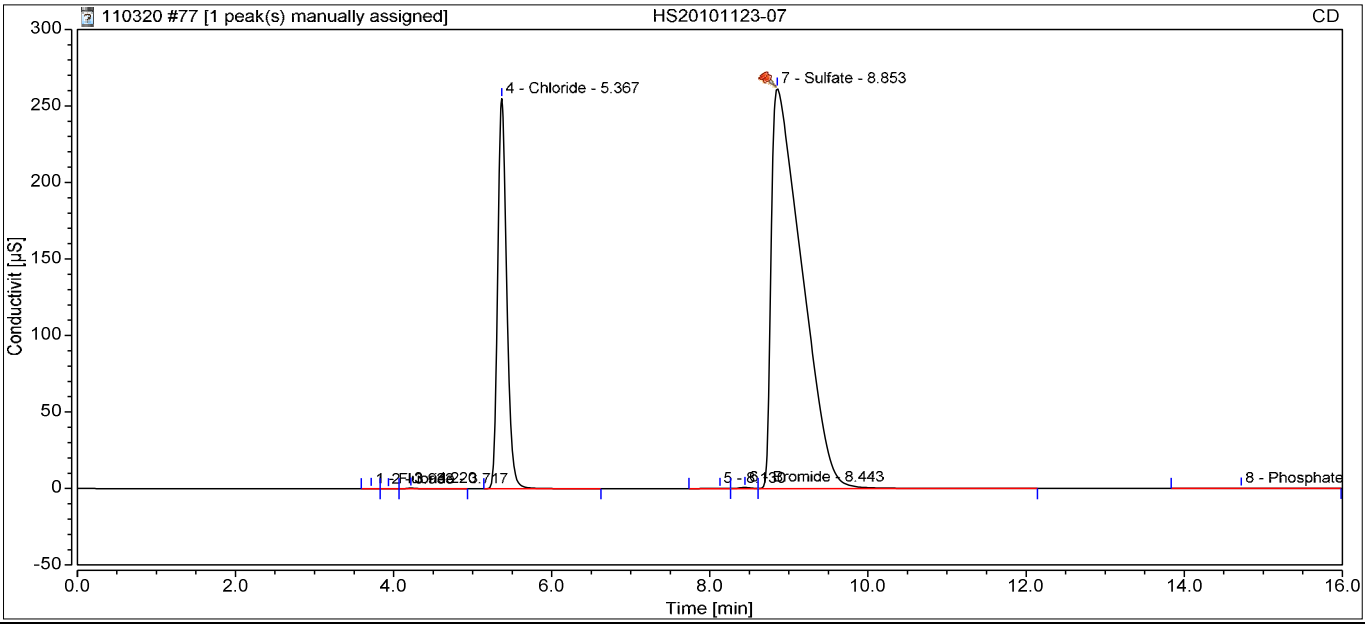
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.011	0.0417	0.0833	2.0000
3	5.34	Chloride	BMB	121.818	532.2327	1064.4653	2.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	2.0000
5	8.45	Bromide	M	0.298	2.8782	5.7565	2.0000
6	8.92	Sulfate	MB^	93.210	582.0015	1164.0031	2.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	2.0000
Total:			**0.000**	**215.337**		**2234.31**	

77 HS20101123-07

Sample Name:	**HS20101123-07**	*Injection Volume:*	**5.00**
Vial Number:	**GB3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 09:36**	*Sample Weight:*	**1.0000**

Run Time:



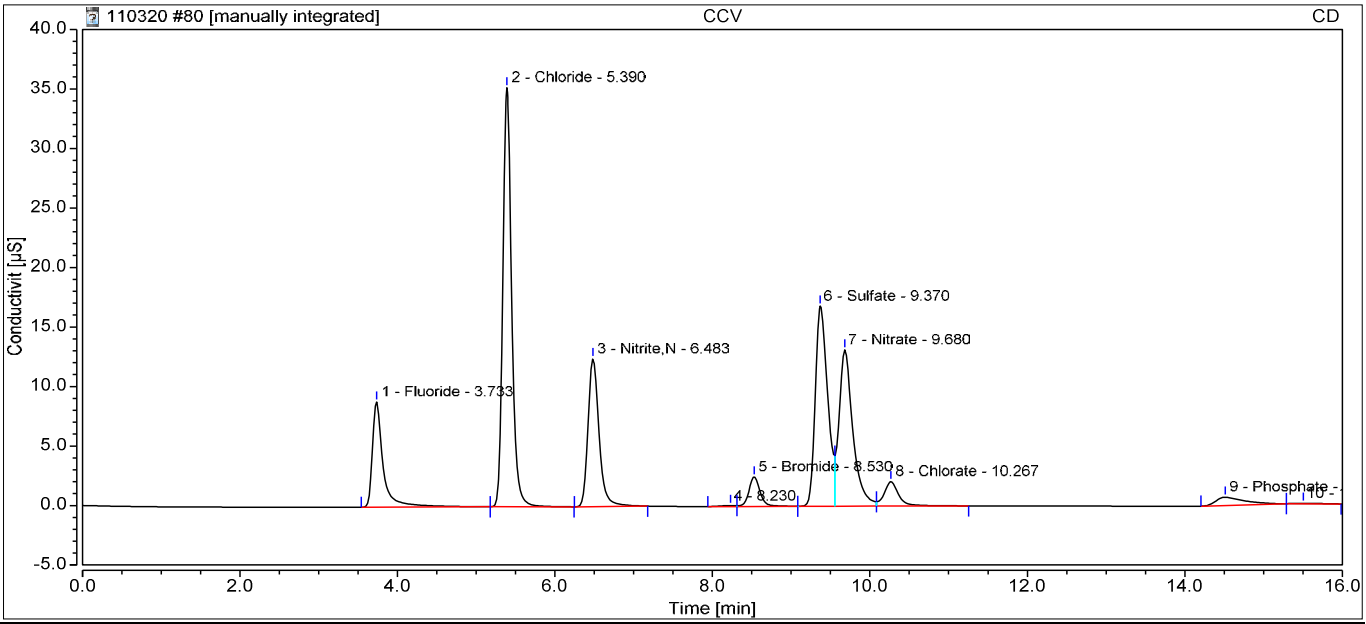
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.006	0.0290	0.0290	1.0000
4	5.37	Chloride	BMB	33.352	145.6752	145.6752	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
6	8.44	Bromide	M	0.131	1.2125	1.2125	1.0000
7	8.85	Sulfate	MB^	116.697	728.6510	728.6510	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	14.72	Phosphate	BMB	0.124	1.0201	1.0201	1.0000
Total:			**0.000**	**150.310**		**876.59**	

80 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 10:30**	*Sample Weight:*	**1.0000**

Run Time:



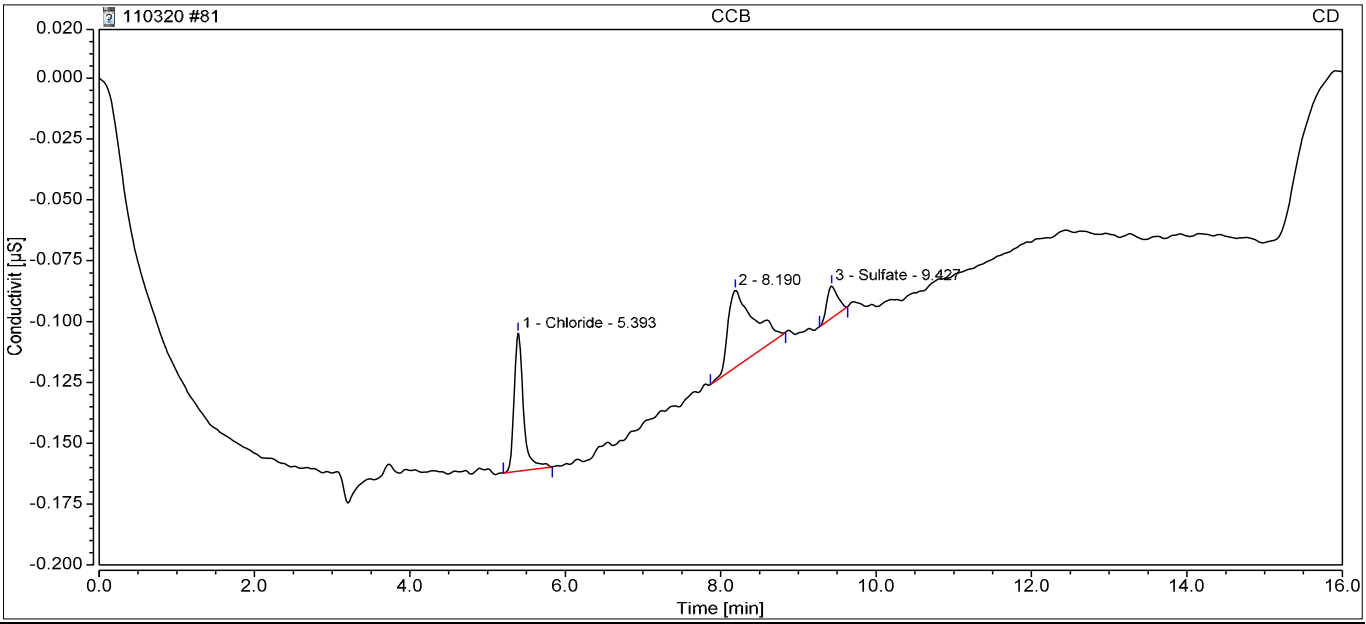
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.407	3.9897	3.9897	1.0000
2	5.39	Chloride	BMB	4.585	19.9768	19.9768	1.0000
3	6.48	Nitrite,N	BMB*	2.038	4.2863	4.2863	1.0000
5	8.53	Bromide	M *	0.410	3.9833	3.9833	1.0000
6	9.37	Sulfate	M *	3.039	18.9874	18.9874	1.0000
7	9.68	Nitrate	M *	2.690	4.3479	4.3479	1.0000
8	10.27	Chlorate	MB*	0.442	4.2039	4.2039	1.0000
9	14.51	Phosphate	BMB	0.286	1.8522	1.8522	1.0000
Total:			**0.000**	**14.897**		**61.63**	

81 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 10:48**	*Sample Weight:*	**1.0000**

Run Time:



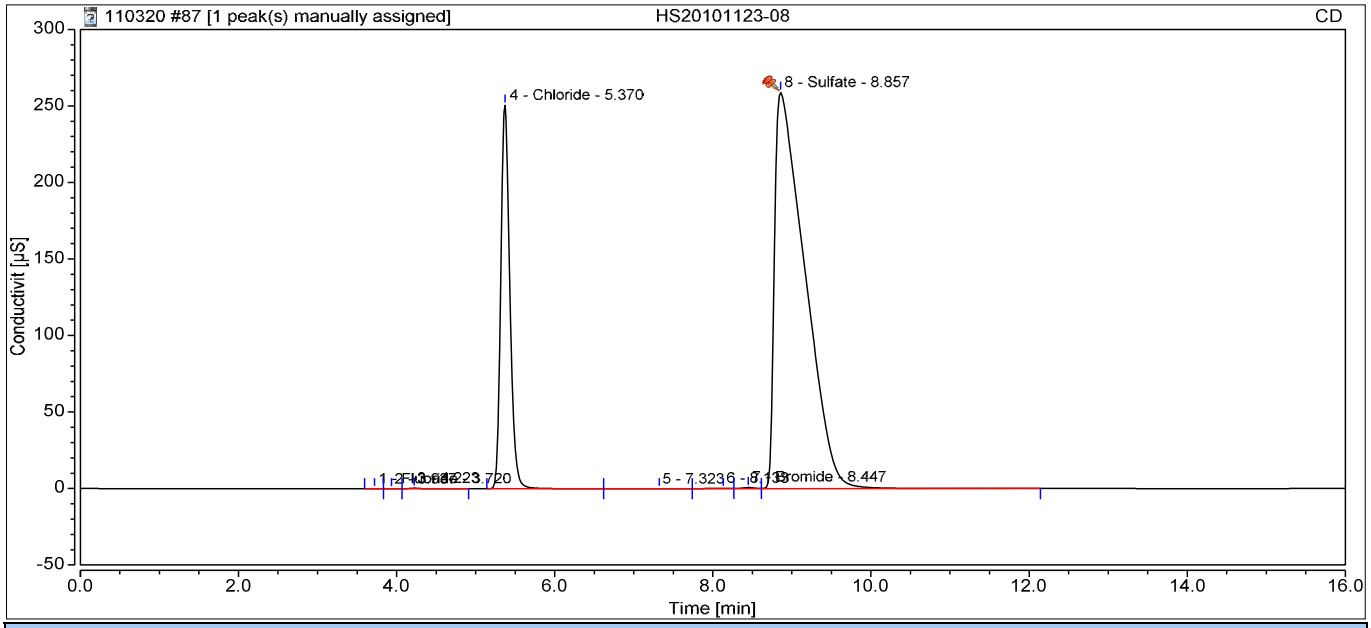
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.008	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.43	Sulfate	BMB	0.002	0.0251	0.0251	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.010**		**0.03**	

87 HS20101123-08

Sample Name:	**HS20101123-08**	*Injection Volume:*	**5.00**
Vial Number:	**GB4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 12:37**	*Sample Weight:*	**1.0000**

Run Time:



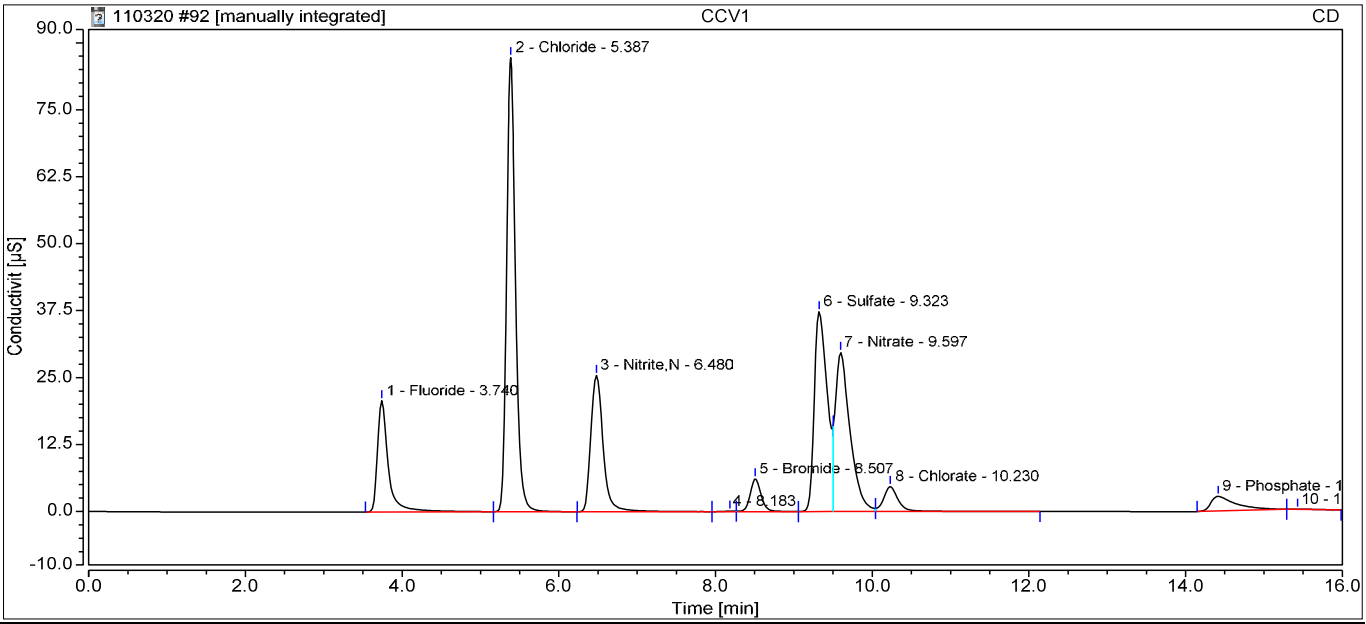
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.006	0.0294	0.0294	1.0000
4	5.37	Chloride	BMB	32.841	143.4443	143.4443	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
7	8.45	Bromide	M	0.128	1.1893	1.1893	1.0000
8	8.86	Sulfate	MB^	114.474	714.7689	714.7689	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**147.450**		**859.43**	

92 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 14:07**	*Sample Weight:*	**1.0000**

Run Time:



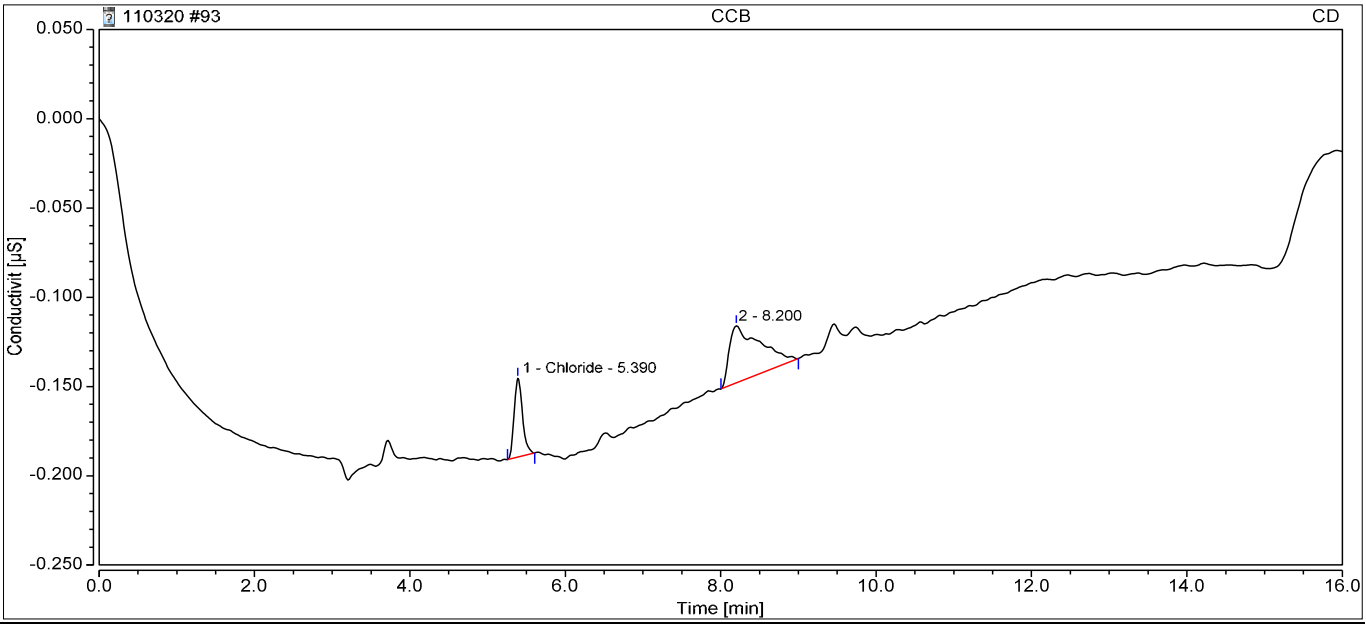
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.351	9.4863	9.4863	1.0000
2	5.39	Chloride	BMB	11.124	48.5485	48.5485	1.0000
3	6.48	Nitrite,N	BMB	4.644	9.8182	9.8182	1.0000
5	8.51	Bromide	M	0.996	9.8018	9.8018	1.0000
6	9.32	Sulfate	M *	7.232	45.1644	45.1644	1.0000
7	9.60	Nitrate	M *	6.437	10.4365	10.4365	1.0000
8	10.23	Chlorate	MB	1.022	9.8902	9.8902	1.0000
9	14.42	Phosphate	BMB	1.024	5.6494	5.6494	1.0000
Total:			**0.000**	**35.829**		**148.80**	

93 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 14:43**	*Sample Weight:*	**1.0000**

Run Time:



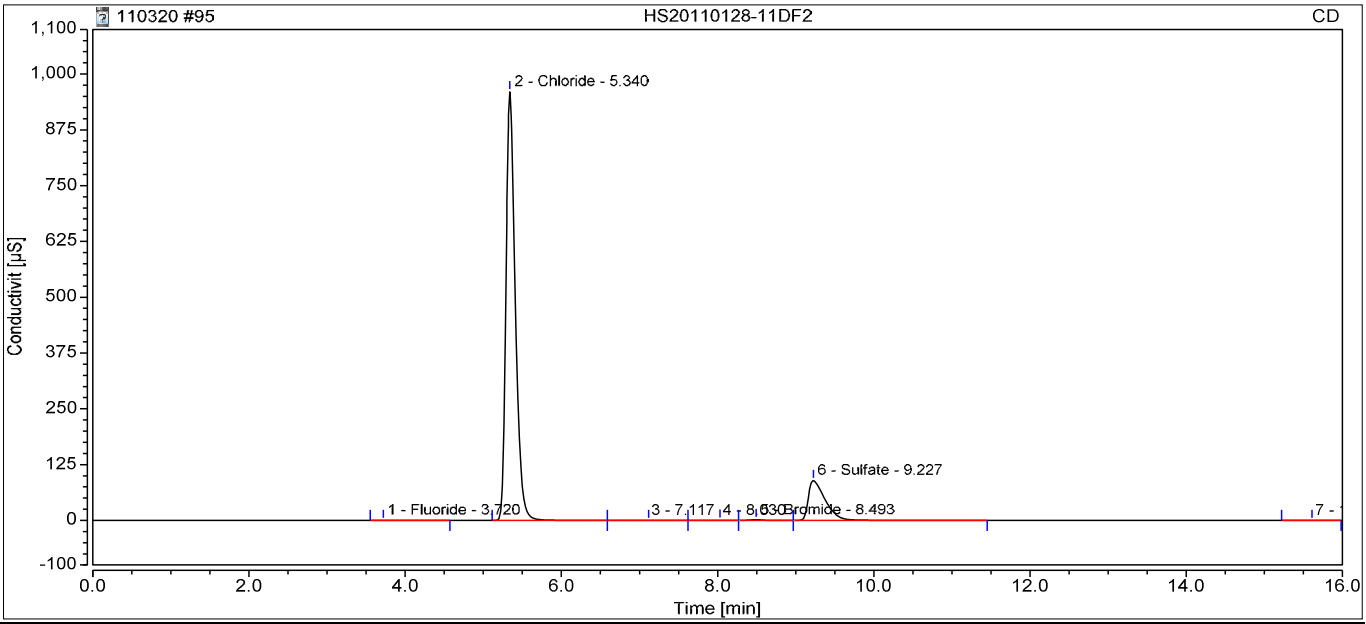
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.005	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.005**		**0.00**	

95 HS20110128-11DF2

Sample Name:	**HS20110128-11DF2**	*Injection Volume:*	**5.00**
Vial Number:	**GD8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**2.0000**
Recording Time:	**11/04/2020 15:19**	*Sample Weight:*	**1.0000**

Run Time:



