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QUARTERLY EVALUATION REPORT
3RD QUARTER (JULY – SEPTEMBER) 2022
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

January 2023

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ACRONYMS AND ABBREVIATIONS

<	Less than
≤	Less than or equal to
%	percent
(§)	Section
AECOM	AECOM Technical Services, Inc.
AIX	Sample collected after the first IX vessel
AMCV(s)	Air Monitoring Comparison Value(s)
amsl	Above mean sea level
Ark-La-Tex	Ark-La-Tex Electric
bgs	Below ground surface
Bhate	Bhate Environmental Associates, Inc.
BIX	Sample collected before the first IX vessel
BLOC	Bloc Design Build, LLC
COC	Chemical of Concern
DCA	Dichloroethane
DCE	Dichloroethene
Envirogen	Envirogen Technologies
ESD	Explanation of Significant Difference
ESL(s)	Effects Screening Level(s)
FBR	Fluidized bed reactor
ft	Feet or foot
GAC	Granular activated carbon
gpd	Gallons per day
gph	Gallons per hour
gpm	Gallons per minute
GWTP	Groundwater Treatment Plant
HCl	Hydrochloric acid
HDPE	High density polyethylene
ICT(s)	Interception-collection trench(es)
IX	Ion exchange
J	Estimated concentration

lbs/hr	Pounds per hour
LHAAP	Longhorn Army Ammunition Plant
MC	Methylene chloride
MCL(s)	Maximum Contaminant Level(s)
µg/L	Micrograms per liter
$Mg(OH)_2$	Magnesium hydroxide
mV	Millivolts
NA	Not applicable
NaOH	Sodium hydroxide
NM	Not measured
No.	Number
ORP	Oxidation-reduction potential
Palmetto	Palmetto Services
PCE	Tetrachloroethene
PCL	Protective Concentration Level
pH	Potential of Hydrogen
PID	Photoionization detector
PLC	Programmable Logic Controller
psi	Pounds per square inch
PVC	Polyvinyl chloride
ROD	Record of Decision
S.U.	Standard Unit
SWEPCO	Southwestern Electric Power Company
TAC	Texas Administrative Code
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
tpy	Tons per year
USEPA	United States Environmental Protection Agency
VC	Vinyl chloride
VOC(s)	Volatile Organic Compound(s)

EXECUTIVE SUMMARY

The operation of the Groundwater Treatment Plant (GWTP) is part of the Interim Remedial Action at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24. A historical pilot test for nearby landfill LHAAP-16 resulted in the installation of eight extraction wells which also contributed groundwater to the GWTP, but ceased after implementation of the final remedy in September 2019. The only groundwater treated and discussed within this report is from LHAAP-18/24.

The groundwater remediation processing for Burning Ground No. 3 at LHAAP includes the following operable systems:

- Equalization tank (water storage) pretreatment system (metals removal);
- Air stripper system;
- Sludge treatment system (thickening, devolatilization, and belt filter press);
- Perchlorate treatment system (fluidized bed reactor [FBR] and ion exchange [IX] vessels);
- Various pumps, meters, piping, and valves tying the treatment systems together; and
- Programmable Logic Controller (PLC) that communicates the status of the operable systems, including the extraction wells, to a central computer that can then notify the operators of shut-downs and similar issues remotely.

Contaminated water from the extraction wells and interception-collection trenches (ICTs) is pumped into the GWTP and stored in the equalization storage tank. The contaminated water is then pumped to the pretreatment system for precipitation of metals. The sludge from the pretreatment system is delivered to the sludge treatment system to be thickened, air stripped of volatile organic compounds (VOCs), and filter pressed for disposal in a landfill. The water from the pretreatment system is delivered to the air stripper system for air stripping of VOCs. Water from the air stripper is stored in the effluent storage tank for further treatment by the perchlorate system, which consists of a FBR and IX vessels.

To provide the integration necessary for proper water process management, a stand-alone central PLC and operator console is used to control the operating systems of the GWTP. The belt filter press operates independently with a polymer pump and sludge feed pump interfaced with the central PLC.

The pretreatment system and air stripper system are equipped with instrument junction boxes and motor starter control panels. The control panels contain a transformer, run indication lights, motor starters, hand or automatic switches, and relays to interface with the central PLC. The control panels have monitors and/or logic to monitor the operating parameters and determine when abnormal conditions occur.

Interface relays will indicate to the central PLC that there is a problem within the systems. The central PLC will provide the logic for the proper action required for that specific set of circumstances.

Groundwater extraction, treatment, discharge, and monitoring activities consist of:

- Continuous extraction of groundwater from multiple ICTs and extraction wells at LHAAP-18/24;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou or to a holding pond (INF Pond), or the treated water may be released as irrigation water on LHAAP-18/24.

The location of the extraction wells and ICTs are shown on **Figure A-1** in **Appendix A**. The process flow diagram of the GWTP is shown on **Figure A-2** in **Appendix A**. **Figure ES-1** shows the monthly total volume of groundwater that was extracted from the ICT and extraction wells at LHAAP-18/24 between January 2014 and September 2022 and at LHAAP-16 between January 2014 and September 2019. Historical details regarding the operation of the GWTP, including downtime and resolutions are discussed in Section 1.1.1 of this Quarterly Evaluation Report.

During the 3rd Quarter 2022 (July – September) the adjacent site, LHAAP-17 groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022.

To address a potential blockage identified during the 2nd Quarter 2022 (Bhate, September 2022), the GWTP was brought offline and the metals pretreatment process tanks TK-200A, TK-200B, and TK-200C were drained on 12 September 2022. While each tank had sediment buildup, no blockage was found inside the metals pretreatment tanks. The blockage is believed to be in the overhead 10-inch steel piping between tanks TK-200B and TK-200C. However, to safely access the overhead piping, which is elevated approximately 15 feet in the air, scaffolding is necessary. Arrangements to procure scaffolding have been made to address the blockage during the 4th Quarter 2022. In the interim, the sediment was removed from the metals pretreatment tanks, and the GWTP was brought back online on 13 September 2022.

As shown on **Figure ES-1**, the total extracted groundwater volume from LHAAP-18/24 during the 3rd Quarter of 2022 was 604,955 gallons. The extracted groundwater volume was recorded on a monthly basis as the sum of the difference between the flow meter totalizer reading at each ICT between the beginning and end of each month. Extraction quantities in LHAAP-18/24 were 256,431 gallons in July 2022; 217,883gallons in August 2022; and 130,641 gallons in September 2022.

The discharge flow rate from the GWTP was estimated as 153.1 gallons per minute (gpm) during the 3rd Quarter of 2022. As shown in **Table ES-1**, approximately 117,427 gallons of groundwater was treated and discharged from the GWTP to the Harrison Bayou. Approximately 465,779