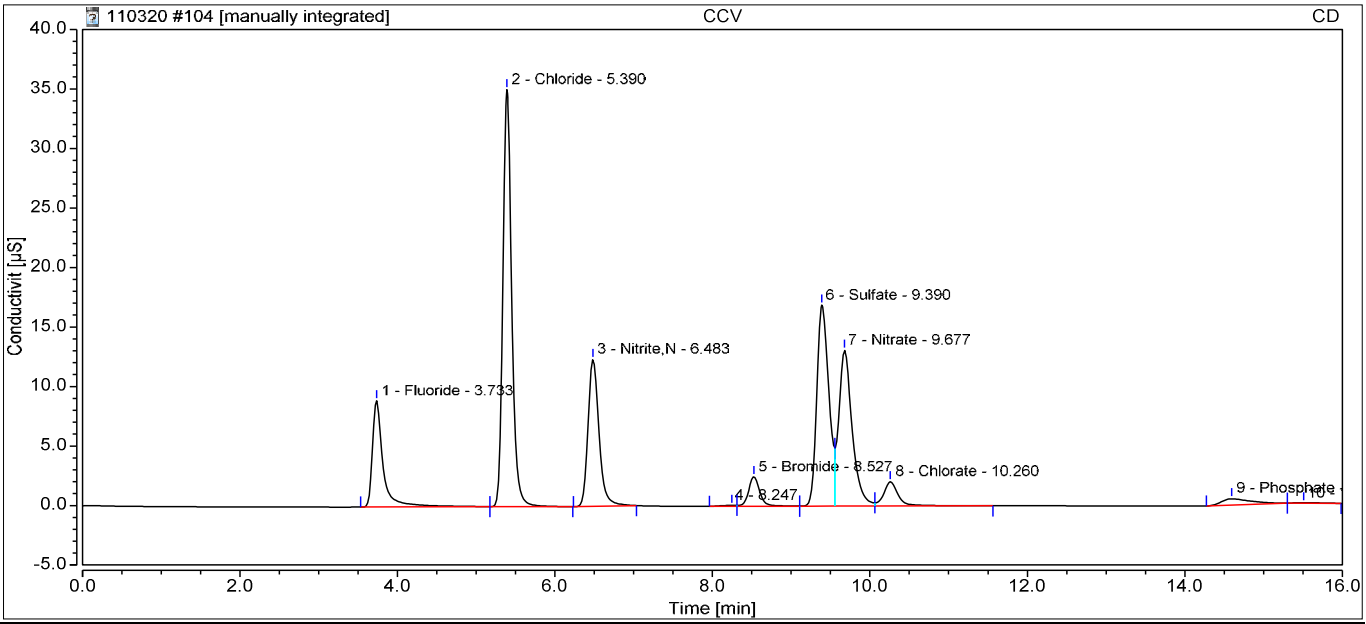
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.045	0.1393	0.2785	2.0000
2	5.34	Chloride	BMB	132.502	578.9174	1157.8349	2.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	2.0000
5	8.49	Bromide	M	0.317	3.0632	6.1264	2.0000
6	9.23	Sulfate	MB	22.285	139.1540	278.3081	2.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	2.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	2.0000
Total:			**0.000**	**155.149**		**1442.55**	

104 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 18:01**	*Sample Weight:*	**1.0000**

Run Time:



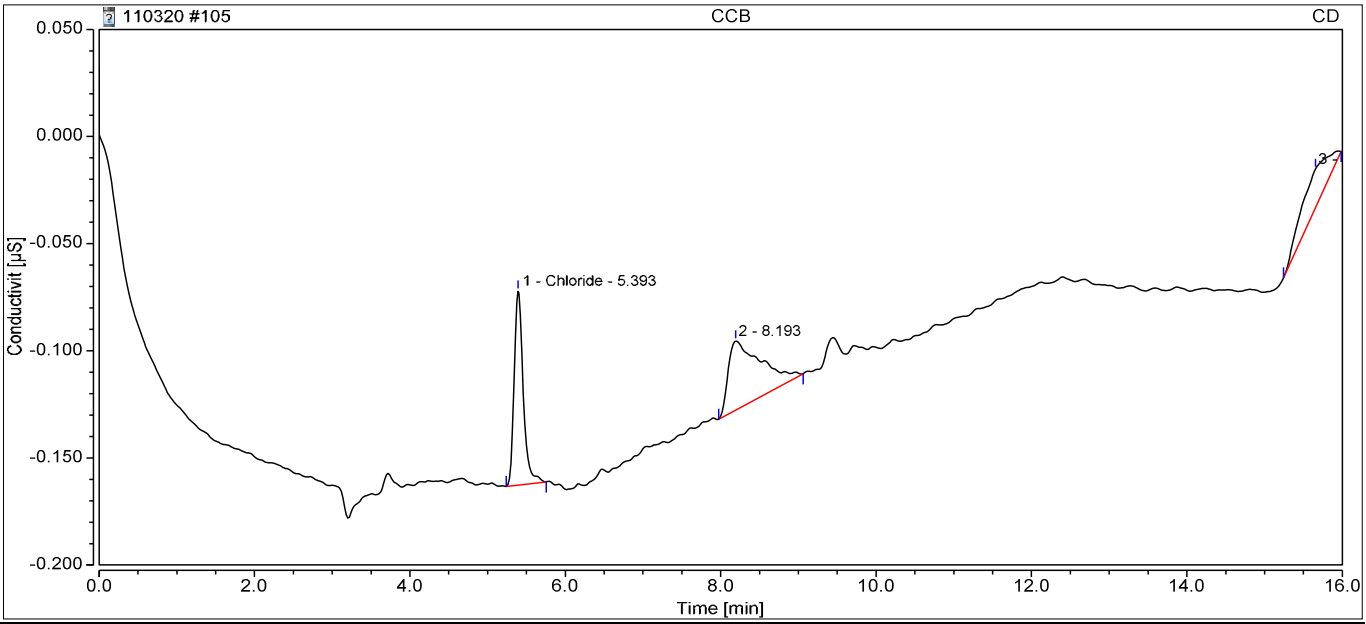
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	1.404	3.9811	3.9811	1.0000
2	5.39	Chloride	BMB	4.563	19.8818	19.8818	1.0000
3	6.48	Nitrite,N	BMB*	2.008	4.2232	4.2232	1.0000
5	8.53	Bromide	M	0.411	3.9913	3.9913	1.0000
6	9.39	Sulfate	M	2.992	18.6905	18.6905	1.0000
7	9.68	Nitrate	M	2.585	4.1770	4.1770	1.0000
8	10.26	Chlorate	MB	0.442	4.1963	4.1963	1.0000
9	14.60	Phosphate	BMB	0.224	1.5347	1.5347	1.0000
Total:			**0.000**	**14.628**		**60.68**	

105 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 18:19**	*Sample Weight:*	**1.0000**

Run Time:



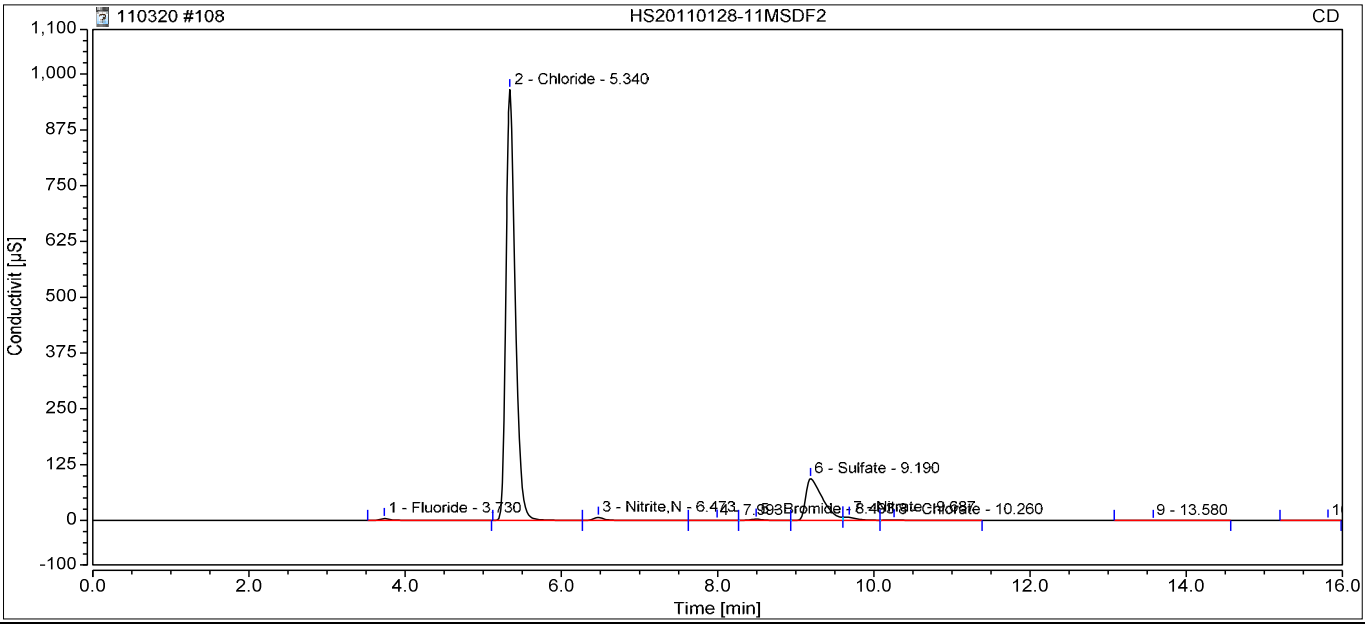
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.39	Chloride	BMB	0.012	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.012**		**0.00**	

108 HS20110128-11MSDF2

Sample Name:	**HS20110128-11MSDF2**	*Injection Volume:*	**5.00**
Vial Number:	**GE1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**2.0000**
Recording Time:	**11/04/2020 19:14**	*Sample Weight:*	**1.0000**

Run Time:



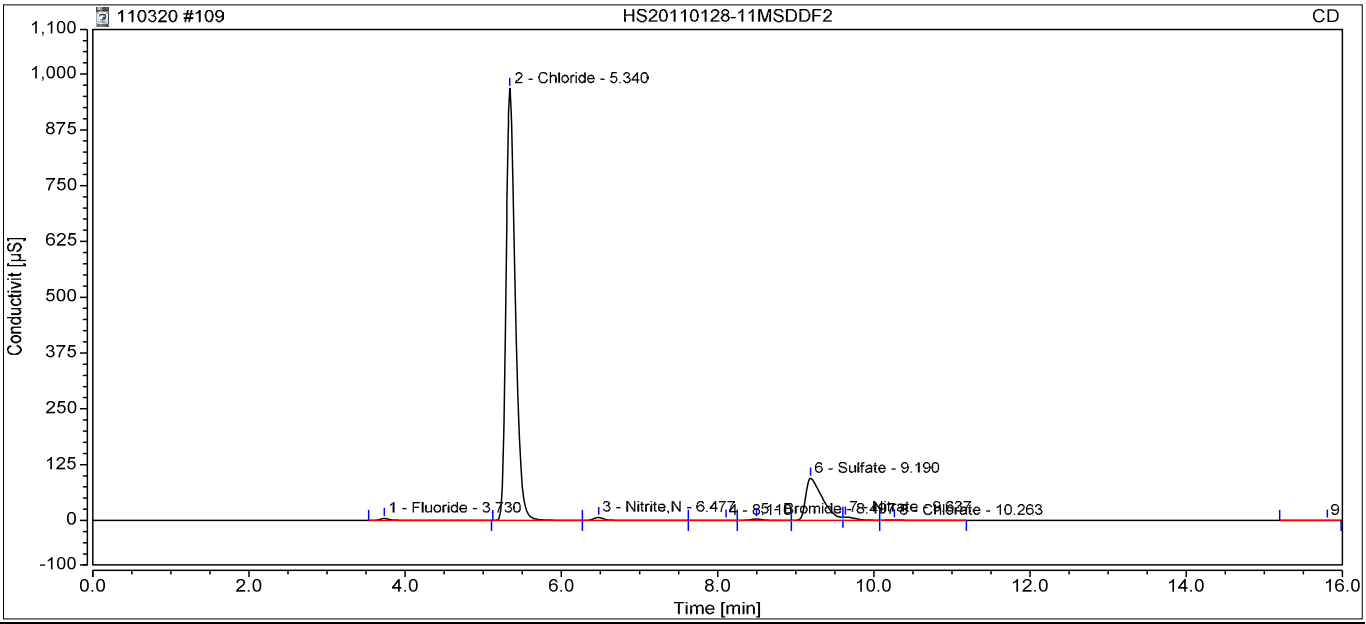
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.707	2.0102	4.0204	2.0000
2	5.34	Chloride	BMB	133.070	581.3994	1162.7988	2.0000
3	6.47	Nitrite,N	BMB	1.062	2.2154	4.4308	2.0000
5	8.49	Bromide	M	0.505	4.9282	9.8563	2.0000
6	9.19	Sulfate	M	23.352	145.8193	291.6386	2.0000
7	9.69	Nitrate	M	1.415	2.2753	4.5507	2.0000
8	10.26	Chlorate	MB	0.258	2.3954	4.7908	2.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	2.0000
Total:			**0.000**	**160.369**		**1482.09**	

109 HS20110128-11MSDDF2

Sample Name:	**HS20110128-11MSDDF2**	*Injection Volume:*	**5.00**
Vial Number:	**GE2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**2.0000**
Recording Time:	**11/04/2020 19:32**	*Sample Weight:*	**1.0000**

Run Time:



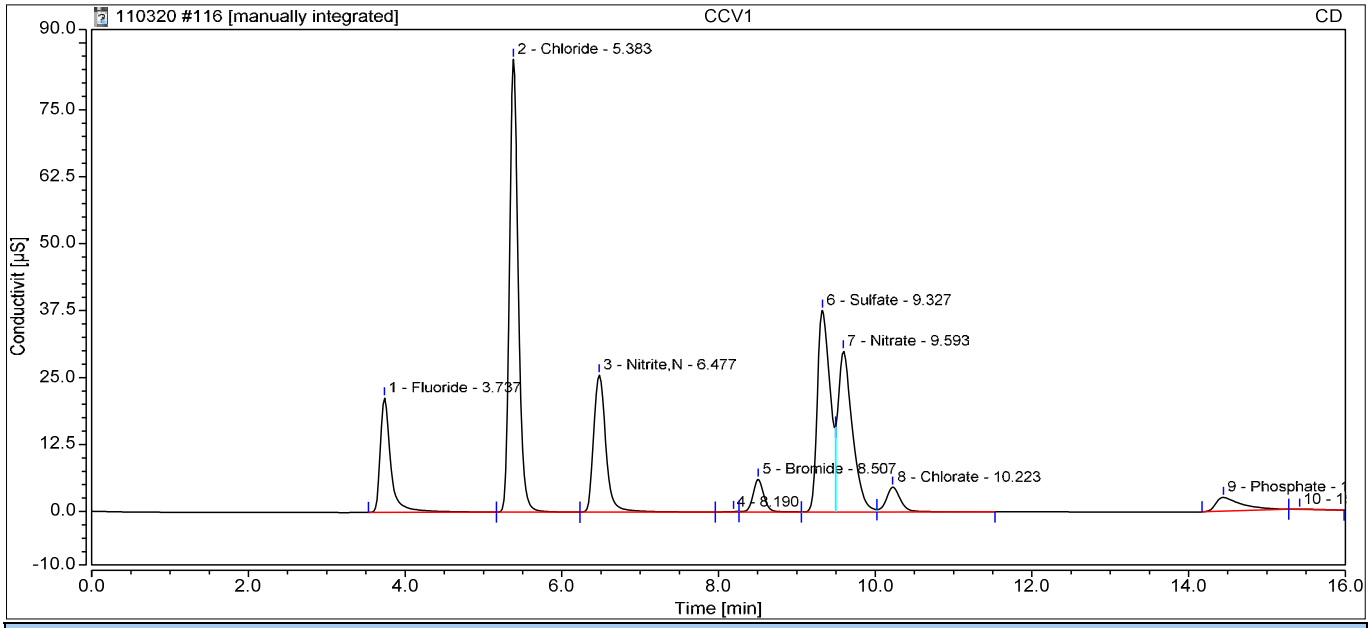
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.73	Fluoride	BMB	0.725	2.0617	4.1234	2.0000
2	5.34	Chloride	BMB	133.475	583.1680	1166.3359	2.0000
3	6.48	Nitrite,N	BMB	1.042	2.1727	4.3453	2.0000
5	8.50	Bromide	M	0.574	5.6131	11.2262	2.0000
6	9.19	Sulfate	M	23.562	147.1279	294.2557	2.0000
7	9.64	Nitrate	M	1.385	2.2273	4.4547	2.0000
8	10.26	Chlorate	MB	0.245	2.2711	4.5423	2.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	2.0000
Total:			**0.000**	**161.008**		**1489.28**	

116 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 21:56**	*Sample Weight:*	**1.0000**

Run Time:



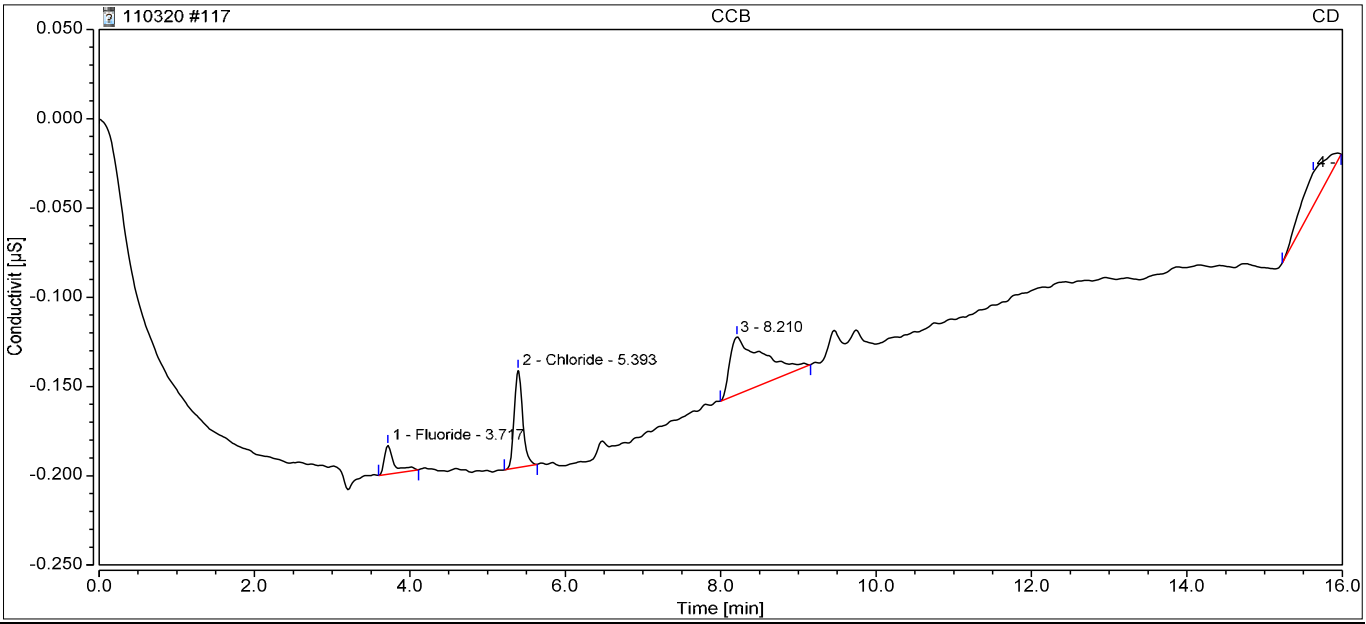
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.74	Fluoride	BMB	3.353	9.4932	9.4932	1.0000
2	5.38	Chloride	BMB	11.039	48.1781	48.1781	1.0000
3	6.48	Nitrite,N	BMB	4.636	9.8015	9.8015	1.0000
5	8.51	Bromide	M	0.986	9.6995	9.6995	1.0000
6	9.33	Sulfate	M *	7.208	45.0176	45.0176	1.0000
7	9.59	Nitrate	M *	6.382	10.3458	10.3458	1.0000
8	10.22	Chlorate	MB	0.979	9.4632	9.4632	1.0000
9	14.44	Phosphate	BMB	0.991	5.4834	5.4834	1.0000
Total:			**0.000**	**35.573**		**147.48**	

117 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 06022020.1**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/04/2020 22:32**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.72	Fluoride	BMB	0.002	0.0180	0.0180	1.0000
2	5.39	Chloride	BMB	0.007	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.02**	

HS20101123 Wet Chem Raw Data (ALK_W 2320B)

ALS WO# HS20101123

Report Date: 10/22/2020 : 5:44

PC-TitratION PLUS
Calibration Report

Calibration Record # 2293

Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	10/22/2020
Channel	1	Time	5:44 PM
Probe Type	pH	Temperature	294.94 K 21.79 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-58.307	CorrCoeff	0.9999
Intercept	4.517	Equation:	Y = (-58.307) X + (4.517)

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-58.307	-65.00	-53.00
Intercept	4.517	-100.00	100.00
Correlation Coefficient	0.9999	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	180.78
	7.00	1.83
	10.00	-169.06

#371120 (A)
#371121 (B) Verified by QC 10/23/2020
#371123 (C)

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Report Date: 10/23/2020 : 5:40 AM

PC-TitratION PLUS
Water Analysis Report

Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
ICV-PH	10/22/2020	6:13 PM	21.77	-1.00	6.03	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
TAP WATER	10/22/2020	6:20 PM	21.86	-1.00	7.97	.00	286.10	286.10	.00	.00	.00	2.72	2.72
WBLKW1-201022	10/22/2020	6:26 PM	21.82	-1.00	5.87	.00	.61	.61	.00	.00	.00	.02	.02
LCS1-201022	10/22/2020	6:34 PM	21.87	-1.00	10.94	522.50	1,027.65	.00	1,010.29	17.35	4.98	9.79	9.79
LCSD1-201022	10/22/2020	6:43 PM	21.83	-1.00	10.94	525.44	1,021.35	.00	991.82	29.53	5.00	9.73	9.73
HS20100751-01	10/22/2020	6:53 PM	21.83	-1.00	8.62	56.05	1,247.81	1,135.72	112.09	.00	.53	11.88	11.88
HS20100751-01DUP	10/22/2020	7:02 PM	21.76	-1.00	8.62	56.73	1,222.66	1,109.19	113.47	.00	.54	11.64	11.64
HS20100751-02	10/22/2020	7:12 PM	21.76	-1.00	8.52	35.85	1,190.88	1,119.17	71.70	.00	.34	11.34	11.34
HS20100751-03	10/22/2020	7:22 PM	21.82	-1.00	8.60	60.11	1,319.35	1,199.12	120.23	.00	.57	12.57	12.57
HS20100752-01	10/22/2020	7:30 PM	21.74	-1.00	8.63	15.00	410.23	380.23	30.00	.00	.14	3.91	3.91
HS20100752-02	10/22/2020	7:36 PM	21.71	-1.00	8.69	14.40	324.16	295.36	28.80	.00	.14	3.09	3.09
CCV-PH	10/22/2020	7:39 PM	21.74	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	7:47 PM	21.67	-1.00	10.92	524.39	1,014.94	.00	981.10	33.84	4.99	9.67	9.67
DI RINSE	10/22/2020	7:52 PM	21.71	-1.00	6.10	.00	.64	.64	.00	.00	.00	.02	.02
HS20101004-01	10/22/2020	7:57 PM	21.69	-1.00	5.72	.00	.28	.28	.00	.00	.00	.02	.02
HS20100752-03	10/22/2020	8:04 PM	21.69	-1.00	8.67	13.51	315.25	288.23	27.02	.00	.13	3.00	3.00
HS20100752-04	10/22/2020	8:11 PM	21.63	-1.00	8.70	15.02	328.40	298.36	30.03	.00	.14	3.13	3.13
HS20100752-05	10/22/2020	8:18 PM	21.61	-1.00	8.65	12.54	302.35	277.27	25.08	.00	.12	2.88	2.88
HS20100752-06	10/22/2020	8:25 PM	21.64	-1.00	8.66	13.19	314.54	288.17	26.37	.00	.13	3.00	3.00
HS20100753-01	10/22/2020	8:32 PM	21.73	-1.00	8.01	.00	259.48	259.48	.00	.00	.00	2.47	2.47
HS20100753-02	10/22/2020	8:41 PM	21.80	-1.00	8.55	45.04	1,157.44	1,067.37	90.07	.00	.43	11.02	11.02
HS20100753-03	10/22/2020	8:52 PM	21.83	-1.00	8.52	61.26	1,486.04	1,363.51	122.52	.00	.58	14.15	14.15
HS20100753-04	10/22/2020	9:02 PM	21.85	-1.00	8.53	50.38	1,323.53	1,222.77	100.76	.00	.48	12.61	12.61
CCV-PH	10/22/2020	9:04 PM	21.77	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	9:13 PM	21.70	-1.00	10.88	524.85	1,021.32	.00	992.93	28.39	5.00	9.73	9.73
DI RINSE	10/22/2020	9:18 PM	21.80	-1.00	6.07	.00	.50	.50	.00	.00	.00	.02	.02
HS20100753-05	10/22/2020	9:25 PM	21.80	-1.00	8.60	11.89	332.72	308.94	23.79	.00	.11	3.17	3.17

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20100753-06	10/22/2020	9:35 PM	21.83	-1.00	8.63	69.99	1,367.62	1,227.65	139.98	.00	.67	13.02	13.02
HS20101062-01	10/22/2020	9:42 PM	21.96	-1.00	8.69	16.10	357.91	325.71	32.20	.00	.15	3.41	3.41
HS20101062-02	10/22/2020	9:49 PM	21.92	-1.00	8.67	15.46	382.04	351.12	30.92	.00	.15	3.64	3.64
HS20101062-03	10/22/2020	9:56 PM	21.87	-1.00	8.59	10.38	302.43	281.67	20.77	.00	.10	2.88	2.88
HS20101062-04	10/22/2020	10:04 PM	21.90	-1.00	8.71	21.18	472.53	430.17	42.36	.00	.20	4.50	4.50
WBLKW2-201022	10/22/2020	10:09 PM	21.89	-1.00	5.91	.00	.30	.30	.00	.00	.00	.02	.02
WLCS2-201022	10/22/2020	10:17 PM	21.82	-1.00	10.86	512.91	1,013.18	.00	1,000.55	12.64	4.88	9.65	9.65
CCV-PH	10/22/2020	10:20 PM	21.74	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCVALK	10/22/2020	10:29 PM	21.66	-1.00	10.85	514.31	1,015.64	.00	1,002.66	12.98	4.90	9.67	9.67
DI RINSE	10/22/2020	10:34 PM	21.79	-1.00	6.09	.00	.68	.68	.00	.00	.00	.02	.02
WLCSD2-201022	10/22/2020	10:42 PM	21.85	-1.00	10.86	513.81	1,016.23	.00	1,004.83	11.39	4.89	9.68	9.68
HS20101079-03	10/22/2020	10:49 PM	21.79	-1.00	7.28	.00	351.33	351.33	.00	.00	.00	3.35	3.35
HS20101079-03DUP	10/22/2020	10:55 PM	21.74	-1.00	7.18	.00	343.94	343.94	.00	.00	.00	3.28	3.28
HS20101079-01	10/22/2020	11:02 PM	21.66	-1.00	7.07	.00	516.66	516.66	.00	.00	.00	4.92	4.92
HS20101062-05	10/22/2020	11:09 PM	21.67	-1.00	8.64	10.74	284.62	263.15	21.47	.00	.10	2.71	2.71
HS20100916-02	10/22/2020	11:14 PM	21.67	-1.00	6.77	.00	85.48	85.48	.00	.00	.00	.81	.81
HS20101043-01	10/22/2020	11:22 PM	21.67	-1.00	7.46	.00	819.67	819.67	.00	.00	.00	7.81	7.81
HS20101043-02	10/22/2020	11:30 PM	21.73	-1.00	7.62	.00	840.11	840.11	.00	.00	.00	8.00	8.00
HS20101043-03	10/22/2020	11:39 PM	21.85	-1.00	7.77	.00	947.38	947.38	.00	.00	.00	9.02	9.02
HS20101043-04	10/22/2020	11:46 PM	21.82	-1.00	8.15	.00	378.10	378.10	.00	.00	.00	3.60	3.60
CCV-PH	10/22/2020	11:48 PM	21.79	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/22/2020	11:57 PM	21.70	-1.00	10.87	522.47	1,024.75	.00	1,004.56	20.19	4.98	9.76	9.76
DI RINSE	10/23/2020	12:02 AM	21.79	-1.00	6.04	.00	.61	.61	.00	.00	.00	.02	.02
HS20101043-05	10/23/2020	12:10 AM	21.71	-1.00	7.77	.00	878.85	878.85	.00	.00	.00	8.37	8.37
HS20101043-06	10/23/2020	12:18 AM	21.76	-1.00	7.94	.00	841.58	841.58	.00	.00	.00	8.02	8.02
HS20101043-07	10/23/2020	12:25 AM	21.74	-1.00	7.74	.00	541.25	541.25	.00	.00	.00	5.15	5.15
HS20101043-08	10/23/2020	12:33 AM	21.76	-1.00	7.69	.00	697.46	697.46	.00	.00	.00	6.64	6.64
HS20101043-09	10/23/2020	12:41 AM	21.85	-1.00	7.73	.00	594.28	594.28	.00	.00	.00	5.66	5.66
HS20101043-10	10/23/2020	12:48 AM	21.79	-1.00	7.74	.00	635.01	635.01	.00	.00	.00	6.05	6.05
HS20101043-11	10/23/2020	12:54 AM	21.82	-1.00	8.15	.00	366.37	366.37	.00	.00	.00	3.49	3.49

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20101101-01	10/23/2020	1:02 AM	21.77	-1.00	8.07	.00	809.43	809.43	.00	.00	.00	7.71	7.71
HS20101101-02	10/23/2020	1:09 AM	21.71	-1.00	7.92	.00	511.55	511.55	.00	.00	.00	4.87	4.87
CCV-PH	10/23/2020	1:12 AM	21.64	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	1:21 AM	21.61	-1.00	10.85	515.01	1,024.64	.00	1,019.27	5.37	4.90	9.76	9.76
DI RINSE	10/23/2020	1:26 AM	21.74	-1.00	6.05	.00	.32	.32	.00	.00	.00	.02	.02
HS20101101-03	10/23/2020	1:34 AM	21.85	-1.00	8.02	.00	773.96	773.96	.00	.00	.00	7.37	7.37
HS20101101-04	10/23/2020	1:41 AM	21.85	-1.00	7.89	.00	555.83	555.83	.00	.00	.00	5.29	5.29
HS20101101-05	10/23/2020	1:51 AM	21.79	-1.00	8.16	.00	1,224.26	1,224.26	.00	.00	.00	11.66	11.66
WBLKW3-201022	10/23/2020	1:56 AM	21.79	-1.00	5.94	.00	.81	.81	.00	.00	.00	.02	.02
LCS3-201022	10/23/2020	2:04 AM	21.67	-1.00	10.78	507.57	1,018.57	3.42	1,015.15	.00	4.83	9.70	9.70
LCSD3-201022	10/23/2020	2:14 AM	21.69	-1.00	10.78	500.15	1,010.07	9.77	1,000.29	.00	4.76	9.62	9.62
HS20101123-01	10/23/2020	2:20 AM	21.74	-1.00	7.30	.00	232.94	232.94	.00	.00	.00	2.22	2.22
HS20101123-01DUP	10/23/2020	2:26 AM	21.74	-1.00	7.30	.00	235.27	235.27	.00	.00	.00	2.24	2.24
HS20101123-04	10/23/2020	2:34 AM	21.69	-1.00	7.00	.00	877.42	877.42	.00	.00	.00	8.36	8.36
CCV-PH	10/23/2020	2:36 AM	21.74	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	2:45 AM	21.69	-1.00	10.81	504.63	1,025.68	16.42	1,009.26	.00	4.81	9.77	9.77
DI RINSE	10/23/2020	2:50 AM	21.64	-1.00	6.03	.00	.67	.67	.00	.00	.00	.02	.02
HS20101123-09	10/23/2020	2:57 AM	21.58	-1.00	7.13	.00	327.76	327.76	.00	.00	.00	3.12	3.12
HS20101063-01	10/23/2020	3:06 AM	21.57	-1.00	8.65	50.85	1,048.54	946.84	101.69	.00	.48	9.99	9.99
HS20101063-02	10/23/2020	3:13 AM	21.58	-1.00	8.57	10.03	284.46	264.39	20.06	.00	.10	2.71	2.71
HS20101063-03	10/23/2020	3:20 AM	21.56	-1.00	8.43	6.55	253.16	240.05	13.11	.00	.06	2.41	2.41
HS20101095-01	10/23/2020	3:27 AM	21.58	-1.00	8.66	13.84	318.99	291.31	27.68	.00	.13	3.04	3.04
HS20101095-02	10/23/2020	3:36 AM	21.71	-1.00	8.66	27.64	650.68	595.41	55.27	.00	.26	6.20	6.20
HS20101101-06	10/23/2020	3:43 AM	21.70	-1.00	7.90	.00	734.31	734.31	.00	.00	.00	6.99	6.99
HS20101101-07	10/23/2020	3:52 AM	21.69	-1.00	7.94	.00	1,029.11	1,029.11	.00	.00	.00	9.80	9.80
HS20101101-08	10/23/2020	4:01 AM	21.67	-1.00	7.79	.00	954.69	954.69	.00	.00	.00	9.09	9.09
CCV-PH	10/23/2020	4:03 AM	21.66	-1.00	7.04	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	4:12 AM	21.56	-1.00	10.79	506.48	1,032.33	19.38	1,012.96	.00	4.82	9.83	9.83
DI RINSE	10/23/2020	4:17 AM	22.00	-1.00	6.04	.00	.43	.43	.00	.00	.00	.02	.02
HS20101101-09	10/23/2020	4:24 AM	21.77	-1.00	7.98	.00	512.34	512.34	.00	.00	.00	4.88	4.88

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Run Number 3937 **Order Number** 20201022-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	mLs @ 8.3	mLs @ 4.5	mLs @ 4.2
HS20100855-01	10/23/2020	4:31 AM	21.80	-1.00	8.53	8.94	256.08	238.19	17.89	.00	.09	2.44	2.44
HS20100855-02	10/23/2020	4:38 AM	22.46	-1.00	8.53	7.71	243.00	227.57	15.43	.00	.07	2.31	2.31
HS20100855-03	10/23/2020	4:45 AM	22.84	-1.00	8.69	12.89	273.85	248.06	25.79	.00	.12	2.61	2.61
HS20100855-04	10/23/2020	4:51 AM	23.12	-1.00	8.73	14.90	297.38	267.58	29.80	.00	.14	2.83	2.83
HS20100855-05	10/23/2020	4:58 AM	23.28	-1.00	8.62	10.67	269.85	248.51	21.34	.00	.10	2.57	2.57
HS20100855-06	10/23/2020	5:05 AM	23.49	-1.00	8.65	10.91	268.00	246.18	21.82	.00	.10	2.55	2.55
HS20100855-07	10/23/2020	5:12 AM	23.72	-1.00	8.37	3.96	237.50	229.57	7.93	.00	.04	2.26	2.26
HS20100996-01DF500	10/23/2020	5:21 AM	23.83	-1.00	11.45	266.55	459.45	.00	385.80	73.65	2.54	4.38	4.38
CCV-PH	10/23/2020	5:23 AM	23.96	-1.00	7.05	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
CCV-ALK	10/23/2020	5:32 AM	23.99	-1.00	10.75	503.19	1,036.38	30.00	1,006.38	.00	4.79	9.87	9.87
DI RINSE	10/23/2020	5:37 AM	24.35	-1.00	6.03	.00	.65	.65	.00	.00	.00	.02	.02

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Batch ID Exception Report

Batch ID: R371120
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte		Qualifier	
SAMP	0	SAMP		23 Oct 2020 8:45 AM	1
	X	No exceptions found			

Batch ID Exception Report

Batch ID: R371121
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte	Qualifier		
SAMP	0	SAMP		23 Oct 2020 8:54 AM	1
	X	No exceptions found			

Batch ID Exception Report

Batch ID: R371123
QC Group: 0

Sample ID	Seq No	Sample Type	Test Code	Analyzed Date	Dilution Factor
	Analyte Type	Analyte	Qualifier		
SAMP	0	SAMP		23 Oct 2020 9:01 AM	1

X No exceptions found

HS20101123 ALS Kelso K2009641 Tier IV

ALS WO# HS20101123

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November 06, 2020

Analytical Report for Service Request No: K2009641

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 23, 2020
For your reference, these analyses have been assigned our service request number **K2009641.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009641
Date Received: 10/23/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Seven ground water samples were received for analysis at ALS Environmental on 10/23/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/06/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2009641

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101123
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
2.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
3.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
4.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
5.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
6.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020
7.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**
	TOC Analysis with DOD Level IV/EQuIS APTIM EDD			05 Nov 2020

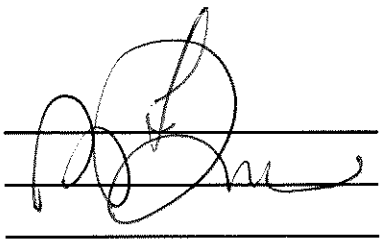
Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

K2009641

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14994**

QC Level: DOD IV (DoD Data Package)

Relinquished By:		Date/Time:	10/22/2020 1800.
Received By:		Date/Time:	10/23/20 0945
Cooler ID(s):		Temperature(s):	

PM KL

Cooler Receipt and Preservation Form

Client ALS - Houston Service Request K20 091041

Received: 10/23/20 Opened: 10/23/20 By: BR Unloaded: 10/23/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? Front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
MH	3.4	IR02				189188818907	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW56-201021	K2009641-001	**0.72**	0.50	0.20	0.07	1	11/03/20 11:36	
16IW20-201021	K2009641-002	**14.4**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW40-201021	K2009641-003	**7.35**	0.50	0.20	0.07	1	11/03/20 11:36	
16WW12-201021	K2009641-004	**3.98**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021	K2009641-005	**2.70**	0.50	0.20	0.07	1	11/03/20 11:36	
16RW04-201021-FD	K2009641-006	**2.67**	0.50	0.20	0.07	1	11/03/20 11:36	
16EW02-201021	K2009641-007	**7.36**	0.50	0.20	0.07	1	11/03/20 11:36	
Method Blank	K2009641-MB	ND U	0.50	0.20	0.07	1	11/03/20 11:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/03/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K2009641-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	0.72	1.99	1.35	94 #	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/23/20
		Date Analyzed:	11/3/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	16WW56-201021	**Units:**	mg/L
Lab Code:	K2009641-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K2009641-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	0.72	26.3	25.0	102	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009641
Project:	ALS Houston DOD TOC	**Date Analyzed:**	11/03/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	701641

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009641-LCS	24.0	25.0	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	701641	KQ2017240-01	11/03/20 11:36	25.0	25.7	103	90-110
CCV2	701641	KQ2017240-02	11/03/20 11:36	25.0	26.1	104	90-110
CCV3	701641	KQ2017240-03	11/03/20 11:36	25.0	25.8	103	90-110
CCV4	701641	KQ2017240-04	11/03/20 11:36	25.0	25.9	103	90-110
CCV5	701641	KQ2017240-16	11/03/20 11:36	25.0	25.8	103	90-110
CCV6	701641	KQ2017240-18	11/03/20 11:36	25.0	25.9	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K2009641
Project: ALS Houston DOD TOC

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	701641	KQ2017240-05	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB2	701641	KQ2017240-06	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB3	701641	KQ2017240-07	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB4	701641	KQ2017240-08	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB5	701641	KQ2017240-15	11/03/20 11:36	0.50	0.20	0.07	ND	U
CCB6	701641	KQ2017240-17	11/03/20 11:36	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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Work Request # Original ( ) K2009134, 9255, 9599, 9641, 9670

Tier: II II IV IV II

Date Analyzed: 11.3.20

Analyst: MAS Run # 701641

Analysis: SM 5310C/TOCT

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS:

-Rpd between source & dup sample is high but both results are below 5x the MRL

Final Approved by: _____ Date: 11/5/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K2009134-002	Carbon, Total Organic	N/A		Water	0.64 mg/L	10 mL	64 mg/L	100	7	50			11/3/20 11:36:00	N	II
K2009134-003	Carbon, Total Organic	N/A		Water	0.36 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009134-004	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	50 mg/L U	100	7	50			11/3/20 11:36:00	N	II
K2009255-001	Carbon, Total Organic	N/A		Ground Water	31.28 mg/L	10 mL	31.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-002	Carbon, Total Organic	N/A		Ground Water	14.47 mg/L	10 mL	14.5 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009255-003	Carbon, Total Organic	N/A		Ground Water	14.31 mg/L	10 mL	14.3 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
K2009599-001	Carbon, Total Organic	N/A		Ground Water	14.38 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-002	Carbon, Total Organic	N/A		Ground Water	3.74 mg/L	10 mL	3.74 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-003	Carbon, Total Organic	N/A		Ground Water	8.44 mg/L	10 mL	8.44 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009599-004	Carbon, Total Organic	N/A		Ground Water	4.52 mg/L	10 mL	4.52 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009599-005	Carbon, Total Organic	N/A		Ground Water	33.24 mg/L	10 mL	332 mg/L	10	0.7	5.0			11/3/20 11:36:00	N	IV
K2009641-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 mL	0.72 mg/L	1	0.07	0.50			11/3/20 11:36:00	Y	IV
K2009641-002	Carbon, Total Organic	N/A		Ground Water	14.39 mg/L	10 mL	14.4 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-003	Carbon, Total Organic	N/A		Ground Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-004	Carbon, Total Organic	N/A		Ground Water	3.98 mg/L	10 mL	3.98 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-005	Carbon, Total Organic	N/A		Ground Water	2.70 mg/L	10 mL	2.70 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-006	Carbon, Total Organic	N/A		Ground Water	2.67 mg/L	10 mL	2.67 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009641-007	Carbon, Total Organic	N/A		Ground Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	IV
K2009670-001	Carbon, Total Organic	N/A		Water	12.78 mg/L	10 mL	12.8 mg/L	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-01	Carbon, Total Organic	CCV		Water	25.74 mg/L	10 mL	25.7 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-02	Carbon, Total Organic	CCV		Water	26.06 mg/L	10 mL	26.1 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-03	Carbon, Total Organic	CCV		Water	25.82 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-04	Carbon, Total Organic	CCV		Water	25.86 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-07	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-08	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-09	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-01 **Analyst:** MSPECHT **Analysis Lot:** 701641 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2017240-10	Carbon, Total Organic	LCS		Water	24.00 mg/L	10 mL	24.0 mg/L	1	0.07	0.50	96		11/3/20 11:36:00	N	II
KQ2017240-11	Carbon, Total Organic	MS	K2009641-001	Ground Water	26.31 mg/L	10 mL	26.3 mg/L	1	0.07	0.50	102		11/3/20 11:36:00	N	IV
KQ2017240-12	Carbon, Total Organic	DUP	K2009641-001	Ground Water	1.99 mg/L	10 mL	1.99 mg/L	1	0.07	0.50		94*	11/3/20 11:36:00	N	IV
KQ2017240-13	Carbon, Total Organic	MS	K2009599-003	Ground Water	30.52 mg/L	10 mL	30.5 mg/L	1	0.07	0.50	88		11/3/20 11:36:00	N	IV
KQ2017240-14	Carbon, Total Organic	DUP	K2009599-003	Ground Water	8.47 mg/L	10 mL	8.47 mg/L	1	0.07	0.50		<1	11/3/20 11:36:00	N	IV
KQ2017240-15	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-16	Carbon, Total Organic	CCV		Ground Water	25.81 mg/L	10 mL	25.8 mg/L	1					11/3/20 11:36:00	N	II
KQ2017240-17	Carbon, Total Organic	CCB		Ground Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			11/3/20 11:36:00	N	II
KQ2017240-18	Carbon, Total Organic	CCV		Ground Water	25.87 mg/L	10 mL	25.9 mg/L	1					11/3/20 11:36:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Fusion Report - 11032020
Tuesday, November 03, 2020 11:36 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 11:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.77	29.98	16.21	49.60	05:24
2	TC Clean	39.08	52.21	13.13	50.34	04:05
3	TC Clean	8.61	21.95	13.34	50.36	03:51
4	TC Clean	10.08	23.09	13.01	50.34	03:51

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 11:58

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.19	13.34	13.15	49.82	05:24
2	TC Clean	12.57	25.54	12.97	50.09	04:01
3	TC Clean	5.95	18.94	12.99	50.33	03:49
4	TC Clean	8.24	21.10	12.85	50.24	03:47

Sample Type: Clean From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/11/03 12:20

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.36	13.22	12.86	49.50	05:11
2	TC Clean	11.19	24.11	12.92	50.30	04:04
3	TC Clean	5.27	18.13	12.86	50.08	03:46
4	TC Clean	8.34	21.24	12.90	50.07	03:45

Sample Type: Blank (Creating v1471) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2020/11/03 12:49

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.46	22.30	12.83	49.38	05:13
2	TC Clean	11.94	24.85	12.91	50.24	04:06
3	TC Clean	8.41	21.21	12.79	50.08	03:56
4	TC Clean	8.14	20.76	12.62	50.22	03:56
5	Reagent Blank	13.63	26.37	12.75	50.10	05:06
6	Acid Blank	0.79	13.42	12.63	49.86	05:30

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.1929 ppm	0.0000 ppm	0.0000%	2020/11/03 13:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1929	1.9285	11.16	23.76	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0291 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0291	260.2915	192.48	205.17	12.69	50.55	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 13:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.44	21.27	12.82	50.57	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 14:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.45	21.04	12.59	50.53	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◉	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.3615 ppm (PASS)	0.0000 ppm	0%	2020/11/03 14:22

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

	Type									
C	TOC	25.0 ppm	1	24.3615	243.6154	180.78	193.55	12.77	50.51	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.3202 ppm	0.0000 ppm	0.0000%	2020/11/03 14:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3202	3.2015	12.06	24.80	12.74	50.46	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K2009468-008 DOC	0.7621 ppm	0.0319 ppm	4.1800%	2020/11/03 14:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7396	7.3955	15.00	27.80	12.80	50.44	10:26
2	TOC	0.7846	7.8460	15.32	27.92	12.60	50.56	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K2009501-001 DOC	10.6458 ppm	0.0354 ppm	0.3300%	2020/11/03 15:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.6708	106.7080	84.66	97.52	12.85	50.50	10:26
2	TOC	10.6208	106.2076	84.31	97.01	12.69	50.48	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	K2009501-003 DOC 4x	17.4630 ppm	0.0816 ppm	0.4700%	2020/11/03 15:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.4053	174.0525	131.91	144.74	12.83	50.51	10:27
2	TOC	17.5207	175.2072	132.72	145.57	12.86	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC)	CAS_salt_010711	CAS_salt_010711