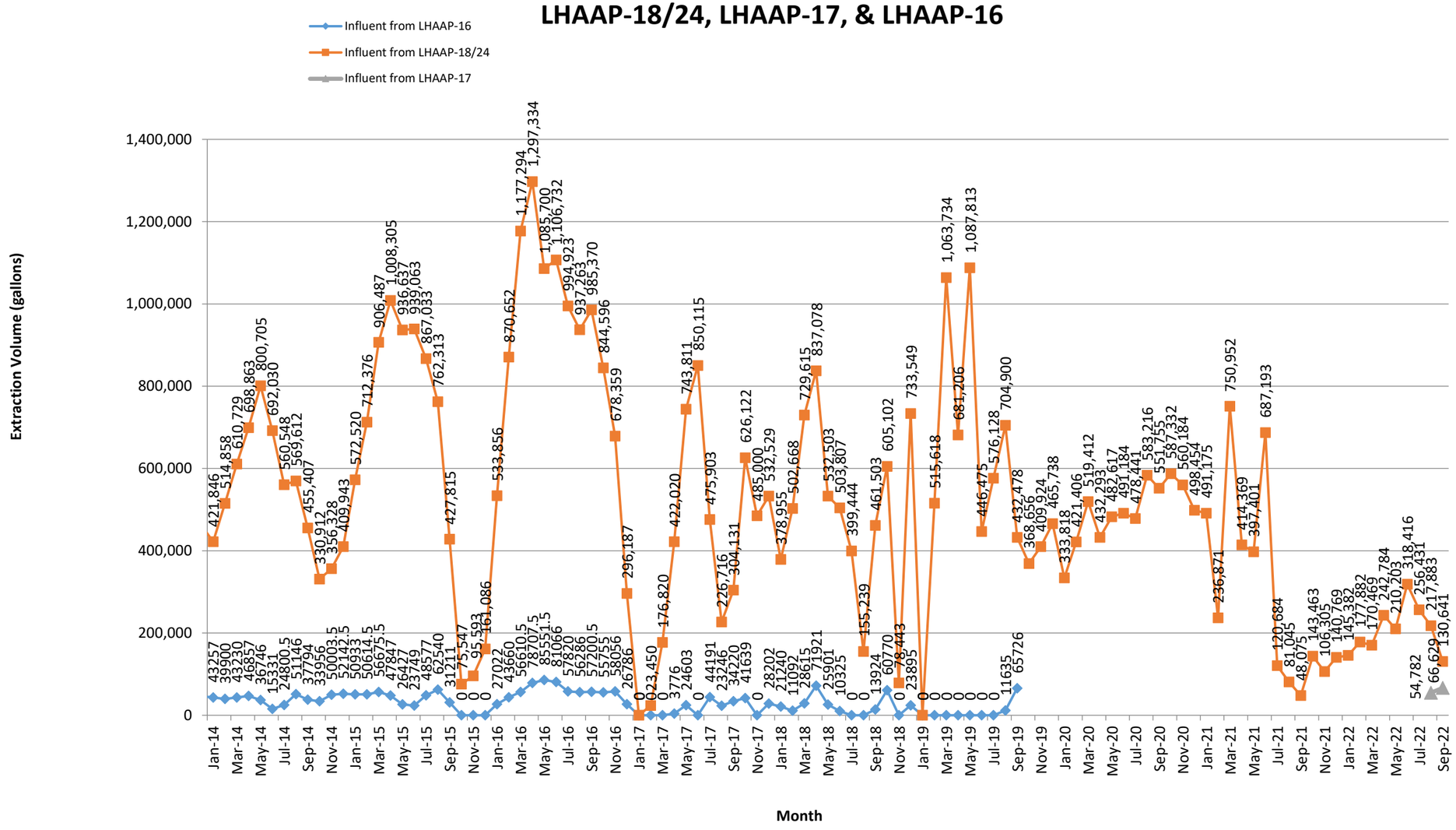
gallons of treated groundwater from the GWTP was discharged to the INF Pond. No treated groundwater from the GWTP was returned to LHAAP-18/24 via the sprinkler system. **Table ES-1** also presents the INF Pond staff gauge readings by date, which is used to determine the freeboard available in the pond.

A quarterly GWTP influent sample was collected for perchlorate analysis on 24 August 2022 with a concentration of 12,700 micrograms per liter (µg/L). Monthly GWTP influent samples were collected for perchlorate analysis on 12 July 2022, 9 August 2022, and 7 September 2022. The perchlorate levels were measured at 8,330 µg/L on 12 July 2022, 14,700 µg/L on 9 August 2022, and 22,900 µg/L on 7 September 2022. Considering the quarterly and monthly influent perchlorate results, the average perchlorate concentration in the GWTP influent during the quarter was 14,657.5 µg/L. Grab perchlorate samples from the GWTP effluent were collected weekly after the first IX vessel to confirm perchlorate treatment prior to discharge to the Harrison Bayou. None of the perchlorate concentrations in any effluent samples discharged to the INF Pond exceeded the Protective Concentration Level (PCL) (17 µg/L) during the 3rd Quarter 2022. Similarly none of the perchlorate concentration in any effluent samples discharged to Harrison Bayou exceeded the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L). Although not a requirement, prior to discharge to the Harrison Bayou, treated groundwater was also processed through the IX vessels to ensure adequate perchlorate treatment.

The treated water quantities each month since June 2012 and discharged into the Harrison Bayou are shown on **Figure ES-2**.

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Figure ES-1. Groundwater Recovery from January 2014 through September 2022 LHAAP-18/24, LHAAP-17, & LHAAP-16



Note: Starting in September 2019, no groundwater was extracted subsequent to the final remedy of injections being implemented at LHAAP-16.