(v1471) (v4) (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K2009501-003DUP DOC 4x	17.0412 ppm	0.0286 ppm	0.1700%	2020/11/03 16:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.0614	170.6141	129.49	141.95	12.45	50.38	10:29
2	TOC	17.0209	170.2092	129.21	141.96	12.75	50.51	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K2009501-003MS DOC 5x	40.6505 ppm	0.1104 ppm	0.2700%	2020/11/03 16:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	40.5725	405.7247	294.42	307.16	12.74	50.46	10:25
2	TOC	40.7286	407.2857	295.52	308.25	12.74	50.41	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K2009560-001 DOC	1.7795 ppm	0.0095 ppm	0.5300%	2020/11/03 17:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7862	17.8619	22.34	35.19	12.85	50.34	10:28
2	TOC	1.7728	17.7279	22.25	34.85	12.60	50.48	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K2009560-002 DOC	0.4700 ppm	0.0203 ppm	4.3100%	2020/11/03 17:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4557	4.5572	13.01	25.84	12.83	50.43	10:28
2	TOC	0.4844	4.8438	13.21	26.02	12.81	50.39	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.7386 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7386	257.3862	190.44	203.18	12.73	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 18:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.77	20.63	12.85	50.36	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2009560-004 DOC	1.1781 ppm	0.0266 ppm	2.2600%	2020/11/03 18:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1592	11.5923	17.94	30.81	12.87	50.40	10:30
2	TOC	1.1969	11.9687	18.21	30.97	12.76	50.55	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2009560-005 DOC	0.9729 ppm	0.0276 ppm	2.8400%	2020/11/03 19:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9924	9.9244	16.77	29.26	12.49	50.48	10:28
2	TOC	0.9534	9.5338	16.50	29.20	12.71	50.43	10:26

Dilution	Blank Contribution	Method	Calibration

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K2009560-006 DOC	0.7008 ppm	0.0281 ppm	4.0100%	2020/11/03 19:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6810	6.8096	14.59	27.49	12.90	50.41	10:27
2	TOC	0.7207	7.2073	14.87	27.57	12.70	50.40	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K2009560-007 DOC	0.8376 ppm	0.0023 ppm	0.2800%	2020/11/03 20:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8359	8.3592	15.68	28.40	12.73	50.37	10:26
2	TOC	0.8392	8.3920	15.70	28.31	12.61	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K2009560-008 DOC	0.5497 ppm	0.0073 ppm	1.3200%	2020/11/03 20:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5548	5.5480	13.70	26.46	12.75	50.39	10:25
2	TOC	0.5445	5.4453	13.63	26.56	12.93	50.36	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K2009560-009 DOC	0.7137 ppm	0.0290 ppm	4.0700%	2020/11/03 20:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6932	6.9322	14.67	27.47	12.80	50.36	10:27
2	TOC	0.7343	7.3428	14.96	27.64	12.68	50.34	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K2009599-001	14.3778 ppm	0.1881 ppm	1.3100%	2020/11/03 21:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.5108	145.1081	111.60	124.25	12.65	50.36	10:30
2	TOC	14.2448	142.4480	109.74	122.50	12.76	50.38	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K2009599-002	3.7353 ppm	0.0174 ppm	0.4700%	2020/11/03 21:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7476	37.4761	36.10	48.70	12.60	50.34	10:27
2	TOC	3.7229	37.2295	35.93	48.72	12.79	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2009599-003	8.4434 ppm	0.2066 ppm	2.4500%	2020/11/03 22:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5895	85.8950	70.06	82.63	12.56	50.38	10:27
2	TOC	8.2973	82.9726	68.02	80.93	12.91	50.37	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K2009599-003DUP	8.4682 ppm	0.1266 ppm	1.5000%	2020/11/03 22:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.5577	85.5771	69.84	82.73	12.89	50.38	10:28
2	TOC	8.3787	83.7866	68.59	81.35	12.77	50.38	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.0569 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:18

Pos	Base Analysis	ID	Rep	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run

	Type		#							Time
B	TOC	25 ppm	1	26.0569	260.5694	192.68	205.51	12.83	50.37	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/03 23:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.73	12.69	50.35	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/03 23:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.49	20.24	12.75	50.34	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.0002 ppm (PASS)	0.0000 ppm	0%	2020/11/04 00:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.0002	240.0016	178.25	191.05	12.80	50.33	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K2009599-003MS	30.5199 ppm	0.2792 ppm	0.9100%	2020/11/04 00:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.7173	307.1734	225.29	237.88	12.59	50.33	10:29
2	TOC	30.3225	303.2246	222.52	235.37	12.85	50.33	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K2009599-004	4.5248 ppm	0.1496 ppm	3.3100%	2020/11/04 00:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.6306	46.3059	42.29	55.23	12.93	50.33	10:26
2	TOC	4.4190	44.1904	40.81	53.60	12.79	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K2009599-005 10x	33.2444 ppm	0.4726 ppm	1.4200%	2020/11/04 01:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.9103	329.1027	240.67	253.38	12.71	50.32	10:27
2	TOC	33.5786	335.7857	245.36	258.09	12.73	50.29	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K2009641-001	5.3742 ppm	0.2819 ppm	5.2500%	2020/11/04 01:40

-NH carry over

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.5736	55.7360	48.91	61.56	12.66	50.29	10:31
2	TOC	5.1749	51.7487	46.11	59.07	12.95	50.30	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K2009641-001DUP	1.9856 ppm	0.0348 ppm	1.7500%	2020/11/04 02:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.0101	20.1014	23.91	36.68	12.77	50.31	10:28
2	TOC	1.9610	19.6096	23.57	36.34	12.78	50.31	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	26	TOC	K2009641-001MS	26.3108 ppm	0.0841 ppm	0.3200%	2020/11/04 02:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	26.3703	263.7026	194.79	207.61	12.82	50.26	10:31
2	TOC	26.2514	262.5137	193.96	207.12	13.16	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	27	TOC	K2009641-002	14.3894 ppm	0.3804 ppm	2.6400%	2020/11/04 03:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6584	146.5836	112.64	125.62	12.99	50.28	10:27
2	TOC	14.1204	141.2035	108.86	121.75	12.89	50.27	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	28	TOC	K2009641-003	7.3487 ppm	0.0012 ppm	0.0200%	2020/11/04 03:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3496	73.4955	61.37	74.32	12.95	50.27	10:30
2	TOC	7.3478	73.4784	61.36	74.16	12.81	50.28	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◉	29	TOC	K2009641-004	3.9775 ppm	0.0623 ppm	1.5700%	2020/11/04 04:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0216	40.2160	38.02	50.81	12.78	50.28	10:30
2	TOC	3.9335	39.3350	37.40	50.11	12.71	50.27	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K2009641-005	2.7030 ppm	0.0247 ppm	0.9100%	2020/11/04 04:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6856	26.8557	28.65	41.18	12.53	50.25	10:26
2	TOC	2.7205	27.2050	28.90	41.84	12.95	50.26	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K2009641-006	2.6683 ppm	0.0241 ppm	0.9000%	2020/11/04 04:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.6853	26.8529	28.65	41.25	12.61	50.25	10:25
2	TOC	2.6512	26.5122	28.41	41.25	12.84	50.27	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	K2009641-007	7.3631 ppm	0.0302 ppm	0.4100%	2020/11/04 05:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3417	73.4171	61.31	74.17	12.86	50.27	10:28
2	TOC	7.3845	73.8448	61.61	74.50	12.88	50.25	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8156 ppm (PASS)	0.0000 ppm	0%	2020/11/04 05:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8156	258.1560	190.98	203.77	12.79	50.25	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 06:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.53	20.42	12.89	50.24	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K2009670-001	12.7753 ppm	0.0369 ppm	0.2900%	2020/11/04 06:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.7493	127.4926	99.24	112.12	12.88	50.22	10:26
2	TOC	12.8014	128.0143	99.61	112.45	12.84	50.19	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K2009255-001	31.2797 ppm	0.5426 ppm	1.7300%	2020/11/04 06:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	30.8960	308.9596	226.54	239.32	12.78	50.19	10:27
2	TOC	31.6633	316.6334	231.92	244.59	12.66	50.28	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K2009255-002	14.4665 ppm	0.3169 ppm	2.1900%	2020/11/04 07:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.6906	146.9057	112.86	125.76	12.90	50.28	10:27
2	TOC	14.2424	142.4238	109.72	122.66	12.95	50.32	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

		Analysis			Std. Dev.		

	Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
◈	36	TOC	K2009255-003	14.3057 ppm	0.2508 ppm	1.7500%	2020/11/04 07:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.4830	144.8301	111.41	124.15	12.74	50.45	10:31
2	TOC	14.1283	141.2833	108.92	121.82	12.90	50.31	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K2009134-002 100X	0.6368 ppm	0.0439 ppm	6.9000%	2020/11/04 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6678	6.6785	14.50	27.19	12.69	50.33	10:30
2	TOC	0.6057	6.0569	14.06	27.05	12.99	50.46	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K2009134-003 100X	0.3611 ppm	0.0127 ppm	3.5200%	2020/11/04 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3521	3.5209	12.28	25.08	12.79	50.33	10:32
2	TOC	0.3700	3.7005	12.41	25.02	12.61	50.33	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	K2009134-004 100X	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.36	21.09	12.73	50.35	10:30
2	TOC	0.0000	0.0000	8.59	21.35	12.76	50.29	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.84	19.67	12.84	50.36	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/11/04 09:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.78	19.55	12.77	50.32	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1470	1.6077	0.0460	0.0000	0.0000	0.0000	2020/10/30 19:52	Fusion1 (Fusion1)
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v38	Calibration curve formula:	TOC: y = 7.015x + 9.892
Ver Creation:	2020/06/13 16:40	r^2 value:	TOC: r^2 = 0.99974
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 10:09

Fusion Report - 11032020
Wednesday, November 04, 2020 10:34 AM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 11:20 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11032020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v6)		
Comment:			

Report Results

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8577 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8577	258.5765	191.28	204.17	12.89	50.35	10:27

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 6

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 10:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.67	20.68	13.01	50.21	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met. (v4) (v38)

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml

UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 11:04

Fusion Report - 11042020A
Wednesday, November 04, 2020 12:16 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/11/04 14:04 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	11042020A	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1)		
Comment:			

Report Results

Sample Type: Sample — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.1022 ppm	0.0000 ppm	0.0000%	2020/11/04 12:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1022	1.0219	10.53	23.56	13.03	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8736 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8736	258.7362	191.39	204.35	12.96	50.46	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 12:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.05	20.94	12.89	50.39	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Sample Type: Sample From Schedule Version 1

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K2009641-001	0.7150 ppm	0.0316 ppm	4.4100%	2020/11/04 13:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7373	7.3727	14.98	27.58	12.60	50.37	10:25
2	TOC	0.6926	6.9265	14.67	27.62	12.95	50.37	10:25

-Reported Value w/o carry over

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.8112 (IC) (v1471)	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.8075 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8075	258.0747	190.93	203.88	12.96	50.42	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 1

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/11/04 13:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.16	20.83	12.67	50.28	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v38)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1471	4.5417	0.7860	0.0000	0.0000	0.0000	2020/11/03 13:23	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v38
Ver Creation: 2020/06/13 16:40
Comment:
Operator: Fusion1 (Fusion1)
Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 7.015x + 9.892
r^2 value: TOC: r^2 = 0.99974

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5750	0.0000		2020/06/13 15:13
0.500 ppm	12.9010	0.5000		2020/06/13 15:28
1.0 ppm	15.6320	1.0000		2020/06/13 15:42
5.0 ppm	43.2510	5.0000		2020/06/13 15:56
10 ppm	82.4040	10.0000		2020/06/13 16:11
25 ppm	188.6880	25.0000		2020/06/13 16:25
50 ppm	358.6500	50.0000		2020/06/13 16:39

Methods

Name: CAS_salt_010711 (TOC)

Version: v4
Ver Creation: 2019/02/21 17:57
Comment:
Operator: Fusion1 (Fusion1)

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/11/04 13:58

ALS Environmental

StarLIMS Run: 701641

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 19-GEN-8-55J 50 ppm LCS: 19-GEN-8-41K 25.0 ppm

ICAL Date: 6/16/2020

ICAL ID: 19-GEN-8-22-G

ICS ID: 19-GEN-8-35-K

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 19-GEN-8-55I 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 19-GEN-08-55K

21 % H3PO4: 19-GEN-08-55L

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: MAS	Date Analyzed: 11/3/2020
Reviewed By:	Date Reviewed: 11/5/20

HS20101123 - Sub Perch Report IV (E2001035)

ALS WO# HS20101123

October 29, 2020 Service Request No:E2001035

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101123

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 22, 2020
For your reference, these analyses have been assigned our service request number **E2001035.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001035
Project:	HS20101123	**Date Received:**	10/22/20
Sample Matrix:	L		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eleven samples were received for analysis at ALS Environmental in Houston on 10/22/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Due to the sample matrix, samples E2001035-010/011 had to be prepped as solids (samples viscous).

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000537: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS, DLCS, MS, & DMS recoveries are within QC limits.

EQ2000548: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001035
Project: HS20101123

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001035-001	16WW56-201021	10/21/2020	0750
E2001035-002	16RW11-201021	10/21/2020	0845
E2001035-003	16RW11-201021-FD	10/21/2020	0845
E2001035-004	16IW20-201021	10/21/2020	0930
E2001035-005	16WW40-201021	10/21/2020	1015
E2001035-006	16WW12-201021	10/21/2020	1100
E2001035-007	16RW04-201021	10/21/2020	1145
E2001035-008	16RW04-201021-FD	10/21/2020	1145
E2001035-009	16EW02-201021	10/21/2020	1235
E2001035-010	16EW06-201021	10/21/2020	1330
E2001035-011	16EW06-201021-FD	10/21/2020	1330

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001035-001	16WW56-201021	Ground Water	10/21/20 0750	**IV**
E2001035-002	16RW11-201021	Ground Water	10/21/20 0845	**IV**
E2001035-003	16RW11-201021-FD	Ground Water	10/21/20 0845	**IV**
E2001035-004	16IW20-201021	Ground Water	10/21/20 0930	**IV**
E2001035-005	16WW40-201021	Ground Water	10/21/20 1015	**IV**
E2001035-006	16WW12-201021	Ground Water	10/21/20 1100	**IV**
E2001035-007	16RW04-201021	Ground Water	10/21/20 1145	**IV**
E2001035-008	16RW04-201021-FD	Ground Water	10/21/20 1145	**IV**
E2001035-009	16EW02-201021	Ground Water	10/21/20 1235	**IV**
E2001035-010	16EW06-201021	Misc. Solid	10/21/20 1330	**IV**
E2001035-011	16EW06-201021-FD	Misc. Solid	10/21/20 1330	**IV**

Service Request Summary

Folder #: **E2001035**
Client Name: ALS Environmental - US
Project Name: HS20101123
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/22/20
Internal Due Date: 11/5/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101123
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
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Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **14995**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101123
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101123-01**	**16WW56-201021**	**Groundwater**	**21 Oct 2020 07:50**
	SUB_Perch-6850			05 Nov 2020
2.	**HS20101123-02**	**16RW11-201021**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
3.	**HS20101123-03**	**16RW11-201021-FD**	**Groundwater**	**21 Oct 2020 08:45**
	SUB_Perch-6850			05 Nov 2020
4.	**HS20101123-04**	**16IW20-201021**	**Groundwater**	**21 Oct 2020 09:30**
	SUB_Perch-6850			05 Nov 2020
5.	**HS20101123-05**	**16WW40-201021**	**Groundwater**	**21 Oct 2020 10:15**
	SUB_Perch-6850			05 Nov 2020
6.	**HS20101123-06**	**16WW12-201021**	**Groundwater**	**21 Oct 2020 11:00**
	SUB_Perch-6850			05 Nov 2020
7.	**HS20101123-07**	**16RW04-201021**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
8.	**HS20101123-08**	**16RW04-201021-FD**	**Groundwater**	**21 Oct 2020 11:45**
	SUB_Perch-6850			05 Nov 2020
9.	**HS20101123-09**	**16EW02-201021**	**Groundwater**	**21 Oct 2020 12:35**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 14995**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	SUB_Perch-6850			05 Nov 2020
10.	**HS20101123-10**	**16EW06-201021**	**Groundwater**	**21 Oct 2020 13:30**
	SUB_Perch-6850			05 Nov 2020
11.	**HS20101123-11**	**16EW06-201021-FD**	**Groundwater**	**21 Oct 2020 13:30**
	SUB_Perch-6850			05 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS20101123-01 = MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 10/22/20 1645

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1824

Date/Time Received: 10/12/20 Initials: CH

Date/Time Logged in: 10/12/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALS) ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ✓ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
–		10/12/20	1645	CH	3.3	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001035-001	16WW56-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001035-002	16RW11-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001035-003	16RW11-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001035-004	16IW20-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001035-005	16WW40-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001035-006	16WW12-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001035-007	16RW04-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001035-008	16RW04-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001035-009	16EW02-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001036-001	16WW27-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001036-002	16WW27-201022-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001036-003	16WW43-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001036-004	16WW13-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001036-005	16WW42-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001036-006	16RW02-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001036-007	16RW05-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001036-008	16EW03-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2000537-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000537-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000537-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000537-04	16WW56-201021 MS	.01	6850/ClO4 DOD			Liquid	10mL	
22	EQ2000537-05	16WW56-201021 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000537-02	1.00µL	EQ2000537-03	1.00µL	EQ2000537-04	1.00µL	EQ2000537-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001035-001	100.00µL	E2001035-002	100.00µL	E2001035-003	100.00µL	E2001035-004	100.00µL	E2001035-005	100.00µL	E2001035-006	100.00µL
E2001035-007	100.00µL	E2001035-008	100.00µL	E2001035-009	100.00µL	E2001036-001	100.00µL	E2001036-002	100.00µL	E2001036-003	100.00µL
E2001036-004	100.00µL	E2001036-005	100.00µL	E2001036-006	100.00µL	E2001036-007	100.00µL	E2001036-008	100.00µL	EQ2000537-01	100.00µL
EQ2000537-02	100.00µL	EQ2000537-03	100.00µL	EQ2000537-04	100.00µL	EQ2000537-05	100.00µL				

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

Preparation Steps

Step: Preparation
Started: 10/26/20 14:30
Finished: 10/26/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/27/2020

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

Prep Run#: 368660 **Prep WorkFlow:** Gen CLO4 **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/28/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001025-001	2020-BH-1-1	.01	6850/ClO4			Soil	1.006g	
2	E2001025-002	2020-BH-1-7	.01	6850/ClO4			Soil	1.040g	
3	E2001035-010	16EW06-201021	.02	6850/ClO4 DOD			Misc. Solid	1.003g	
4	E2001035-011	16EW06-201021-FD	.02	6850/ClO4 DOD			Misc. Solid	1.066g	
5	E2001036-009	16EW07-201022	.02	6850/ClO4 DOD			Misc. Solid	1.070g	
6	EQ2000548-01	MB		6850/ClO4 DOD			Solid	1.047g	
7	EQ2000548-02	LCS		6850/ClO4 DOD			Solid	0.980g	
8	EQ2000548-03	DLCS		6850/ClO4 DOD			Solid	0.977g	
9	EQ2000548-04	2020-BH-1-1 MS	.01	6850/ClO4			Solid	0.994g	
10	EQ2000548-05	2020-BH-1-1 DMS	.01	6850/ClO4			Solid	0.985g	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL EQ2000548-05 100.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001025-001 100.00µL E2001025-002 100.00µL E2001035-010 100.00µL E2001035-011 100.00µL E2001036-009 100.00µL EQ2000548-01 100.00µL
EQ2000548-01 100.00µL EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL
EQ2000548-05 100.00µL

Preparation Steps

Step: Extraction
Started: 10/28/20 14:30
Finished: 10/28/20 15:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/29/2020

Preparation Information Benchsheet

Prep Run#: 368660
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: Gen CLO4
Prep Method: Method

Status: Prepped
Prep Date/Time: 10/28/20 14:30

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.309**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:43	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021	**Units:**	µg/L
Lab Code:	E2001035-002	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:51	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0845
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW11-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-003	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:59	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0930
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16IW20-201021	**Units:**	µg/L
Lab Code:	E2001035-004	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/28/20 13:29	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1015
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW40-201021	**Units:**	µg/L
Lab Code:	E2001035-005	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.240**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:23	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1100
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW12-201021	**Units:**	µg/L
Lab Code:	E2001035-006	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**18.5**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:31	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021	**Units:**	µg/L
Lab Code:	E2001035-007	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:38	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1145
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16RW04-201021-FD	**Units:**	µg/L
Lab Code:	E2001035-008	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:46	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1235
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16EW02-201021	**Units:**	µg/L
Lab Code:	E2001035-009	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 15:54	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021	**Units:**	µg/Kg
Lab Code:	E2001035-010	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.997	0.750	0.300	1	10/28/20	10/28/20 18:09	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 1330
Sample Matrix:	Misc. Solid	**Date Received:**	10/22/20
Sample Name:	16EW06-201021-FD	**Units:**	µg/Kg
Lab Code:	E2001035-011	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.938	0.750	0.300	1	10/28/20	10/28/20 18:17	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000537-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:04	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/Kg
Lab Code:	EQ2000548-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.955	0.750	0.300	1	10/28/20	10/28/20 17:14	368660	701275	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123
Sample Matrix: Ground Water

Service Request: E2001035
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: As Received

Extraction Lot: 368462

	Lab Control Sample EQ2000537-02			Duplicate Lab Control Sample EQ2000537-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.101	0.100	101	0.104	0.100	104	84 - 119	3	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:12	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:20	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20
Sample Matrix:	Misc. Solid		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/Kg
Prep Method:	Method	**Basis:**	As Received
		Extraction Lot:	368660

	Lab Control Sample EQ2000548-02			Duplicate Lab Control Sample EQ2000548-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	103	102	101	109	102	106	84 - 121	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**103**		1.02	0.765	0.307	1	10/28/20	10/28/20 17:22	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**109**		1.02	0.768	0.308	1	10/28/20	10/28/20 17:30	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
		Date Analyzed:	10/26/20

Matrix Spike Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	E2001035-001	**Basis:**	As Received

Analytical Method: 6850

		16WW56-201021MS				16WW56-201021DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000537-04				EQ2000537-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.309	0.407	0.100	98		0.407	0.100	98	84 - 119	<1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-04	**Basis:**	As Received
Run Type:	Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:28	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Collected:**	10/21/20 0750
Sample Matrix:	Ground Water	**Date Received:**	10/22/20
Sample Name:	16WW56-201021	**Units:**	µg/L
Lab Code:	EQ2000537-05	**Basis:**	As Received
Run Type:	Duplicate Matrix Spike		

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.407**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:35	368462	701198	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201020

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	PERCHLORATE1		20201020_009	Perchlorate6850b.lcm	1x	☒	3100806-05	10/20/2020 17:02
2	PERCHLORATE2		20201020_011	Perchlorate6850b.lcm	1x	☒	3100806-07	10/20/2020 17:18
3	PERCHLORATE3		20201020_012	Perchlorate6850b.lcm	1x	☒	3100807-01	10/20/2020 17:26
4	PERCHLORATE4		20201020_013	Perchlorate6850b.lcm	1x	☒	3100807-02	10/20/2020 17:34
5	PERCHLORATE5		20201020_014	Perchlorate6850b.lcm	1x	☒	3100807-03	10/20/2020 17:42
6	PERCHLORATE6		20201020_015	Perchlorate6850b.lcm	1x	☒	3100807-04	10/20/2020 17:50
7	PERCHLORATE7		20201020_016	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 17:58
8	PERCHLORATE8		20201020_017	Perchlorate6850b.lcm	1x	☒	3100807-06	10/20/2020 18:06
9	PERCHLORATE9		20201020_018	Perchlorate6850b.lcm	1x	☒	3100807-07	10/20/2020 18:14
10	PERCHLORATEICV		20201020_019	Perchlorate6850b.lcm	1x	☒	3100807-08	10/20/2020 18:21
11	IB		20201020_020	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:29
12	LODV		20201020_021	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:37
13	ICS		20201020_022	Perchlorate6850b.lcm	1x	☒		10/20/2020 18:45
14	PERCHLORATE7		20201020_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 18:53
15	EQ2000512-03RR		20201020_024	Perchlorate6850b.lcm	1x	☒		10/20/2020 19:01
16	E2000965-005X2		20201020_025	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:09
17	E2000966-002X2		20201020_026	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:17
18	E2000971-001X2		20201020_027	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:25
19	E2000971-003X2		20201020_028	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:33
20	E2000971-004X2		20201020_029	Perchlorate6850b.lcm	2x	☒		10/20/2020 19:40
21	E2000971-005X10		20201020_030	Perchlorate6850b.lcm	10x	☒		10/20/2020 19:48
22	PERCHLORATE7		20201020_031	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 19:56
23	EQ2000513-02RR		20201020_032	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:04
24	EQ2000513-03RR		20201020_033	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:12
25	EQ2000513-04RR		20201020_034	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:20
26	EQ2000513-05RR		20201020_035	Perchlorate6850b.lcm	1x	☒		10/20/2020 20:28
27	E2000981-001X2		20201020_036	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:36
28	E2000982-001X200		20201020_037	Perchlorate6850b.lcm	200x	☒		10/20/2020 20:44
29	E2000984-001X2		20201020_038	Perchlorate6850b.lcm	2x	☒		10/20/2020 20:51
30	E2000985-002X20		20201020_039	Perchlorate6850b.lcm	20x	☒		10/20/2020 20:59
31	E2000985-003X2		20201020_040	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:07
32	E2000985-004X10		20201020_041	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:15
33	PERCHLORATE7		20201020_042	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 21:23
34	E2000985-006X10		20201020_043	Perchlorate6850b.lcm	10x	☒		10/20/2020 21:31
35	E2000996-003X2		20201020_044	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:39
36	E2000996-005X2		20201020_045	Perchlorate6850b.lcm	2x	☒		10/20/2020 21:47
37	E2000996-006X5		20201020_046	Perchlorate6850b.lcm	5x	☒		10/20/2020 21:55
38	E2000996-009X5		20201020_047	Perchlorate6850b.lcm	5x	☒		10/20/2020 22:02
39	PERCHLORATE7		20201020_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/20/2020 22:10
40	null		20201020_049	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:15
41	null		20201020_050	Perchlorate6850b.lcm	1x	☒		10/20/2020 22:20
42								
43								

Initial Calibration - Detailed Report

Calibration ID: EC2000045 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2000045-01	PERCHLORATE1	20201020_009	10/20/2020 17:02
02	EC2000045-02	PERCHLORATE2	20201020_011	10/20/2020 17:18
03	EC2000045-03	PERCHLORATE3	20201020_012	10/20/2020 17:26
04	EC2000045-04	PERCHLORATE4	20201020_013	10/20/2020 17:34
05	EC2000045-05	PERCHLORATE5	20201020_014	10/20/2020 17:42
06	EC2000045-06	PERCHLORATE6	20201020_015	10/20/2020 17:50
07	EC2000045-07	PERCHLORATE7	20201020_016	10/20/2020 17:58
08	EC2000045-08	PERCHLORATE8	20201020_017	10/20/2020 18:06
09	EC2000045-09	PERCHLORATE9	20201020_018	10/20/2020 18:14

Analyte | **Curve Fit** | **Weighting**

Perchlorate | **Linear** | **Equal** | **R2 = 0.9997655579102110** | **Y=0.09298 X+0.005025**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1448	02	0.7000	0.09763	03	1.0000	0.1037	04	2.0000	0.09831
05	5.0000	0.0959	06	10.0000	0.08798	07	20.0000	0.09511	08	30.0000	0.09343
09	50.0000	0.09287									

Analyte

Perchlorate

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.102	1.6	02	0.7000	0.681	-2.7	03	1.0000	1.06	6.1
04	2.0000	2.06	3.0	05	5.0000	5.10	2.1	06	10.0000	9.41	-5.9
07	20.0000	20.4	2.0	08	30.0000	30.1	0.3	09	50.0000	49.9	-0.2

Initial Calibration Verification Summary Report

Calibration ID:	EC2000045	**Instrument ID:**	E-LCMS-01
Datafile ID:	20201020_019	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2000045-10	T	Linear	10	10.013	ng/mL	0.1	<= 15

ALS Group Houston

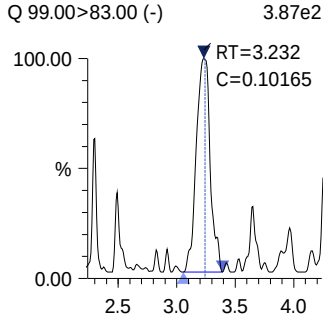
PERCHLORATE1

Date acquired: 10/20/2020 5:02:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_009.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	10/20/2020 5:02:55 PM	3205	0.10165	20201020_009	3.232	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	10/20/2020 5:02:55 PM	221415	1.00000	20201020_009	3.222	25.0000	1.0000	5

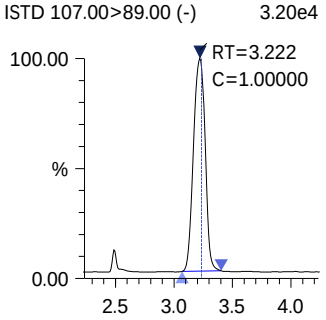
Perchlorate

Conc 0.10165
Area 3205



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 221415



ALS Group Houston

PERCHLORATE2

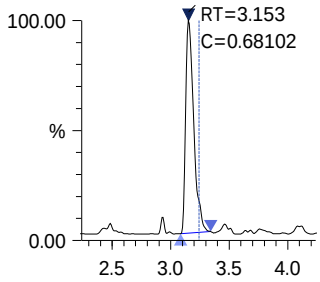
Date acquired: 10/20/2020 5:18:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_011.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	10/20/2020 5:18:44 PM	12196	0.68102	20201020_011	3.153	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE2	10/20/2020 5:18:44 PM	178459	1.00000	20201020_011	3.151	25.0000	1.0000	7

Perchlorate

Conc 0.68102
Area 12196

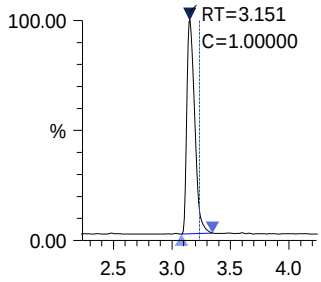
Q 99.00>83.00 (-) 2.52e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178459

ISTD 107.00>89.00 (-) 3.74e4



ALS Group Houston

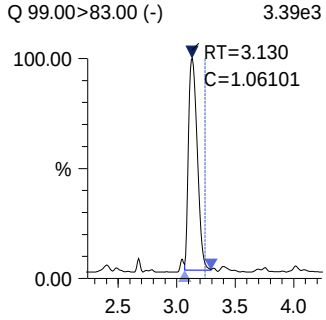
PERCHLORATE3

Date acquired: 10/20/2020 5:26:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_012.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	10/20/2020 5:26:37 PM	17953	1.06101	20201020_012	3.130	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE3	10/20/2020 5:26:37 PM	173169	1.00000	20201020_012	3.123	25.0000	1.0000	8

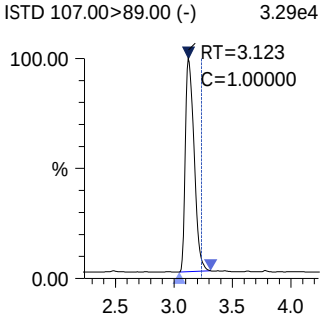
Perchlorate

Conc 1.06101
Area 17953



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173169



ALS Group Houston

PERCHLORATE4

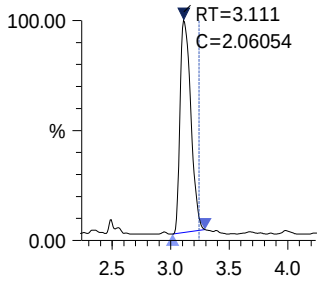
Date acquired: 10/20/2020 5:34:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_013.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	10/20/2020 5:34:30 PM	36954	2.06054	20201020_013	3.111	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE4	10/20/2020 5:34:30 PM	187954	1.00000	20201020_013	3.113	25.0000	1.0000	9

Perchlorate

Conc 2.06054
Area 36954

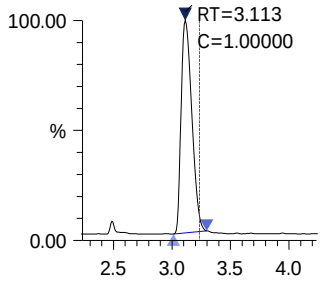
Q 99.00>83.00 (-) 5.74e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187954

ISTD 107.00>89.00 (-) 2.97e4



ALS Group Houston

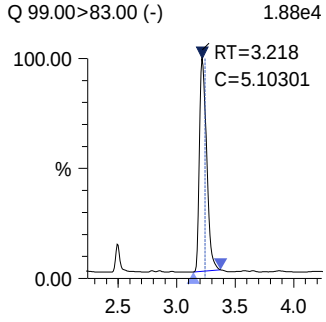
PERCHLORATE5

Date acquired: 10/20/2020 5:42:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_014.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	10/20/2020 5:42:26 PM	79828	5.10301	20201020_014	3.218	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	10/20/2020 5:42:26 PM	166486	1.00000	20201020_014	3.217	25.0000	1.0000	10

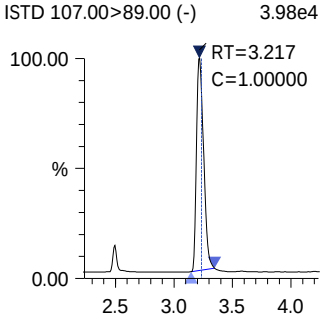
Perchlorate

Conc 5.10301
Area 79828



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 166486



ALS Group Houston

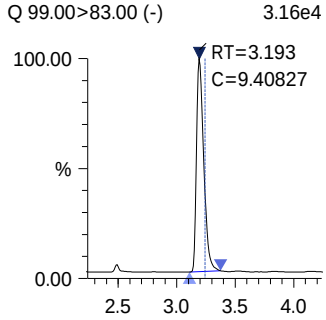
PERCHLORATE6

Date acquired: 10/20/2020 5:50:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_015.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	10/20/2020 5:50:19 PM	136097	9.40827	20201020_015	3.193	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE6	10/20/2020 5:50:19 PM	154693	1.00000	20201020_015	3.190	25.0000	1.0000	4

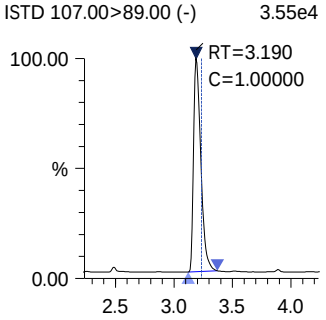
Perchlorate

Conc 9.40827
Area 136097



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 154693



ALS Group Houston

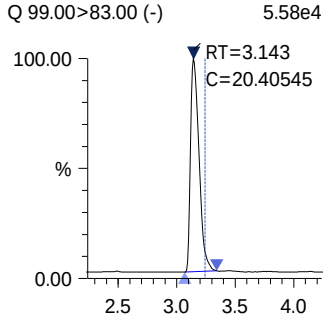
PERCHLORATE7

Date acquired: 10/20/2020 5:58:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/20/2020 5:58:14 PM	286302	20.40545	20201020_016	3.143	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/20/2020 5:58:14 PM	150504	1.00000	20201020_016	3.142	25.0000	1.0000	11

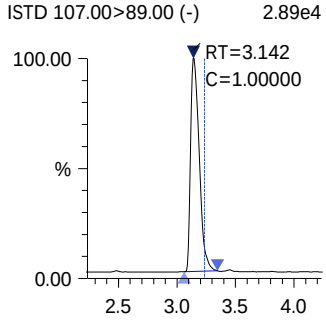
Perchlorate

Conc 20.40545
Area 286302



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 150504



ALS Group Houston

PERCHLORATE8

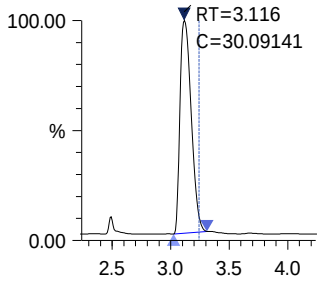
Date acquired: 10/20/2020 6:06:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	10/20/2020 6:06:08 PM	429904	30.09141	20201020_017	3.116	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE8	10/20/2020 6:06:08 PM	153380	1.00000	20201020_017	3.115	25.0000	1.0000	12

Perchlorate

Conc 30.09141
Area 429904

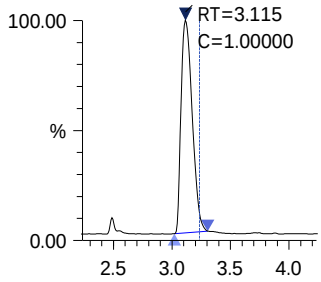
Q 99.00>83.00 (-) 6.42e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 153380

ISTD 107.00>89.00 (-) 2.32e4



ALS Group Houston

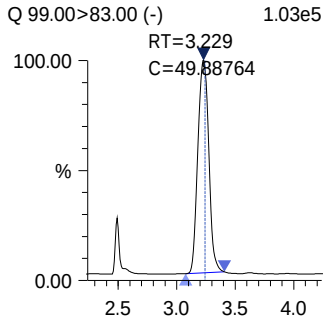
PERCHLORATE9

Date acquired: 10/20/2020 6:14:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	10/20/2020 6:14:02 PM	663959	49.88764	20201020_018	3.229	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE9	10/20/2020 6:14:02 PM	142988	1.00000	20201020_018	3.226	25.0000	1.0000	13

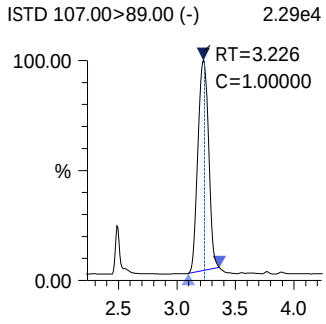
Perchlorate

Conc 49.88764
Area 663959



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 142988



ALS Group Houston

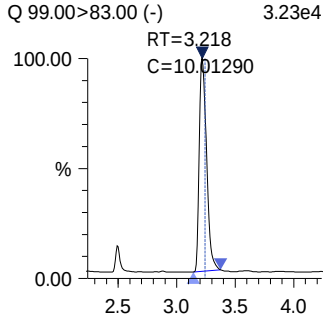
PERCHLORATEICV

Date acquired: 10/20/2020 6:21:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201020\20201020_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATEICV	10/20/2020 6:21:55 PM	138426	10.01290	20201020_019	3.218	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	PERCHLORATEICV	10/20/2020 6:21:55 PM	147890	1.00000	20201020_019	3.215	25.0000	1.0000	14

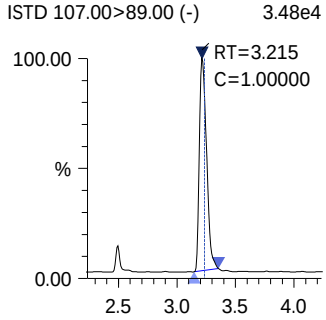
Perchlorate

Conc 10.01290
Area 138426



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 147890



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: EC2000045

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201026_001	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:44
2	null		20201026_002	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:49
3	IB		20201026_003	Perchlorate6850b.lcm	1x	☒		10/26/2020 9:55
4	IB		20201026_004	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:02
5	ICS		20201026_006	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:18
6	PERCHLORATE7		20201026_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 10:26
7	E2001003-002		20201026_008	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:34
8	E2001014-001		20201026_009	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:42
9	E2001015-001		20201026_010	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:50
10	E2001015-002		20201026_011	Perchlorate6850b.lcm	1x	☒		10/26/2020 10:58
11	EQ2000533-01		20201026_012	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:06
12	EQ2000533-02		20201026_013	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:13
13	EQ2000533-03		20201026_014	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:21
14	PERCHLORATE7		20201026_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 11:29
15	LODV		20201026_016	Perchlorate6850b.lcm	1x	☒		10/26/2020 11:44
16	E2001003-001X500		20201026_017	Perchlorate6850b.lcm	500x	☒		10/26/2020 11:52
17	E2001003-003X100		20201026_018	Perchlorate6850b.lcm	100x	☒		10/26/2020 12:00
18	E2001003-004X1000		20201026_019	Perchlorate6850b.lcm	1000x	☒		10/26/2020 12:08
19	EQ2000533-04X10		20201026_020	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:16
20	EQ2000533-05X10		20201026_021	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:24
21	E2001014-002X2		20201026_022	Perchlorate6850b.lcm	2x	☒		10/26/2020 12:31
22	E2001015-003X10		20201026_023	Perchlorate6850b.lcm	10x	☒		10/26/2020 12:39
23	PERCHLORATE7		20201026_024	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 12:47
24	E2001014-002		20201026_025	Perchlorate6850b.lcm	1x	☒		10/26/2020 12:59
25	PERCHLORATE7		20201026_026	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 13:07
26	E2000949-001		20201026_027	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:48
27	E2000949-002		20201026_028	Perchlorate6850b.lcm	1x	☒		10/26/2020 13:56
28	EQ2000537-01		20201026_029	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:04
29	EQ2000537-02		20201026_030	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:12
30	EQ2000537-03		20201026_031	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:20
31	EQ2000537-04		20201026_032	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:28
32	EQ2000537-05		20201026_033	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:35
33	E2001035-001		20201026_034	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:43
34	E2001035-002		20201026_035	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:51
35	E2001035-003		20201026_036	Perchlorate6850b.lcm	1x	☒		10/26/2020 14:59
36	PERCHLORATE7		20201026_037	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 15:07
37	E2001035-004		20201026_038	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:15
38	E2001035-005		20201026_039	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:23
39	E2001035-006		20201026_040	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:31
40	E2001035-007		20201026_041	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:38
41	E2001035-008		20201026_042	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:46
42	E2001035-009		20201026_043	Perchlorate6850b.lcm	1x	☒		10/26/2020 15:54
43	E2001036-001		20201026_044	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:02
44	E2001036-002		20201026_045	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:10
45	E2001036-003		20201026_046	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:18
46	E2001036-004		20201026_047	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:26
47	PERCHLORATE7		20201026_048	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 16:34
48	E2001036-005		20201026_049	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:42
49	E2001036-006		20201026_050	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:49
50	E2001036-007		20201026_051	Perchlorate6850b.lcm	1x	☒		10/26/2020 16:57
51	E2001036-008		20201026_052	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:05
52	PERCHLORATE7		20201026_053	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 17:13
53	EQ2000538-01		20201026_054	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:21
54	EQ2000538-02		20201026_055	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:29
55	EQ2000538-03		20201026_056	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:37
56	E2001028-001		20201026_057	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:45
57	E2001028-002		20201026_058	Perchlorate6850b.lcm	1x	☒		10/26/2020 17:52
58	E2001028-003		20201026_059	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:00
59	E2001028-004		20201026_060	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:08
60	E2001028-005		20201026_061	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:16
61	E2001028-006		20201026_062	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:24

20201026

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
62	E2001028-007		20201026_063	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:32
63	PERCHLORATE7		20201026_064	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 18:40
64	E2001028-008		20201026_065	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:48
65	E2001028-009		20201026_066	Perchlorate6850b.lcm	1x	☒		10/26/2020 18:55
66	E2001028-010		20201026_067	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:03
67	E2001028-011		20201026_068	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:11
68	E2001028-012		20201026_069	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:19
69	E2001028-013		20201026_070	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:27
70	E2001028-014		20201026_071	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:35
71	E2001028-015		20201026_072	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:43
72	E2001034-014		20201026_073	Perchlorate6850b.lcm	1x	☒		10/26/2020 19:51
73	PERCHLORATE7		20201026_074	Perchlorate6850b.lcm	1x	☒	3100807-05	10/26/2020 19:59
74								
75								
76								

20201028

ALS Environmental

ICAL Date: 9/20/2020
Cal. Std. xp: 11/18/2020
ICAL ID: **EC2000045**

1st Review: Grivera
2nd Review: Kneir

Injection Log
LCMS01 -Shimadzu 8050

Mobile Phases **A:** 0.75% Formic Acid/Water 3100807-09 **B:** MeOH 3100802-01

			File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	null		20201028_001	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:12
2	null		20201028_002	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:17
3	IB		20201028_003	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:23
4	IB		20201028_004	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:31
5	LODV		20201028_005	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:38
6	ICS		20201028_006	Perchlorate6850b.lcm	1x	☒		10/28/2020 9:46
7	PERCHLORATE7		20201028_007	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 9:54
8	E2001035-004X2		20201028_008	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:19
9	E2001036-008X2		20201028_009	Perchlorate6850b.lcm	x2	☒		10/28/2020 11:27
10	E2001028-009X100		20201028_010	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:35
11	E2001028-010X50		20201028_011	Perchlorate6850b.lcm	x50	☒		10/28/2020 11:43
12	E2001028-011X100		20201028_012	Perchlorate6850b.lcm	x100	☒		10/28/2020 11:51
13	E2001028-013X100		20201028_014	Perchlorate6850b.lcm	x100	☒		10/28/2020 12:06
14	PERCHLORATE7		20201028_015	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 12:14
15	E2000949-002X2		20201028_017	Perchlorate6850b.lcm	x2	☒		10/28/2020 12:57
16	E2001028-011X200		20201028_018	Perchlorate6850b.lcm	x200	☒		10/28/2020 13:05
17	E2001028-012X100		20201028_019	Perchlorate6850b.lcm	x100	☒		10/28/2020 13:13
18	PERCHLORATE7		20201028_020	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:21
19	E2001035-004		20201028_021	Perchlorate6850b.lcm	1x	☒		10/28/2020 13:29
20	PERCHLORATE7		20201028_022	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 13:37
21	PERCHLORATE7		20201028_023	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 17:06
22	EQ2000548-01		20201028_024	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:14
23	EQ2000548-02		20201028_025	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:22
24	EQ2000548-03		20201028_026	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:30
25	EQ2000548-04		20201028_027	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:38
26	EQ2000548-05		20201028_028	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:46
27	E2001025-001		20201028_029	Perchlorate6850b.lcm	1x	☒		10/28/2020 17:53
28	E2001025-002		20201028_030	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:01
29	E2001035-010		20201028_031	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:09
30	E2001035-011		20201028_032	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:17
31	E2001036-009		20201028_033	Perchlorate6850b.lcm	1x	☒		10/28/2020 18:25
32	PERCHLORATE7		20201028_034	Perchlorate6850b.lcm	1x	☒	3100807-05	10/28/2020 18:33
33								
34								
35								

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_026

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.37	NA	NA	NA	-6.3	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_037

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.4	NA	NA	NA	4.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_048

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201026\20201026_053

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.52	NA	NA	NA	-4.8	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_007

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	NA	NA	NA	-2.0	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_015

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_020

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.76	NA	NA	NA	-2.4	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_022

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701198
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.44	NA	NA	NA	-5.6	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_023

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701275
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.93	NA	NA	NA	-0.7	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20201028\20201028_034

Calibration Date: 10/20/20
Calibration ID: EC2000045
Analysis Lot: 701275
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.49	NA	NA	NA	-5.1	± 15 %	Linear