Figure ES-2. Treated Groundwater Discharged Monthly from June 2012 through September 2022

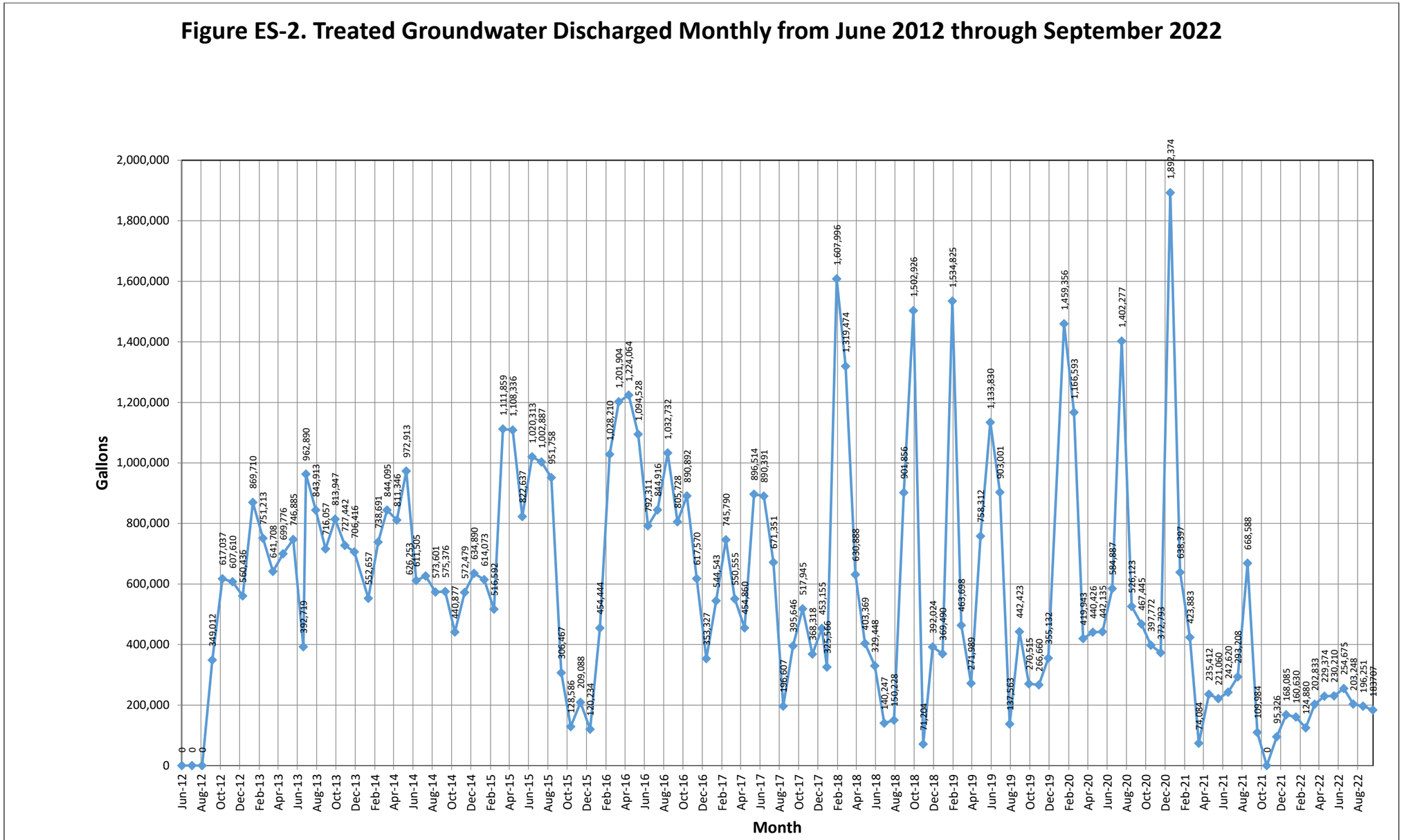


Table ES-1. Discharge Information to Harrison Bayou during 3rd Quarter 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
07/01/2022	NA	NA	0	0	0	0	3.18
07/02/2022	NA	NA	0	0	0	0	3.21
07/03/2022	NA	NA	0	0	0	0	3.25
07/04/2022	NA	NA	0	0	0	0	3.28
07/05/2022	NA	NA	0	0	40,071	0	3.31
07/06/2022	NA	NA	0	0	9,342	0	3.36
07/07/2022	NA	NA	0	0	13,612	0	3.40
07/08/2022	NA	NA	0	0	1,861	0	3.39
07/09/2022	NA	NA	0	0	0	0	3.43
07/10/2022	NA	NA	0	0	0	0	3.47
07/11/2022	NA	NA	0	0	33,472	0	3.51
07/12/2022	NA	NA	0	0	7,237	0	3.54
07/13/2022	NA	NA	0	0	6,215	0	3.57
07/14/2022	NA	NA	0	0	2,844	0	3.58
07/15/2022	NA	NA	0	0	2,379	0	3.60
07/16/2022	NA	NA	0	0	0	0	3.65
07/17/2022	NA	NA	0	0	0	0	3.69
07/18/2022	NA	NA	0	0	31,459	0	3.74
07/19/2022	NA	NA	0	0	6,145	0	3.77
07/20/2022	NA	NA	0	0	5,152	0	3.80
07/21/2022	NA	NA	0	0	4,129	0	3.83
07/22/2022	NA	NA	0	0	0	0	3.86
07/23/2022	NA	NA	0	0	0	0	3.89