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/26/20 13:07

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201026\20201026_026
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000550-01
Analysis Lot: 701198
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-01	230,699	3.07
Method Blank	EQ2000537-01	251,836	3.06
Lab Control Sample	EQ2000537-02	252,875	3.06
Duplicate Lab Control Sample	EQ2000537-03	250,027	3.06
16WW56-201021MS	EQ2000537-04	114,572	3.04
16WW56-201021DMS	EQ2000537-05	116,922	3.04
16WW56-201021	E2001035-001	119,976	3.03
16RW11-201021	E2001035-002	85,003	3.05
16RW11-201021-FD	E2001035-003	85,286	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 15:07

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_037	**Lab Code:**	EQ2000550-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-02	253,082	3.06
16WW40-201021	E2001035-005	107,556	3.04
16WW12-201021	E2001035-006	113,227	3.04
16RW04-201021	E2001035-007	204,476	3.04
16RW04-201021-FD	E2001035-008	222,558	3.04
16EW02-201021	E2001035-009	142,354	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 16:34

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_048	**Lab Code:**	EQ2000550-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-03	240,567	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/26/20 17:13

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201026\20201026_053	**Lab Code:**	EQ2000550-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-04	244,513	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 09:54

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_007	**Lab Code:**	EQ2000550-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-05	188,253	3.06

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20 12:14

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201028\20201028_015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000550-06
Analysis Lot: 701198
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-06	198,091	3.04

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 13:21

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_020	**Lab Code:**	EQ2000550-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-07	206,211	3.05
16IW20-201021	E2001035-004	142,110	2.97

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 13:37

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_022	**Lab Code:**	EQ2000550-08
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701198
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000550-08	217,130	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101123

Service Request: E2001035
Date Analyzed: 10/28/20 17:06

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID: I:\LCMS01\DATA\20201028\20201028_023
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000551-01
Analysis Lot: 701275
Signal ID: 1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-01	228,962	2.99
Method Blank	EQ2000548-01	237,056	3.05
Lab Control Sample	EQ2000548-02	212,794	3.05
Duplicate Lab Control Sample	EQ2000548-03	206,721	3.05
16EW06-201021	E2001035-010	161,544	3.05
16EW06-201021-FD	E2001035-011	150,930	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001035
Project:	HS20101123	**Date Analyzed:**	10/28/20 18:33

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20201028\20201028_034	**Lab Code:**	EQ2000551-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	701275
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	169,894	3.17
	Upper Limit ==>	254,841	5.17
	Lower Limit ==>	84,947	1.17
Associated Analyses			
Continuing Calibration Verification	EQ2000551-02	225,202	3.05

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group Houston

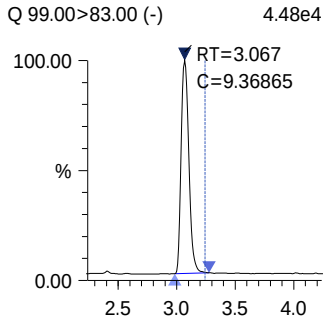
PERCHLORATE7

Date acquired: 10/26/2020 1:07:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_026.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 1:07:32 PM	202116	9.36865	20201026_026	3.067	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 1:07:32 PM	230699	1.00000	20201026_026	3.065	25.0000	1.0000	4

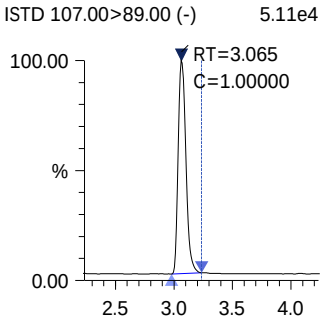
Perchlorate

Conc 9.36865
Area 202116



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 230699



ALS Group Houston

EQ2000537-01

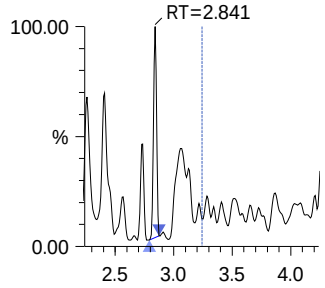
Date acquired: 10/26/2020 2:04:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_029.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-01	10/26/2020 2:04:29 PM	----	----	20201026_029	----	25.0000	1.0000	3
Sodium Perchlorate-18O4_IS	EQ2000537-01	10/26/2020 2:04:29 PM	251836	1.00000	20201026_029	3.057	25.0000	1.0000	3

Perchlorate

Conc ----
Area ----

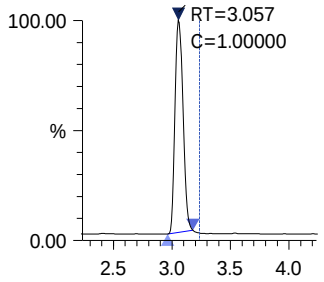
Q 99.00>83.00 (-) 4.04e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 251836

ISTD 107.00>89.00 (-) 5.34e4



ALS Group Houston

EQ2000537-02

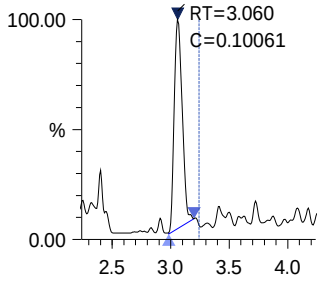
Date acquired: 10/26/2020 2:12:23 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_030.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-02	10/26/2020 2:12:23 PM	3636	0.10061	20201026_030	3.060	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	EQ2000537-02	10/26/2020 2:12:23 PM	252875	1.00000	20201026_030	3.056	25.0000	1.0000	4

Perchlorate

Conc 0.10061
Area 3636

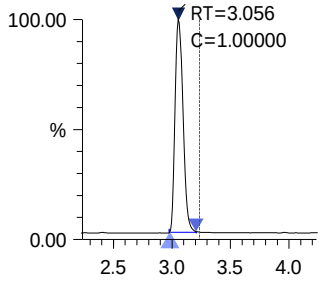
Q 99.00>83.00 (-) 7.92e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 252875

ISTD 107.00>89.00 (-) 5.81e4



ALS Group Houston

EQ2000537-03

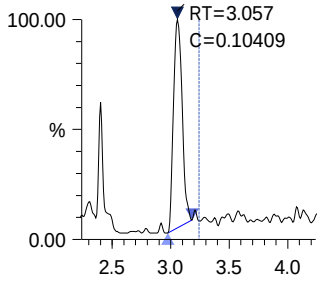
Date acquired: 10/26/2020 2:20:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_031.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-03	10/26/2020 2:20:15 PM	3676	0.10409	20201026_031	3.057	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000537-03	10/26/2020 2:20:15 PM	250027	1.00000	20201026_031	3.057	25.0000	1.0000	5

Perchlorate

Conc 0.10409
Area 3676

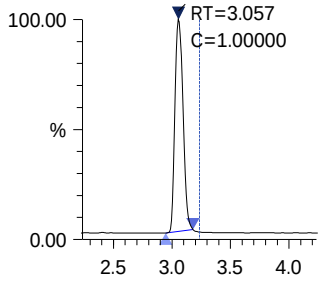
Q 99.00>83.00 (-) 7.41e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 250027

ISTD 107.00>89.00 (-) 5.29e4



ALS Group Houston

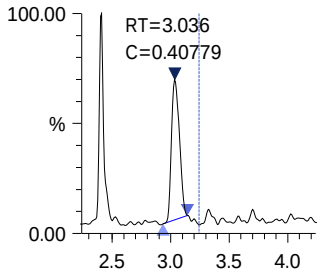
EQ2000537-04

Date acquired: 10/26/2020 2:28:05 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_032.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-04	10/26/2020 2:28:05 PM	4964	0.40779	20201026_032	3.036	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000537-04	10/26/2020 2:28:05 PM	115604	1.00000	20201026_032	3.037	25.0000	1.0000	6

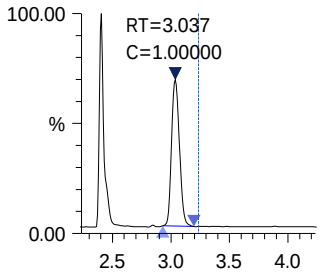
Perchlorate

Conc 0.40779
Area 4964
Q 99.00>83.00 (-) 1.61e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 115604
ISTD 107.00>89.00 (-) 3.60e4



ALS Group Houston

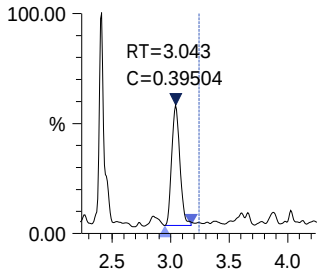
EQ2000537-05

Date acquired: 10/26/2020 2:35:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_033.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000537-05	10/26/2020 2:35:56 PM	4922	0.39504	20201026_033	3.043	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000537-05	10/26/2020 2:35:56 PM	117876	1.00000	20201026_033	3.038	25.0000	1.0000	7

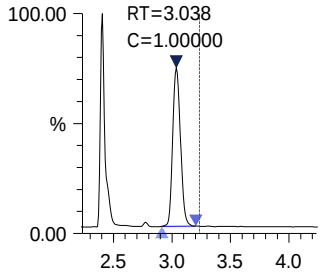
Perchlorate

Conc 0.39504
Area 4922
Q 99.00>83.00 (-) 1.82e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 117876
ISTD 107.00>89.00 (-) 3.44e4



ALS Group Houston

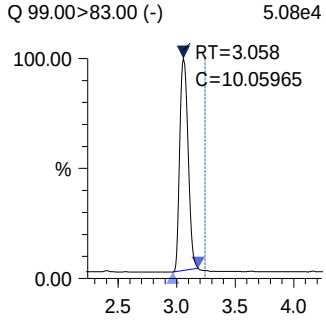
PERCHLORATE7

Date acquired: 10/26/2020 3:07:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201026\20201026_037.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/26/2020 3:07:28 PM	246952	10.05965	20201026_037	3.058	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/26/2020 3:07:28 PM	262617	1.00000	20201026_037	3.057	25.0000	1.0000	4

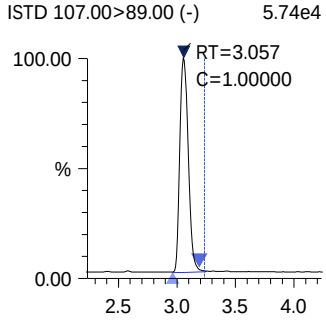
Perchlorate

Conc 10.05965
Area 246952



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 262617



ALS Group Houston

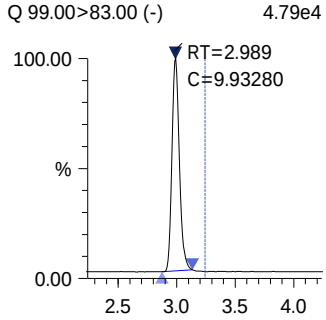
PERCHLORATE7

Date acquired: 10/28/2020 5:06:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_023.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 5:06:37 PM	212604	9.93280	20201028_023	2.989	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 5:06:37 PM	228962	1.00000	20201028_023	2.986	25.0000	1.0000	4

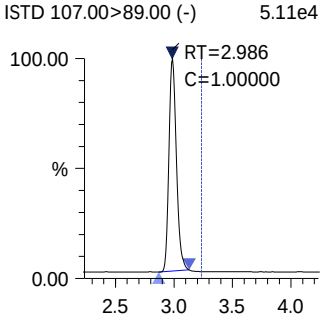
Perchlorate

Conc 9.93280
Area 212604



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 228962



ALS Group Houston

EQ2000548-01

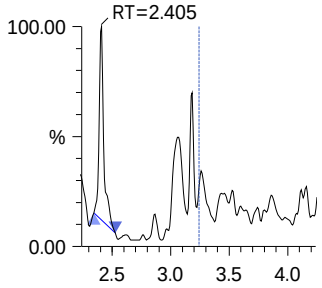
Date acquired: 10/28/2020 5:14:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_024.lcd
Vial: 45 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-01	10/28/2020 5:14:30 PM	----	----	20201028_024	----	25.0000	1.0000	45
Sodium Perchlorate-18O4_IS	EQ2000548-01	10/28/2020 5:14:30 PM	237056	1.00000	20201028_024	3.052	25.0000	1.0000	45

Perchlorate

Conc ----
Area ----

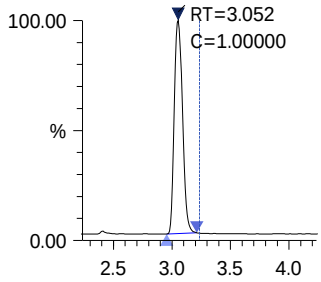
Q 99.00>83.00 (-) 3.39e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 237056

ISTD 107.00>89.00 (-) 4.88e4



ALS Group Houston

EQ2000548-02

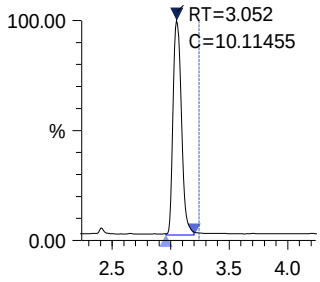
Date acquired: 10/28/2020 5:22:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_025.lcd
Vial: 46 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-02	10/28/2020 5:22:24 PM	201186	10.11455	20201028_025	3.052	25.0000	1.0000	46
Sodium Perchlorate-18O4_IS	EQ2000548-02	10/28/2020 5:22:24 PM	212794	1.00000	20201028_025	3.049	25.0000	1.0000	46

Perchlorate

Conc 10.11455
Area 201186

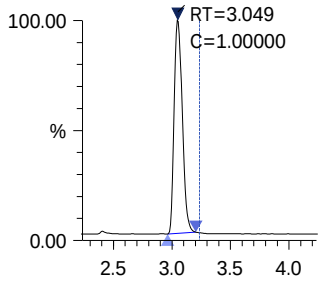
Q 99.00>83.00 (-) 4.04e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 212794

ISTD 107.00>89.00 (-) 4.43e4



ALS Group Houston

EQ2000548-03

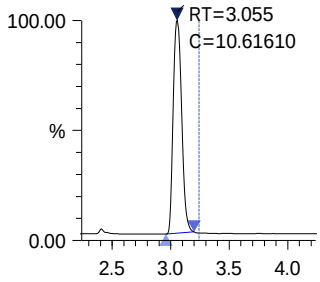
Date acquired: 10/28/2020 5:30:17 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_026.lcd
Vial: 47 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-03	10/28/2020 5:30:17 PM	205086	10.61610	20201028_026	3.055	25.0000	1.0000	47
Sodium Perchlorate-18O4_IS	EQ2000548-03	10/28/2020 5:30:17 PM	206721	1.00000	20201028_026	3.052	25.0000	1.0000	47

Perchlorate

Conc 10.61610
Area 205086

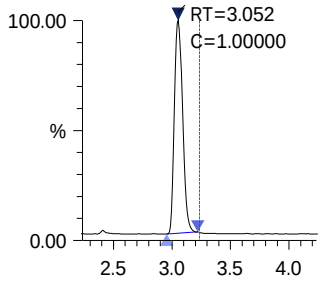
Q 99.00>83.00 (-) 4.15e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 206721

ISTD 107.00>89.00 (-) 4.26e4



ALS Group Houston

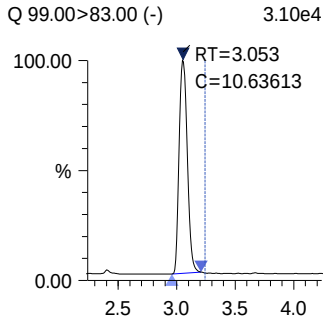
EQ2000548-04

Date acquired: 10/28/2020 5:38:09 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_027.lcd
Vial: 48 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-04	10/28/2020 5:38:09 PM	148600	10.63613	20201028_027	3.053	25.0000	1.0000	48
Sodium Perchlorate-18O4_IS	EQ2000548-04	10/28/2020 5:38:09 PM	149504	1.00000	20201028_027	3.050	25.0000	1.0000	48

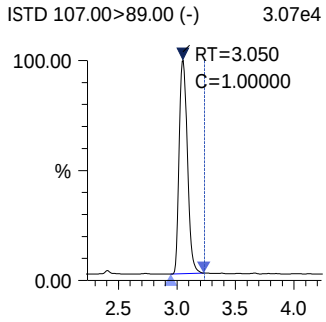
Perchlorate

Conc 10.63613
Area 148600



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 149504



ALS Group Houston

EQ2000548-05

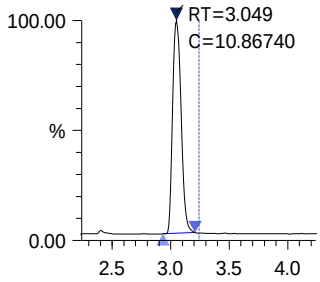
Date acquired: 10/28/2020 5:46:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_028.lcd
Vial: 49 | Inj. Volume: 25.0000uL | Tray: 5

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000548-05	10/28/2020 5:46:02 PM	188229	10.86740	20201028_028	3.049	25.0000	1.0000	49
Sodium Perchlorate-18O4_IS	EQ2000548-05	10/28/2020 5:46:02 PM	185364	1.00000	20201028_028	3.046	25.0000	1.0000	49

Perchlorate

Conc 10.86740
Area 188229

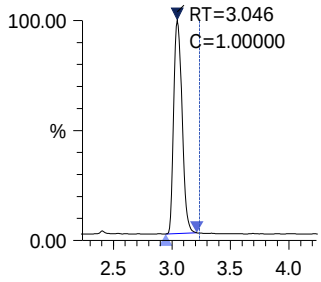
Q 99.00>83.00 (-) 3.78e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 185364

ISTD 107.00>89.00 (-) 3.75e4



ALS Group Houston

PERCHLORATE7

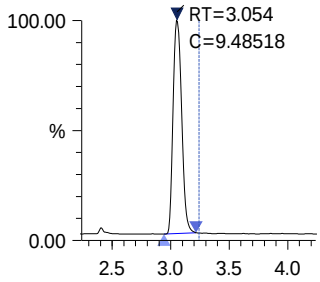
Date acquired: 10/28/2020 6:33:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20201028\20201028_034.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	10/28/2020 6:33:19 PM	199740	9.48518	20201028_034	3.054	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	10/28/2020 6:33:19 PM	225202	1.00000	20201028_034	3.051	25.0000	1.0000	4

Perchlorate

Conc 9.48518
Area 199740

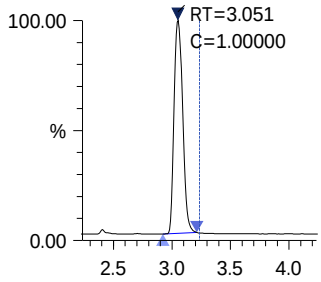
Q 99.00>83.00 (-) 3.98e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 225202

ISTD 107.00>89.00 (-) 4.43e4



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

November 12, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101240**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

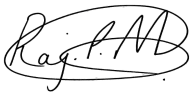
ALS Environmental received 10 sample(s) on Oct 23, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,



Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101240

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101240-01	16WW27-201022	Groundwater		22-Oct-2020 07:45	23-Oct-2020 09:25	☐
HS20101240-02	16WW27-201022-FD	Groundwater		22-Oct-2020 07:45	23-Oct-2020 09:25	☐
HS20101240-03	16WW43-201022	Groundwater		22-Oct-2020 08:30	23-Oct-2020 09:25	☐
HS20101240-04	16WW13-201022	Groundwater		22-Oct-2020 09:15	23-Oct-2020 09:25	☐
HS20101240-05	16WW42-201022	Groundwater		22-Oct-2020 10:00	23-Oct-2020 09:25	☐
HS20101240-06	16RW02-201022	Groundwater		22-Oct-2020 10:45	23-Oct-2020 09:25	☐
HS20101240-07	16RW05-201022	Groundwater		22-Oct-2020 11:30	23-Oct-2020 09:25	☐
HS20101240-08	16EW03-201022	Groundwater		22-Oct-2020 12:25	23-Oct-2020 09:25	☐
HS20101240-09	16EW07-201022	Groundwater		22-Oct-2020 13:10	23-Oct-2020 09:25	☐
HS20101240-10	Trip Blank -201022	Water		22-Oct-2020 00:00	23-Oct-2020 09:25	☐

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101240

Work Order Comments

• The analysis for Perchlorate was subcontracted our ALS Houston TX, High Resolution Lab. Final report attached.

The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R371939

Sample ID: 16EW07-201022 (HS20101240-09)

• Lowest practical dilution for sample HS20101240-09 due to matrix.