Table ES-1. Discharge Information to Harrison Bayou during 3rd Quarter 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
07/24/2022	NA	NA	0	0	0	0	3.92
07/25/2022	NA	NA	0	0	20,728	0	3.95
07/26/2022	NA	NA	0	0	3,841	0	3.97
07/27/2022	NA	NA	0	0	4,462	0	4.00
07/28/2022	NA	NA	0	0	2,983	0	4.02
07/29/2022	NA	NA	0	0	7,316	0	4.05
07/30/2022	NA	NA	0	0	0	0	0.00
07/31/2022	NA	NA	0	0	0	0	0.00
08/01/2022	NA	NA	0	0	18,093	0	4.14
08/02/2022	NA	NA	0	0	2,106	0	4.15
08/03/2022	NA	NA	0	0	9,207	0	4.18
08/04/2022	NA	NA	0	0	4,071	0	4.20
08/05/2022	NA	NA	0	0	2,460	0	4.22
08/06/2022	NA	NA	0	0	0	0	4.24
08/07/2022	NA	NA	0	0	0	0	4.28
08/08/2022	NA	NA	0	0	25,067	0	4.31
08/09/2022	NA	NA	0	0	8,800	0	4.40
08/10/2022	NA	NA	0	0	4,327	0	4.58
08/11/2022	NA	NA	0	0	2,319	0	4.50
08/12/2022	NA	NA	0	0	1,104	0	4.51
08/13/2022	NA	NA	0	0	0	0	4.54
08/14/2022	NA	NA	0	0	0	0	4.57
08/15/2022	NA	NA	0	0	25,307	0	4.61
08/16/2022	NA	NA	0	0	7,590	0	4.64
08/17/2022	NA	NA	0	0	4,978	0	4.66

Table ES-1. Discharge Information to Harrison Bayou during 3rd Quarter 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
08/18/2022	NA	NA	0	0	3,969	0	4.68
08/19/2022	NA	NA	0	0	1,413	0	4.71
08/20/2022	NA	NA	0	0	0	0	4.74
08/21/2022	NA	NA	0	0	0	0	4.77
08/22/2022	NA	NA	0	0	28,498	0	5.23
08/23/2022	NA	NA	0	0	651	0	5.51
08/24/2022	NA	NA	0	0	7,052	0	5.55
08/25/2022	NA	NA	0	0	5,124	0	5.58
08/26/2022	1,437	299	612	0	0	612	5.58
08/27/2022	1,289	268	0	0	0	0	5.57
08/28/2022	1,128	234	0	0	0	0	5.57
08/29/2022	1,009	210	22,696	0	0	22,696	5.56
08/30/2022	780	162	1,215	0	0	1,215	5.55
08/31/2022	653	136	9,592	0	0	9,592	5.54
09/01/2022	497	103	8,187	0	0	8,187	5.53
09/02/2022	381	79	0	0	0	0	5.52
09/03/2022	869	180	0	0	0	0	5.55
09/04/2022	726	151	0	0	0	0	5.54
09/05/2022	619	128	0	0	0	0	5.52
09/06/2022	534	111	28,950	0	0	28,950	5.53
09/07/2022	470	98	9,831	0	0	9,831	5.52
09/08/2022	411	85	8,490	0	0	8,490	5.50
09/09/2022	354	73	1,087	0	0	1,087	5.49
09/10/2022	275	57	0	0	0	0	5.47
09/11/2022	189	39	0	0	0	0	5.45

Table ES-1. Discharge Information to Harrison Bayou during 3rd Quarter 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
09/12/2022	136	28	26,767	0	0	26,767	5.43
09/13/2022	NA	NA	0	0	3,128	0	5.43
09/14/2022	NA	NA	0	0	12,889	0	5.45
09/15/2022	NA	NA	0	0	7,882	0	5.47
09/16/2022	NA	NA	0	0	0	0	5.48
09/17/2022	NA	NA	0	0	0	0	5.49
09/18/2022	NA	NA	0	0	0	0	5.50
09/19/2022	NA	NA	0	0	10,001	0	5.51
09/20/2022	NA	NA	0	0	1,205	0	5.52
09/21/2022	NA	NA	0	0	9,785	0	5.55
09/22/2022	NA	NA	0	0	6,501	0	5.57
09/23/2022	NA	NA	0	0	0	0	5.56
09/24/2022	NA	NA	0	0	0	0	5.59
09/25/2022	NA	NA	0	0	0	0	5.62
09/26/2022	NA	NA	0	0	28,685	0	5.65
09/27/2022	NA	NA	0	0	2,299	0	5.66
09/28/2022	NA	NA	0	0	10,282	0	5.69
09/29/2022	NA	NA	0	0	6,149	0	5.71
09/30/2022	NA	NA	0	0	1,589	0	5.72
TOTALS			**117,427**	0	**465,779**	**117,427**	

Notes: The maximum discharge rate from the INF Pond is 170 gallons per minute (gpm) and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
Treated groundwater volume released over the weekend is included in the total for the next working day. These dates are marked with an asterisk (*).

1 EVALUATION OF GROUNDWATER TREATMENT PLANT

The Groundwater Treatment Plant (GWTP) was constructed as part of the Interim Remedial Action at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24, to treat groundwater extracted from interception-collection trenches (ICTs) and extraction wells. **Figure A-1** located in **Appendix A** presents the layout of the ICTs and extraction wells at LHAAP-18/24. The groundwater contamination at LHAAP-18/24 likely resulted from infiltration from an Unlined Evaporation Pond that was used to store manufacturing wastewater, and from burning trenches and other industrial processes used to flash pyrotechnic, propellant, and explosive waste streams. The groundwater at LHAAP-18/24 is contaminated mainly with chlorinated ethenes and perchlorate, and with lesser concentrations of 1,4-dioxane.

The GWTP no longer receives flow from LHAAP-16 due to injections completed as a part of the final remedy implementation, which commenced in September 2019. The GWTP had previously received flow from eight extraction wells installed at LHAAP-16 as part of a historical treatability study. The extraction wells were installed in 1996 and 1997 at LHAAP-16.

1.1 Treatment Configuration

The process flow diagram for the GWTP is presented in **Appendix A, Figure A-2**. Groundwater extraction, treatment, discharge, and monitoring activities consist of the following:

- Continuous extraction of groundwater from multiple ICTs and extraction wells located at LHAAP-18/24;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and discharge of treated water to Harrison Bayou or to a holding pond (INF Pond) or the treated water may be released as irrigation water on LHAAP-18/24.

Contaminated water from the extraction wells and ICTs is pumped into the GWTP and stored in the equalization storage tank. The contaminated water is then pumped to the pretreatment system for precipitation of metals. The sludge from the pretreatment system is delivered to the sludge treatment system to be thickened, air stripped of volatile organic compounds (VOCs), and filter pressed for burial in a landfill. The water from the pretreatment system is delivered to the air stripper system for air stripping of VOCs. Water from the air stripper is stored in the effluent storage tank for further treatment by the perchlorate system, which consists of a fluidized bed reactor (FBR) and ion exchange (IX) vessels. The process flow diagram for the GWTP is presented in **Appendix A, Figure A-2**.

To provide the integration necessary for proper water process management, a stand-alone central Programmable Logic Controller (PLC) and operator console is used to control all of the

operating systems of the GWTP. The belt filter press operates independently with a polymer pump and sludge feed pump interfaced with the central PLC.

The pretreatment system and air stripper system are equipped with instrument junction boxes and motor starter control panels. The control panels contain a transformer, run indication lights, motor starters, hand or automatic switches, and relays to interface with the central PLC. The control panels have monitors and/or logic to monitor the operating parameters and determine when abnormal conditions occur. Interface relays will indicate to the central PLC that there is a problem within the systems. The central PLC will provide the logic for the proper action required for that specific set of circumstances.