Batch ID: R372017

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R372143,R372517

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW27-201022
Collection Date: 22-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 04:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:07
Trichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
Surr: 1,2-Dichloroethane-d4	*83.8*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:07*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW27-201022-FD
Collection Date: 22-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 04:29
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:29
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:29
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
Surr: 1,2-Dichloroethane-d4	*86.0*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: 4-Bromofluorobenzene	*91.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: Toluene-d8	*99.8*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:29*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW43-201022
Collection Date: 22-Oct-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	04-Nov-2020 04:50
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:50
Trichloroethene	**0.94**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: 4-Bromofluorobenzene	*90.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: Dibromofluoromethane	*83.0*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:50*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW13-201022
Collection Date: 22-Oct-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 05:32
1,1-Dichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:32
cis-1,2-Dichloroethene	**620**		**2.0**	**5.0**	**10**	**UG/L**	10	04-Nov-2020 05:53
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 05:32
Trichloroethene	**1,100**		**2.0**	**5.0**	**10**	**UG/L**	10	04-Nov-2020 05:53
Vinyl chloride	**8.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:32
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: 1,2-Dichloroethane-d4	*86.7*			**0**	*81-118*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: 4-Bromofluorobenzene	*89.8*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: Dibromofluoromethane	*82.8*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: Dibromofluoromethane	*83.2*			**0**	*80-119*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: Toluene-d8	*98.5*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*10*	*04-Nov-2020 05:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW42-201022
Collection Date: 22-Oct-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 13:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
cis-1,2-Dichloroethene	**180**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 16:12
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 13:44
Trichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
Surr: 1,2-Dichloroethane-d4	*84.7*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: 1,2-Dichloroethane-d4	*87.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: 4-Bromofluorobenzene	*90.9*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: 4-Bromofluorobenzene	*91.6*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: Dibromofluoromethane	*84.1*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: Toluene-d8	*98.4*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 16:12*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**2.74**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	06-Nov-2020 03:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW02-201022
Collection Date: 22-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 05:11
1,1-Dichloroethene	**0.65**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:11
cis-1,2-Dichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 05:11
Trichloroethene	**6.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:11
Surr: 1,2-Dichloroethane-d4	*87.3*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: 4-Bromofluorobenzene	*90.4*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 05:11*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW05-201022
Collection Date: 22-Oct-2020 11:30

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 13:23
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
cis-1,2-Dichloroethene	**9.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:23
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 13:23
Trichloroethene	**0.89**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:23
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
Surr: 1,2-Dichloroethane-d4	*86.8*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: 4-Bromofluorobenzene	*90.0*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: Dibromofluoromethane	*86.5*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: Toluene-d8	*99.0*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 13:23*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**44.0**		**0.300**	**1.00**	**1.00**	**mg/L**	10	11-Nov-2020 22:36
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW03-201022
Collection Date: 22-Oct-2020 12:25

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	**1.3**		**0.30**	**1.0**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
1,1-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
1,2-Dichloroethane	**3.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
cis-1,2-Dichloroethene	**1,400**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 15:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 14:06
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
Vinyl chloride	**200**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
Surr: 1,2-Dichloroethane-d4	*89.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: 4-Bromofluorobenzene	*92.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 15:51*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW07-201022
Collection Date: 22-Oct-2020 13:10

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	500	U	150	500	500	UG/L	500	04-Nov-2020 02:01
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
cis-1,2-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 02:01
Trichloroethene	**490**	J	**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 02:01
Vinyl chloride	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
Surr: 1,2-Dichloroethane-d4	*85.5*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: 4-Bromofluorobenzene	*93.6*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: Dibromofluoromethane	*85.1*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 02:01*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank -201022
Collection Date: 22-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-10
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 00:58
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 00:58
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: Toluene-d8	*99.9*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 00:58*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020 **DATES REPORT**
WorkOrder: HS20101240

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371600 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101240-01	16WW27-201022	22 Oct 2020 07:45			29 Oct 2020 18:36	1
HS20101240-02	16WW27-201022-FD	22 Oct 2020 07:45			29 Oct 2020 18:36	1
HS20101240-03	16WW43-201022	22 Oct 2020 08:30			29 Oct 2020 18:36	1
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			29 Oct 2020 18:36	1
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			29 Oct 2020 18:36	1
HS20101240-06	16RW02-201022	22 Oct 2020 10:45			29 Oct 2020 18:36	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			29 Oct 2020 18:36	1
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			29 Oct 2020 18:36	1
HS20101240-09	16EW07-201022	22 Oct 2020 13:10			29 Oct 2020 18:36	1
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101240-10	Trip Blank -201022	22 Oct 2020 00:00			04 Nov 2020 00:58	1
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101240-01	16WW27-201022	22 Oct 2020 07:45			04 Nov 2020 04:07	1
HS20101240-02	16WW27-201022-FD	22 Oct 2020 07:45			04 Nov 2020 04:29	1
HS20101240-03	16WW43-201022	22 Oct 2020 08:30			04 Nov 2020 04:50	1
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			04 Nov 2020 05:53	10
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			04 Nov 2020 05:32	1
HS20101240-06	16RW02-201022	22 Oct 2020 10:45			04 Nov 2020 05:11	1
HS20101240-09	16EW07-201022	22 Oct 2020 13:10			04 Nov 2020 02:01	500
Batch ID: R372017 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			04 Nov 2020 16:12	5
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			04 Nov 2020 13:44	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			04 Nov 2020 13:23	1
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			04 Nov 2020 15:51	25
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			04 Nov 2020 14:06	1
Batch ID: R372143 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			06 Nov 2020 03:45	1
Batch ID: R372266 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			09 Nov 2020 20:25	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			09 Nov 2020 20:25	1
Batch ID: R372517 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			11 Nov 2020 22:36	10

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **04-Nov-2020 00:37**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.55*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.35*	*1.0*	*50*	*0*	*90.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.78*	*1.0*	*50*	*0*	*85.6*	*80 - 119*				
Surr: Toluene-d8	*50.97*	*1.0*	*50*	*0*	*102*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 23:55**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.11	1.0	20	0	95.6	80 - 119				
1,1-Dichloroethene	19.02	1.0	20	0	95.1	71 - 131				
1,2-Dichloroethane	18.08	1.0	20	0	90.4	73 - 128				
cis-1,2-Dichloroethene	18.12	1.0	20	0	90.6	78 - 123				
Methylene chloride	17.62	2.0	20	0	88.1	74 - 124				
Trichloroethene	17.96	1.0	20	0	89.8	79 - 123				
Vinyl chloride	17.9	1.0	20	0	89.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.2*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.13*	*1.0*	*50*	*0*	*98.3*	*85 - 114*				
Surr: Dibromofluoromethane	*49.1*	*1.0*	*50*	*0*	*98.2*	*80 - 119*				
Surr: Toluene-d8	*48.72*	*1.0*	*50*	*0*	*97.4*	*89 - 112*				

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20101123-05MS** Units: **UG/L** Analysis Date: **04-Nov-2020 03:04**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815470** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	553.9	25	500	0	111	80 - 119				
1,1-Dichloroethene	599.3	25	500	0	120	71 - 131				
1,2-Dichloroethane	508.3	25	500	0	102	73 - 128				
cis-1,2-Dichloroethene	765.8	25	500	239.8	105	78 - 123				
Methylene chloride	500.5	50	500	0	100	74 - 124				
Trichloroethene	2239	25	500	1724	103	79 - 123				
Vinyl chloride	650.7	25	500	0	130	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1104*	*25*	*1250*	*0*	*88.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1183*	*25*	*1250*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*1124*	*25*	*1250*	*0*	*89.9*	*80 - 119*				
Surr: Toluene-d8	*1251*	*25*	*1250*	*0*	*100*	*89 - 112*				

MSD Sample ID: **HS20101123-05MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 03:25**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815471** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	554.7	25	500	0	111	80 - 119	553.9	0.148	20	
1,1-Dichloroethene	551.9	25	500	0	110	71 - 131	599.3	8.24	20	
1,2-Dichloroethane	565.3	25	500	0	113	73 - 128	508.3	10.6	20	
cis-1,2-Dichloroethene	721.8	25	500	239.8	96.4	78 - 123	765.8	5.91	20	
Methylene chloride	470.7	50	500	0	94.1	74 - 124	500.5	6.15	20	
Trichloroethene	2193	25	500	1724	93.8	79 - 123	2239	2.1	20	
Vinyl chloride	578.2	25	500	0	116	58 - 137	650.7	11.8	20	
Surr: 1,2-Dichloroethane-d4	*1128*	*25*	*1250*	*0*	*90.3*	*81 - 118*	*1104*	*2.17*	*20*	
Surr: 4-Bromofluorobenzene	*1180*	*25*	*1250*	*0*	*94.4*	*85 - 114*	*1183*	*0.206*	*20*	
Surr: Dibromofluoromethane	*1079*	*25*	*1250*	*0*	*86.3*	*80 - 119*	*1124*	*4.11*	*20*	
Surr: Toluene-d8	*1231*	*25*	*1250*	*0*	*98.5*	*89 - 112*	*1251*	*1.65*	*20*	

The following samples were analyzed in this batch:

HS20101240-01	HS20101240-02	HS20101240-03	HS20101240-04
HS20101240-06	HS20101240-09	HS20101240-10	

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372017 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-201104** Units: **UG/L** Analysis Date: **04-Nov-2020 11:59**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817374** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.13*	*1.0*	*50*	*0*	*86.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.57*	*1.0*	*50*	*0*	*95.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.83*	*1.0*	*50*	*0*	*87.7*	*80 - 119*				
Surr: Toluene-d8	*51.54*	*1.0*	*50*	*0*	*103*	*89 - 112*				

LCS Sample ID: **VLCSW-201104** Units: **UG/L** Analysis Date: **04-Nov-2020 11:17**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817373** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.77	1.0	20	0	93.9	80 - 119				
1,1-Dichloroethene	19.59	1.0	20	0	98.0	71 - 131				
1,2-Dichloroethane	17.71	1.0	20	0	88.6	73 - 128				
cis-1,2-Dichloroethene	17.8	1.0	20	0	89.0	78 - 123				
Methylene chloride	17.81	2.0	20	0	89.1	74 - 124				
Trichloroethene	18.05	1.0	20	0	90.3	79 - 123				
Vinyl chloride	18.62	1.0	20	0	93.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.73*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.55*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*49.34*	*1.0*	*50*	*0*	*98.7*	*80 - 119*				
Surr: Toluene-d8	*48.52*	*1.0*	*50*	*0*	*97.0*	*89 - 112*				

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372017 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20101419-01MS** Units: **UG/L** Analysis Date: **04-Nov-2020 15:09**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817383** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	207.3	10	200	0	104	80 - 119				
1,1-Dichloroethene	256.8	10	200	7.216	125	71 - 131				
1,2-Dichloroethane	219.2	10	200	0	110	73 - 128				
cis-1,2-Dichloroethene	490.9	10	200	293.3	98.8	78 - 123				
Methylene chloride	199	20	200	0	99.5	74 - 124				
Trichloroethene	1214	10	200	981.1	116	79 - 123				O
Vinyl chloride	277.1	10	200	33.28	122	58 - 137				
Surr: 1,2-Dichloroethane-d4	*443.7*	*10*	*500*	*0*	*88.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*482*	*10*	*500*	*0*	*96.4*	*85 - 114*				
Surr: Dibromofluoromethane	*448.9*	*10*	*500*	*0*	*89.8*	*80 - 119*				
Surr: Toluene-d8	*482.4*	*10*	*500*	*0*	*96.5*	*89 - 112*				

MSD Sample ID: **HS20101419-01MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 15:30**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817384** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	232.4	10	200	0	116	80 - 119	207.3	11.4	20	
1,1-Dichloroethene	240.5	10	200	7.216	117	71 - 131	256.8	6.54	20	
1,2-Dichloroethane	214	10	200	0	107	73 - 128	219.2	2.36	20	
cis-1,2-Dichloroethene	481.8	10	200	293.3	94.3	78 - 123	490.9	1.87	20	
Methylene chloride	194.4	20	200	0	97.2	74 - 124	199	2.32	20	
Trichloroethene	1188	10	200	981.1	103	79 - 123	1214	2.14	20	O
Vinyl chloride	256.1	10	200	33.28	111	58 - 137	277.1	7.86	20	
Surr: 1,2-Dichloroethane-d4	*428.8*	*10*	*500*	*0*	*85.8*	*81 - 118*	*443.7*	*3.43*	*20*	
Surr: 4-Bromofluorobenzene	*476.3*	*10*	*500*	*0*	*95.3*	*85 - 114*	*482*	*1.2*	*20*	
Surr: Dibromofluoromethane	*438.1*	*10*	*500*	*0*	*87.6*	*80 - 119*	*448.9*	*2.43*	*20*	
Surr: Toluene-d8	*492.8*	*10*	*500*	*0*	*98.6*	*89 - 112*	*482.4*	*2.13*	*20*	

The following samples were analyzed in this batch: HS20101240-05 HS20101240-07 HS20101240-08

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372143 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-110520** Units: **mg/L** Analysis Date: **05-Nov-2020 10:39**
Client ID: Run ID: **ICS-Integrion_372143** SeqNo: **5820234** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-110520** Units: **mg/L** Analysis Date: **05-Nov-2020 10:57**
Client ID: Run ID: **ICS-Integrion_372143** SeqNo: **5820235** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.906	0.100	4	0	97.7	80 - 120				

MS Sample ID: **HS20110194-01MS** Units: **mg/L** Analysis Date: **05-Nov-2020 16:02**
Client ID: Run ID: **ICS-Integrion_372143** SeqNo: **5820239** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	19.4	1.00	20	0	97.0	80 - 120				

MSD Sample ID: **HS20110194-01MSD** Units: **mg/L** Analysis Date: **05-Nov-2020 16:20**
Client ID: Run ID: **ICS-Integrion_372143** SeqNo: **5820240** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	19.42	1.00	20	0	97.1	80 - 120	19.4	0.0928	20	

The following samples were analyzed in this batch: HS20101240-05

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372517 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK-111120** Units: **mg/L** Analysis Date: **11-Nov-2020 18:24**
Client ID: Run ID: **ICS-Integrion_372517** SeqNo: **5829719** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	0.100	0.100								U

LCS Sample ID: **LCS-111120** Units: **mg/L** Analysis Date: **11-Nov-2020 18:42**
Client ID: Run ID: **ICS-Integrion_372517** SeqNo: **5829720** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.8	0.100	4	0	95.0	80 - 120				

MS Sample ID: **HS20101419-01MS** Units: **mg/L** Analysis Date: **12-Nov-2020 00:24**
Client ID: Run ID: **ICS-Integrion_372517** SeqNo: **5829733** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	7.436	0.100	2	5.377	103	80 - 120				

MSD Sample ID: **HS20101419-01MSD** Units: **mg/L** Analysis Date: **12-Nov-2020 00:42**
Client ID: Run ID: **ICS-Integrion_372517** SeqNo: **5829734** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	7.445	0.100	2	5.377	103	80 - 120	7.436	0.121	20	

The following samples were analyzed in this batch: HS20101240-07

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: **HS20101240**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2020	31-Dec-2020
North Dakota	R-193 2020-2021	30-Apr-2021
Texas	T104704231-20-26	30-Apr-2021

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101240

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20101240-01	16WW27-201022	Login	10/23/2020 4:19:24 PM	NDR	Sub
HS20101240-01	16WW27-201022	Login	10/23/2020 4:19:24 PM	NDR	VOA091

ALS Houston, US Date: 12-Nov-20

Sample Receipt Checklist

Work Order ID: HS20101240 **Date/Time Received:** **23-Oct-2020 09:25**

Client Name: CBI-Houston **Received by:** **Pablo Marinez**

Completed By: */S/ Nilesh D. Ranchod* 23-Oct-2020 16:34 **Reviewed by:** */S/ RJ Modashia* 25-Oct-2020 19:48

eSignature Date/Time eSignature Date/Time

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	2.4C U/c	IR25
Cooler(s)/Kit(s):	46420	
Date/Time sample(s) sent to storage:	10/23/2020 14:55	

Water - VOA vials have zero headspace?	Yes ☐	No ☑	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Sample 16RW05-201022 Vials 2 of 2 and 3 of 3 have head space greater than 6mm

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281)530-5656 ATTN: R.J Hodashia

Page 1 of 1

Project: APTIM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
501032

Job:
LHAAP 16 October 2020

Prepared By:
Scott Beesinger

P.O. Number

Aptim Environmental & Infrastucture, Inc.
LHAAP 16 October 2020

HS20101240

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives, etc.)
16WW27-201022	WG	10/22/20/0745		4	X					X					
16WW27-201022-FD	WG	10/22/20/0745		4	X					X					
16WW43-201022	WG	10/22/20/0830		4	X					X					
16WW13-201022	WG	10/22/20/0915		4	X					X					
16WW42-201022	WG	10/22/20/1000		7	X	X			X	X					
16RW02-201022	WG	10/22/20/1045		4	X					X					
16RW05-201022	WG	10/22/20/1130		7	X	X			X	X					
16EW03-201022	WG	10/22/20/1225		4	X					X					

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/22/20	1430	PM	10/23/20	9:25am						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

46420 2.4C IR25

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: R.J Modashia

Page 1 of 1

Project: APTIM LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. 501032
Job: **LHAAP 16 October 2020**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions (bromide, sulfate, nitrate) by SW9056 and Alkalinity by SM2320	Bromide by SW9056	Perchlorate by SW6850	Metals (arsenic, chromium, manganese, nickel, thallium) by SW6020				Remarks (Preservatives etc.)
16 EW07-201022	WG	10/22/20/13:10		4	X					X					
TRIP BLANK-201022	W	10/22/20		2	X										

Analyses

Additional Remarks: Standard TAT on all parameters. Please email results to Susan.Huang@aptim.com and invoices to fedinvoices@aptim.com

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	10/22/20	1430									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

Aptim Environmental & Infrastructure, Inc.
LHAAP 16 October 2020

HS20101240

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

46420

CUST ODY SEAL

Date: 10/22/20 Time: 1430

Name: Scott Beesinger

Company: ALS

Seal Broken By: SMM

Date: 10/23/20

46420

Must Deli A 10:30 1 B03

Time ar 917

46420

ALS

ORIGIN ID:SGRA (903) 930-8193
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PM8202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 29SEP20
ACTWGT: 1.00 LB MAN
CAD: 900130/CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 16 - BO 74064 - RJ

RMA:

FedEx Express

FedEx
TRK# 0221 1891 8880 8696

FRI - 23 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

October 29, 2020 Service Request No:E2001036

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS20101240

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 26, 2020
For your reference, these analyses have been assigned our service request number **E2001036.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2001036
Project:	HS20101240	**Date Received:**	10/26/20
Sample Matrix:	L		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Nine samples were received for analysis at ALS Environmental in Houston on 10/26/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Due to the sample matrix, sample E2001036-009 had to be prepped as a solid (samples viscous).

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000537: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS & DLCS recoveries are within QC limits.

EQ2000548: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in addition to a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

DoD Certification is held for the method/matrix/analytes provided in this report.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2001036
Project: HS20101240

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2001036-001	16WW27-201022	10/22/2020	0745
E2001036-002	16WW27-201022-FD	10/22/2020	0745
E2001036-003	16WW43-201022	10/22/2020	0830
E2001036-004	16WW13-201022	10/22/2020	0915
E2001036-005	16WW42-201022	10/22/2020	1000
E2001036-006	16RW02-201022	10/22/2020	1045
E2001036-007	16RW05-201022	10/22/2020	1130
E2001036-008	16EW03-201022	10/22/2020	1225
E2001036-009	16EW07-201022	10/22/2020	1310

Service Request Summary

Folder #: **E2001036**
Client Name: ALS Environmental - US
Project Name: HS20101240
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/26/20
Internal Due Date: 11/6/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101240
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2001036-001	16WW27-201022	Ground Water	10/22/20 0745	**IV**
E2001036-002	16WW27-201022-FD	Ground Water	10/22/20 0745	**IV**
E2001036-003	16WW43-201022	Ground Water	10/22/20 0830	**IV**
E2001036-004	16WW13-201022	Ground Water	10/22/20 0915	**IV**
E2001036-005	16WW42-201022	Ground Water	10/22/20 1000	**IV**
E2001036-006	16RW02-201022	Ground Water	10/22/20 1045	**IV**
E2001036-007	16RW05-201022	Ground Water	10/22/20 1130	**IV**
E2001036-008	16EW03-201022	Ground Water	10/22/20 1225	**IV**
E2001036-009	16EW07-201022	Misc. Solid	10/22/20 1310	**IV**

Service Request Summary

Folder #: **E2001036**
Client Name: ALS Environmental - US
Project Name: HS20101240
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 10/26/20
Internal Due Date: 11/6/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20101240
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.

Data Qualifiers

Lab Standard

P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arizona Department of Health Services	AZ0793-2020	5/27/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
California Department of Health Services	2919-2020	4/30/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611-2020	6/30/2021
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352-2020	7/31/2021
Louisiana Department of Environmental Quality	03087-2020	6/30/2021
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343-2020	6/30/2021
Michigan Depratment of Environmental Quality	9971-2020	4/30/2021
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Concervation and Natural Resources	TX026932021-1	7/31/2021
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	TX008	6/30/2021
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2020-123	8/31/2021
Pennsylvania Department of Environmental Protection	014	6/30/2021
Tennessee Department of Environment and Concervation	04016-2020	4/30/2021
Texas Commision on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819	11/14/2020

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 15007**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101240
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101240-01**	**16WW27-201022**	**Groundwater**	**22 Oct 2020 07:45**
	SUB_Perch-6850			06 Nov 2020
2.	**HS20101240-02**	**16WW27-201022-FD**	**Groundwater**	**22 Oct 2020 07:45**
	SUB_Perch-6850			06 Nov 2020
3.	**HS20101240-03**	**16WW43-201022**	**Groundwater**	**22 Oct 2020 08:30**
	SUB_Perch-6850			06 Nov 2020
4.	**HS20101240-04**	**16WW13-201022**	**Groundwater**	**22 Oct 2020 09:15**
	SUB_Perch-6850			06 Nov 2020
5.	**HS20101240-05**	**16WW42-201022**	**Groundwater**	**22 Oct 2020 10:00**
	SUB_Perch-6850			06 Nov 2020
6.	**HS20101240-06**	**16RW02-201022**	**Groundwater**	**22 Oct 2020 10:45**
	SUB_Perch-6850			06 Nov 2020
7.	**HS20101240-07**	**16RW05-201022**	**Groundwater**	**22 Oct 2020 11:30**
	SUB_Perch-6850			06 Nov 2020
8.	**HS20101240-08**	**16EW03-201022**	**Groundwater**	**22 Oct 2020 12:25**
	SUB_Perch-6850			06 Nov 2020
9.	**HS20101240-09**	**16EW07-201022**	**Groundwater**	**22 Oct 2020 13:10**

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 15007**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
SUB_Perch-6850			06 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 10/26/20 1020

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist LH

Client/Project ALS-H

Thermometer ID 1231

Date/Time Received: 10/26/20 Initials: LH

Date/Time Logged in: 10/26/20 Initials LH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ⊘ ALS Courier ○ Client

2. Samples received in: ⊘ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ⊘ No

Were they intact? ○ Yes ○ No ⊘ N/A

Were they signed and dated? ○ Yes ○ No ⊘ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ⊘ Baggies ○ Bubble Wrap ○ Gel Packs ⊗ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ⊗ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		10/26/20	1020	LH	3.5	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ⊘ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ⊘ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ⊘ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ⊘ Yes ○ No

10. Did sample labels and tags agree with custody documents? ⊘ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
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F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001035-001	16WW56-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2001035-002	16RW11-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2001035-003	16RW11-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2001035-004	16IW20-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2001035-005	16WW40-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2001035-006	16WW12-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2001035-007	16RW04-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2001035-008	16RW04-201021-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2001035-009	16EW02-201021	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2001036-001	16WW27-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2001036-002	16WW27-201022-FD	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2001036-003	16WW43-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2001036-004	16WW13-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2001036-005	16WW42-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2001036-006	16RW02-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2001036-007	16RW05-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2001036-008	16EW03-201022	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2000537-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000537-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000537-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000537-04	16WW56-201021 MS	.01	6850/ClO4 DOD			Liquid	10mL	
22	EQ2000537-05	16WW56-201021 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000537-02	1.00µL	EQ2000537-03	1.00µL	EQ2000537-04	1.00µL	EQ2000537-05	1.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001035-001	100.00µL	E2001035-002	100.00µL	E2001035-003	100.00µL	E2001035-004	100.00µL	E2001035-005	100.00µL	E2001035-006	100.00µL
E2001035-007	100.00µL	E2001035-008	100.00µL	E2001035-009	100.00µL	E2001036-001	100.00µL	E2001036-002	100.00µL	E2001036-003	100.00µL
E2001036-004	100.00µL	E2001036-005	100.00µL	E2001036-006	100.00µL	E2001036-007	100.00µL	E2001036-008	100.00µL	EQ2000537-01	100.00µL
EQ2000537-02	100.00µL	EQ2000537-03	100.00µL	EQ2000537-04	100.00µL	EQ2000537-05	100.00µL				

Preparation Information Benchsheet

Prep Run#: 368462 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 10/26/20 14:30

Preparation Steps

Step: Preparation
Started: 10/26/20 14:30
Finished: 10/26/20 15:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/27/2020

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Preparation Information Benchsheet

Prep Run#: 368660 **Prep WorkFlow:** Gen CLO4 **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/28/20 14:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2001025-001	2020-BH-1-1	.01	6850/ClO4			Soil	1.006g	
2	E2001025-002	2020-BH-1-7	.01	6850/ClO4			Soil	1.040g	
3	E2001035-010	16EW06-201021	.02	6850/ClO4 DOD			Misc. Solid	1.003g	
4	E2001035-011	16EW06-201021-FD	.02	6850/ClO4 DOD			Misc. Solid	1.066g	
5	E2001036-009	16EW07-201022	.02	6850/ClO4 DOD			Misc. Solid	1.070g	
6	EQ2000548-01	MB		6850/ClO4 DOD			Solid	1.047g	
7	EQ2000548-02	LCS		6850/ClO4 DOD			Solid	0.980g	
8	EQ2000548-03	DLCS		6850/ClO4 DOD			Solid	0.977g	
9	EQ2000548-04	2020-BH-1-1 MS	.01	6850/ClO4			Solid	0.994g	
10	EQ2000548-05	2020-BH-1-1 DMS	.01	6850/ClO4			Solid	0.985g	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 209764 Logbook Ref: Perchlorate Int. Stock1 51820 Expires On: 11/18/2020

EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL EQ2000548-05 100.00µL

Name: Sodium Perchlorate 1 ug/mL (IS) (18-O) as CLO4 Inventory ID 212340 Logbook Ref: Sodium Perchlorate Expires On: 07/13/2022

E2001025-001 100.00µL E2001025-002 100.00µL E2001035-010 100.00µL E2001035-011 100.00µL E2001036-009 100.00µL EQ2000548-01 100.00µL
EQ2000548-01 100.00µL EQ2000548-02 100.00µL EQ2000548-02 100.00µL EQ2000548-03 100.00µL EQ2000548-03 100.00µL EQ2000548-04 100.00µL
EQ2000548-05 100.00µL

Preparation Steps

Step: Extraction
Started: 10/28/20 14:30
Finished: 10/28/20 15:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/29/2020

Preparation Information Benchsheet

Prep Run#: 368660
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: Gen CLO4
Prep Method: Method

Status: Prepped
Prep Date/Time: 10/28/20 14:30

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

Analytical Results

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 0745
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16WW27-201022	**Units:**	µg/L
Lab Code:	E2001036-001	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:02	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 0745
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16WW27-201022-FD	**Units:**	µg/L
Lab Code:	E2001036-002	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:10	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 0830
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16WW43-201022	**Units:**	µg/L
Lab Code:	E2001036-003	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:18	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 0915
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16WW13-201022	**Units:**	µg/L
Lab Code:	E2001036-004	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:26	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 1000
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16WW42-201022	**Units:**	µg/L
Lab Code:	E2001036-005	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:42	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 1045
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16RW02-201022	**Units:**	µg/L
Lab Code:	E2001036-006	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:49	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 1130
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16RW05-201022	**Units:**	µg/L
Lab Code:	E2001036-007	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 16:57	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 1225
Sample Matrix:	Ground Water	**Date Received:**	10/26/20
Sample Name:	16EW03-201022	**Units:**	µg/L
Lab Code:	E2001036-008	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.200	0.100	0.0500	2	10/26/20	10/28/20 11:27	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	10/22/20 1310
Sample Matrix:	Misc. Solid	**Date Received:**	10/26/20
Sample Name:	16EW07-201022	**Units:**	µg/Kg
Lab Code:	E2001036-009	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.935	0.750	0.300	1	10/28/20	10/28/20 18:25	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000537-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:04	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/Kg
Lab Code:	EQ2000548-01	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.955	0.750	0.300	1	10/28/20	10/28/20 17:14	368660	701275	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20101240
Sample Matrix: Ground Water

Service Request: E2001036
Date Analyzed: 10/26/20

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: As Received

Extraction Lot: 368462

	Lab Control Sample EQ2000537-02			Duplicate Lab Control Sample EQ2000537-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.101	0.100	101	0.104	0.100	104	84 - 119	3	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:12	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000537-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	10/26/20	10/26/20 14:20	368462	701198	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Analyzed:**	10/28/20
Sample Matrix:	Misc. Solid		

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/Kg
Prep Method:	Method	**Basis:**	As Received
		Extraction Lot:	368660

	Lab Control Sample EQ2000548-02			Duplicate Lab Control Sample EQ2000548-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	103	102	101	109	102	106	84 - 121	5	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-02	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**103**		1.02	0.765	0.307	1	10/28/20	10/28/20 17:22	368660	701275	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2001036
Project:	HS20101240	**Date Collected:**	NA
Sample Matrix:	Misc. Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/Kg
Lab Code:	EQ2000548-03	**Basis:**	As Received

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**109**		1.02	0.768	0.308	1	10/28/20	10/28/20 17:30	368660	701275	

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November 09, 2020 **Analytical Report for Service Request No:** K2009736

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: ALS Houston DOD TOC / HS20101240

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory October 27, 2020
For your reference, these analyses have been assigned our service request number **K2009736.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: ALS Houston DOD TOC
Sample Matrix: Ground Water

Service Request: K2009736
Date Received: 10/27/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level II requested by the client.

Sample Receipt:

Two ground water samples were received for analysis at ALS Environmental on 10/27/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 11/09/2020

Chain of Custody

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K200°7736

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 15006**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS20101240
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20101240-05**	**16WW42-201022**	**Groundwater**	**22 Oct 2020 10:00**
	TOC: Provide Level II & DOD Level IV/EQuIS APTIM EDD			06 Nov 2020
2.	**HS20101240-07**	**16RW05-201022**	**Groundwater**	**22 Oct 2020 11:30**
	TOC: Provide Level II & DOD Level IV/EQuIS APTIM EDD			06 Nov 2020

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 10/26/2020 1800

Received By: _____ Date/Time: 10/27/20 0930

Cooler ID(s): _____ Temperature(s): _____

PM VL

Cooler Receipt and Preservation Form

Client ALS/Houston Service Request K20 09736

Received: 10/27/20 Opened: 10/27/20 By: [illegible] Unloaded: 10/27/20 By: [illegible]

1. Samples were received via? *USPS* (Y) *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
0.5	—	IR02	15006			1891 8882 0366	

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2009736
Project:	ALS Houston DOD TOC/HS20101240	**Date Collected:**	10/22/20
Sample Matrix:	Ground Water	**Date Received:**	10/27/20
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
16WW42-201022	K2009736-001	**4.31**	0.50	0.20	0.07	1	11/05/20 18:47	
16RW05-201022	K2009736-002	**117**	2.5	1.0	0.4	5	11/05/20 18:47	
Method Blank	K2009736-MB	ND U	0.50	0.20	0.07	1	11/05/20 18:47	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K2009736
Project:	ALS Houston DOD TOC/HS20101240	**Date Analyzed:**	11/05/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	702435

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2009736-LCS	26.3	25.0	105	83-117

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WorkOrder: HS20101240

LHAAP 16 October 2020

Aptim Environmental & Infrastucture, Inc.

Susan Huang
2500 City West Blvd., Suite 1700
Houston TX 77042

01-Dec-2020

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HS20101240 LHAAP 16 October 2020 Final

ALS WO# HS20101240

10450 Stancliff Rd. Suite 210
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November 12, 2020

Susan Huang
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS20101240**

Laboratory Results for: **LHAAP 16 October 2020**

Dear Susan Huang,

ALS Environmental received 10 sample(s) on Oct 23, 2020 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Work Order: HS20101240

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20101240-01	16WW27-201022	Groundwater		22-Oct-2020 07:45	23-Oct-2020 09:25	☐
HS20101240-02	16WW27-201022-FD	Groundwater		22-Oct-2020 07:45	23-Oct-2020 09:25	☐
HS20101240-03	16WW43-201022	Groundwater		22-Oct-2020 08:30	23-Oct-2020 09:25	☐
HS20101240-04	16WW13-201022	Groundwater		22-Oct-2020 09:15	23-Oct-2020 09:25	☐
HS20101240-05	16WW42-201022	Groundwater		22-Oct-2020 10:00	23-Oct-2020 09:25	☐
HS20101240-06	16RW02-201022	Groundwater		22-Oct-2020 10:45	23-Oct-2020 09:25	☐
HS20101240-07	16RW05-201022	Groundwater		22-Oct-2020 11:30	23-Oct-2020 09:25	☐
HS20101240-08	16EW03-201022	Groundwater		22-Oct-2020 12:25	23-Oct-2020 09:25	☐
HS20101240-09	16EW07-201022	Groundwater		22-Oct-2020 13:10	23-Oct-2020 09:25	☐
HS20101240-10	Trip Blank -201022	Water		22-Oct-2020 00:00	23-Oct-2020 09:25	☐

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP 16 October 2020
Work Order: HS20101240

Work Order Comments

- The analysis for Perchlorate was subcontracted our ALS Houston TX, High Resolution Lab. Final report attached.

  The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R371939

Sample ID: 16EW07-201022 (HS20101240-09)

- Lowest practical dilution for sample HS20101240-09 due to matrix.

Batch ID: R372017

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R372143,R372517

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW27-201022
Collection Date: 22-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 04:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:07
Trichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:07
Surr: 1,2-Dichloroethane-d4	*83.8*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:07*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:07*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW27-201022-FD
Collection Date: 22-Oct-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 04:29
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:29
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:29
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:29
Surr: 1,2-Dichloroethane-d4	*86.0*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: 4-Bromofluorobenzene	*91.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:29*
Surr: Toluene-d8	*99.8*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:29*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW43-201022
Collection Date: 22-Oct-2020 08:30

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	04-Nov-2020 04:50
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 04:50
Trichloroethene	**0.94**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 04:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 04:50
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: 4-Bromofluorobenzene	*90.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: Dibromofluoromethane	*83.0*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 04:50*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 04:50*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastructure, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW13-201022
Collection Date: 22-Oct-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 05:32
1,1-Dichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:32
cis-1,2-Dichloroethene	**620**		**2.0**	**5.0**	**10**	**UG/L**	10	04-Nov-2020 05:53
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 05:32
Trichloroethene	**1,100**		**2.0**	**5.0**	**10**	**UG/L**	10	04-Nov-2020 05:53
Vinyl chloride	**8.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:32
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: 1,2-Dichloroethane-d4	*86.7*			**0**	*81-118*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: 4-Bromofluorobenzene	*89.8*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: Dibromofluoromethane	*82.8*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: Dibromofluoromethane	*83.2*			**0**	*80-119*	*%REC*	*10*	*04-Nov-2020 05:53*
Surr: Toluene-d8	*98.5*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 05:32*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*10*	*04-Nov-2020 05:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16WW42-201022
Collection Date: 22-Oct-2020 10:00

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 13:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
cis-1,2-Dichloroethene	**180**		**1.0**	**2.5**	**5.0**	**UG/L**	5	04-Nov-2020 16:12
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 13:44
Trichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:44
Surr: 1,2-Dichloroethane-d4	*84.7*			**0**	*81-118*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: 1,2-Dichloroethane-d4	*87.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: 4-Bromofluorobenzene	*90.9*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: 4-Bromofluorobenzene	*91.6*			**0**	*85-114*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: Dibromofluoromethane	*84.1*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: Dibromofluoromethane	*84.0*			**0**	*80-119*	*%REC*	*5*	*04-Nov-2020 16:12*
Surr: Toluene-d8	*98.4*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 13:44*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*5*	*04-Nov-2020 16:12*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**2.74**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	06-Nov-2020 03:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW02-201022
Collection Date: 22-Oct-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 05:11
1,1-Dichloroethene	**0.65**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:11
cis-1,2-Dichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 05:11
Trichloroethene	**6.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 05:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 05:11
Surr: 1,2-Dichloroethane-d4	*87.3*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: 4-Bromofluorobenzene	*90.4*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 05:11*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 05:11*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16RW05-201022
Collection Date: 22-Oct-2020 11:30

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 13:23
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
cis-1,2-Dichloroethene	**9.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:23
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 13:23
Trichloroethene	**0.89**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 13:23
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 13:23
Surr: 1,2-Dichloroethane-d4	*86.8*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: 4-Bromofluorobenzene	*90.0*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: Dibromofluoromethane	*86.5*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 13:23*
Surr: Toluene-d8	*99.0*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 13:23*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: YP
Bromide	**44.0**		**0.300**	**1.00**	**1.00**	**mg/L**	10	11-Nov-2020 22:36
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Nov-2020 20:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW03-201022
Collection Date: 22-Oct-2020 12:25

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	**1.3**		**0.30**	**1.0**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
1,1-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
1,2-Dichloroethane	**3.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
cis-1,2-Dichloroethene	**1,400**		**5.0**	**12**	**25**	**UG/L**	25	04-Nov-2020 15:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 14:06
Trichloroethene	**130**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
Vinyl chloride	**200**		**0.20**	**0.50**	**1.0**	**UG/L**	1	04-Nov-2020 14:06
Surr: 1,2-Dichloroethane-d4	*89.4*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: 4-Bromofluorobenzene	*91.8*			**0**	*85-114*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: 4-Bromofluorobenzene	*92.5*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*25*	*04-Nov-2020 15:51*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 14:06*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*25*	*04-Nov-2020 15:51*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: 16EW07-201022
Collection Date: 22-Oct-2020 13:10

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	500	U	150	500	500	UG/L	500	04-Nov-2020 02:01
1,1-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
1,2-Dichloroethane	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
cis-1,2-Dichloroethene	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
Methylene chloride	500	U	200	500	1000	UG/L	500	04-Nov-2020 02:01
Trichloroethene	**490**	J	**100**	**250**	**500**	**UG/L**	500	04-Nov-2020 02:01
Vinyl chloride	250	U	100	250	500	UG/L	500	04-Nov-2020 02:01
Surr: 1,2-Dichloroethane-d4	*85.5*			**0**	*81-118*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: 4-Bromofluorobenzene	*93.6*			**0**	*85-114*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: Dibromofluoromethane	*85.1*			**0**	*80-119*	*%REC*	*500*	*04-Nov-2020 02:01*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*500*	*04-Nov-2020 02:01*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Oct-2020 18:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
Sample ID: Trip Blank -201022
Collection Date: 22-Oct-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20101240
Lab ID:HS20101240-10
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	04-Nov-2020 00:58
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	04-Nov-2020 00:58
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	04-Nov-2020 00:58
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*04-Nov-2020 00:58*
Surr: Toluene-d8	*99.9*			**0**	*89-112*	*%REC*	*1*	*04-Nov-2020 00:58*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R371600 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20101240-01	16WW27-201022	22 Oct 2020 07:45			29 Oct 2020 18:36	1
HS20101240-02	16WW27-201022-FD	22 Oct 2020 07:45			29 Oct 2020 18:36	1
HS20101240-03	16WW43-201022	22 Oct 2020 08:30			29 Oct 2020 18:36	1
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			29 Oct 2020 18:36	1
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			29 Oct 2020 18:36	1
HS20101240-06	16RW02-201022	22 Oct 2020 10:45			29 Oct 2020 18:36	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			29 Oct 2020 18:36	1
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			29 Oct 2020 18:36	1
HS20101240-09	16EW07-201022	22 Oct 2020 13:10			29 Oct 2020 18:36	1
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20101240-10	Trip Blank -201022	22 Oct 2020 00:00			04 Nov 2020 00:58	1
Batch ID: R371939 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101240-01	16WW27-201022	22 Oct 2020 07:45			04 Nov 2020 04:07	1
HS20101240-02	16WW27-201022-FD	22 Oct 2020 07:45			04 Nov 2020 04:29	1
HS20101240-03	16WW43-201022	22 Oct 2020 08:30			04 Nov 2020 04:50	1
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			04 Nov 2020 05:53	10
HS20101240-04	16WW13-201022	22 Oct 2020 09:15			04 Nov 2020 05:32	1
HS20101240-06	16RW02-201022	22 Oct 2020 10:45			04 Nov 2020 05:11	1
HS20101240-09	16EW07-201022	22 Oct 2020 13:10			04 Nov 2020 02:01	500
Batch ID: R372017 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			04 Nov 2020 16:12	5
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			04 Nov 2020 13:44	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			04 Nov 2020 13:23	1
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			04 Nov 2020 15:51	25
HS20101240-08	16EW03-201022	22 Oct 2020 12:25			04 Nov 2020 14:06	1
Batch ID: R372143 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			06 Nov 2020 03:45	1
Batch ID: R372266 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS20101240-05	16WW42-201022	22 Oct 2020 10:00			09 Nov 2020 20:25	1
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			09 Nov 2020 20:25	1
Batch ID: R372517 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS20101240-07	16RW05-201022	22 Oct 2020 11:30			11 Nov 2020 22:36	10

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201103** Units: **UG/L** Analysis Date: **04-Nov-2020 00:37**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815463** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.55*	*1.0*	*50*	*0*	*87.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.35*	*1.0*	*50*	*0*	*90.7*	*85 - 114*				
Surr: Dibromofluoromethane	*42.78*	*1.0*	*50*	*0*	*85.6*	*80 - 119*				
Surr: Toluene-d8	*50.97*	*1.0*	*50*	*0*	*102*	*89 - 112*				

LCS Sample ID: **VLCSW-201103** Units: **UG/L** Analysis Date: **03-Nov-2020 23:55**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815462** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	19.11	1.0	20	0	95.6	80 - 119				
1,1-Dichloroethene	19.02	1.0	20	0	95.1	71 - 131				
1,2-Dichloroethane	18.08	1.0	20	0	90.4	73 - 128				
cis-1,2-Dichloroethene	18.12	1.0	20	0	90.6	78 - 123				
Methylene chloride	17.62	2.0	20	0	88.1	74 - 124				
Trichloroethene	17.96	1.0	20	0	89.8	79 - 123				
Vinyl chloride	17.9	1.0	20	0	89.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.2*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.13*	*1.0*	*50*	*0*	*98.3*	*85 - 114*				
Surr: Dibromofluoromethane	*49.1*	*1.0*	*50*	*0*	*98.2*	*80 - 119*				
Surr: Toluene-d8	*48.72*	*1.0*	*50*	*0*	*97.4*	*89 - 112*				

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R371939 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101123-05MS** Units: **UG/L** Analysis Date: **04-Nov-2020 03:04**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815470** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	553.9	25	500	0	111	80 - 119				
1,1-Dichloroethene	599.3	25	500	0	120	71 - 131				
1,2-Dichloroethane	508.3	25	500	0	102	73 - 128				
cis-1,2-Dichloroethene	765.8	25	500	239.8	105	78 - 123				
Methylene chloride	500.5	50	500	0	100	74 - 124				
Trichloroethene	2239	25	500	1724	103	79 - 123				
Vinyl chloride	650.7	25	500	0	130	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1104*	*25*	*1250*	*0*	*88.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1183*	*25*	*1250*	*0*	*94.6*	*85 - 114*				
Surr: Dibromofluoromethane	*1124*	*25*	*1250*	*0*	*89.9*	*80 - 119*				
Surr: Toluene-d8	*1251*	*25*	*1250*	*0*	*100*	*89 - 112*				

MSD Sample ID: **HS20101123-05MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 03:25**
Client ID: Run ID: **VOA6_371939** SeqNo: **5815471** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	554.7	25	500	0	111	80 - 119	553.9	0.148	20	
1,1-Dichloroethene	551.9	25	500	0	110	71 - 131	599.3	8.24	20	
1,2-Dichloroethane	565.3	25	500	0	113	73 - 128	508.3	10.6	20	
cis-1,2-Dichloroethene	721.8	25	500	239.8	96.4	78 - 123	765.8	5.91	20	
Methylene chloride	470.7	50	500	0	94.1	74 - 124	500.5	6.15	20	
Trichloroethene	2193	25	500	1724	93.8	79 - 123	2239	2.1	20	
Vinyl chloride	578.2	25	500	0	116	58 - 137	650.7	11.8	20	
Surr: 1,2-Dichloroethane-d4	*1128*	*25*	*1250*	*0*	*90.3*	*81 - 118*	*1104*	*2.17*	*20*	
Surr: 4-Bromofluorobenzene	*1180*	*25*	*1250*	*0*	*94.4*	*85 - 114*	*1183*	*0.206*	*20*	
Surr: Dibromofluoromethane	*1079*	*25*	*1250*	*0*	*86.3*	*80 - 119*	*1124*	*4.11*	*20*	
Surr: Toluene-d8	*1231*	*25*	*1250*	*0*	*98.5*	*89 - 112*	*1251*	*1.65*	*20*	

The following samples were analyzed in this batch: HS20101240-01 HS20101240-02 HS20101240-03 HS20101240-04 HS20101240-06 HS20101240-09 HS20101240-10

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372017 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-201104** Units: **UG/L** Analysis Date: **04-Nov-2020 11:59**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817374** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Methylene chloride	1.0	2.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.13*	*1.0*	*50*	*0*	*86.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.57*	*1.0*	*50*	*0*	*95.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.83*	*1.0*	*50*	*0*	*87.7*	*80 - 119*				
Surr: Toluene-d8	*51.54*	*1.0*	*50*	*0*	*103*	*89 - 112*				

LCS Sample ID: **VLCSW-201104** Units: **UG/L** Analysis Date: **04-Nov-2020 11:17**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817373** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	18.77	1.0	20	0	93.9	80 - 119				
1,1-Dichloroethene	19.59	1.0	20	0	98.0	71 - 131				
1,2-Dichloroethane	17.71	1.0	20	0	88.6	73 - 128				
cis-1,2-Dichloroethene	17.8	1.0	20	0	89.0	78 - 123				
Methylene chloride	17.81	2.0	20	0	89.1	74 - 124				
Trichloroethene	18.05	1.0	20	0	90.3	79 - 123				
Vinyl chloride	18.62	1.0	20	0	93.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.73*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.55*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*49.34*	*1.0*	*50*	*0*	*98.7*	*80 - 119*				
Surr: Toluene-d8	*48.52*	*1.0*	*50*	*0*	*97.0*	*89 - 112*				

ALS Houston, US Date: 12-Nov-20

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP 16 October 2020
WorkOrder: HS20101240

QC BATCH REPORT

Batch ID: R372017 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20101419-01MS** Units: **UG/L** Analysis Date: **04-Nov-2020 15:09**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817383** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	207.3	10	200	0	104	80 - 119				
1,1-Dichloroethene	256.8	10	200	7.216	125	71 - 131				
1,2-Dichloroethane	219.2	10	200	0	110	73 - 128				
cis-1,2-Dichloroethene	490.9	10	200	293.3	98.8	78 - 123				
Methylene chloride	199	20	200	0	99.5	74 - 124				
Trichloroethene	1214	10	200	981.1	116	79 - 123				O
Vinyl chloride	277.1	10	200	33.28	122	58 - 137				
Surr: 1,2-Dichloroethane-d4	*443.7*	*10*	*500*	*0*	*88.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*482*	*10*	*500*	*0*	*96.4*	*85 - 114*				
Surr: Dibromofluoromethane	*448.9*	*10*	*500*	*0*	*89.8*	*80 - 119*				
Surr: Toluene-d8	*482.4*	*10*	*500*	*0*	*96.5*	*89 - 112*				

MSD Sample ID: **HS20101419-01MSD** Units: **UG/L** Analysis Date: **04-Nov-2020 15:30**
Client ID: Run ID: **VOA6_372017** SeqNo: **5817384** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,2-Trichloroethane	232.4	10	200	0	116	80 - 119	207.3	11.4	20	
1,1-Dichloroethene	240.5	10	200	7.216	117	71 - 131	256.8	6.54	20	
1,2-Dichloroethane	214	10	200	0	107	73 - 128	219.2	2.36	20	
cis-1,2-Dichloroethene	481.8	10	200	293.3	94.3	78 - 123	490.9	1.87	20	
Methylene chloride	194.4	20	200	0	97.2	74 - 124	199	2.32	20	
Trichloroethene	1188	10	200	981.1	103	79 - 123	1214	2.14	20	O
Vinyl chloride	256.1	10	200	33.28	111	58 - 137	277.1	7.86	20	
Surr: 1,2-Dichloroethane-d4	*428.8*	*10*	*500*	*0*	*85.8*	*81 - 118*	*443.7*	*3.43*	*20*	
Surr: 4-Bromofluorobenzene	*476.3*	*10*	*500*	*0*	*95.3*	*85 - 114*	*482*	*1.2*	*20*	
Surr: Dibromofluoromethane	*438.1*	*10*	*500*	*0*	*87.6*	*80 - 119*	*448.9*	*2.43*	*20*	
Surr: Toluene-d8	*492.8*	*10*	*500*	*0*	*98.6*	*89 - 112*	*482.4*	*2.13*	*20*	

The following samples were analyzed in this batch: HS20101240-05 HS20101240-07 HS20101240-08