The GWTP was not operational between 24 May 2012 and 6 September 2012, due to malfunction of the scrubber unit associated with the catalytic oxidizer. Since 6 September 2012, the GWTP has operated without air abatement equipment. Although major repairs were conducted on the GWTP (e.g., replacement of level alarms, repair of the hydrochloric acid [HCl] tank, replacement of TK-650, replacement of malfunctioning valves and flow meters, replacement of metering pumps, repair or replacement of various system pumps, rust removal and repainting of various tanks, and replacement and repair of various extraction pumps, motors, and level switches), the GWTP treatment configuration has remained relatively unchanged. The only exception to this is that IX vessels were installed in November 2018 following the FBR to further remove perchlorate prior to discharging to the INF pond.

1.1.1 Historical GWTP Operation

The GWTP was not operational from 24 May 2012 until 6 September 2012. This was related to meltdown of the scrubber system, associated with the catalytic oxidizer, due to system overheating. Overheating occurred when the blower became inoperable after the bearing on the scrubber blower unit was shattered and damaged the blower. This occurred around 1300 on 21 May 2012.

After developing an interim air monitoring plan and obtaining concurrence from the Texas Commission on Environmental Quality (TCEQ) and the United States Environmental Protection Agency (USEPA) to operate the GWTP without use of air abatement equipment, a pilot run of the GWTP was conducted on 6 September 2012. In that first pilot run, 85,170 gallons of water that had been stored in the influent equalization tank (TK-140) were treated. The treated water was re-circulated through the FBR to revive the FBR after 3 months of dormancy. Treated groundwater samples were collected and analyzed, respectively, for perchlorate, metals, and VOCs. Air samples were collected and analyzed for VOCs only.

On 19 September 2012, a second pilot run was performed at the GWTP, and 107,264 gallons of water were treated. Based on the successful re-start of the GWTP, continuous groundwater extraction began again on 24 September 2012. While groundwater extraction occurs on a continuous basis, operation of the GWTP occurs intermittently due to the low volume of water available for treatment with respect to the design capacity of the GWTP. During the 3rd Quarter of 2012, groundwater extraction occurred only from LHAAP-18/24. Groundwater extraction from LHAAP-16 was not performed due to equipment failure. However, extraction from LHAAP-16

began in October 2012 and the extraction volumes increased steadily throughout the 4th Quarter of 2012, as pumping equipment was gradually repaired/replaced. The GWTP operated under normal conditions until September 2015.

On 14 September 2015, at 1115, the blower on the air stripper (BL-340) malfunctioned during routine operation. The wiring on the blower was repaired and the blower operated for less than 2 hours on 17 September 2015, when the blower malfunctioned again. It was determined that the blower needed to be replaced, and groundwater extraction and operation of the GWTP ceased beginning 18 September 2015, as the influent equalization tank (TK-140) became full. Beginning on 2 October 2015, it was determined that the GWTP could operate without the blower at a reduced extraction rate. The operation of the GWTP allowed extraction of groundwater from ICTs 12E, 13A, 13B, and 13C (13C was changed to 13E on 12 October 2015), which were considered critical ICTs to prevent migration of contaminants to Harrison Bayou. Groundwater extraction was switched frequently between ICTs 12E, 13A, 13B, and 13E to ICTs 14B, 14C, and 14D beginning on 14 December 2015.

Malfunction of the blower on the air stripper (BL-340), on 14 September 2015 and 17 September 2015, disrupted continuous extraction and routine operations of the GWTP, which lasted through 7 January 2016. Prior to this occurrence, the GWTP performed as designed and the GWTP was operated on an as needed basis (i.e., semi-continuous operational basis). During the 4th Quarter of 2015, groundwater was extracted from a limited number of ICTs (ICTs 12E, 13A, 13B, 13C, and/or 13E, or ICTs 14B, 14C, and 14D). Operation of the GWTP occurred on a batch basis through the FBR. After replacement of the blower, attempts were made to restore continuous operations to the FBR, but they remained predominantly on a batch basis throughout January 2016.

On 12 December 2016, flange bolts at TK-380 failed and allowed HCl to drain into the sump. The secondary containment area was washed down, and the sump contents were transferred into the influent equalization tank (TK-140). Because of the acid release, extraction of groundwater from the ICTs was halted, and the GWTP was put into recycle mode (effluent sent back as influent) until the acid was neutralized and perchlorate, metals, and VOCs were below discharge criteria on 17 March 2017. The FBR performance was challenged by the increased chlorides in the neutralized wastewater, but performance gradually returned to normal in the 1st Quarter of 2017. Groundwater extraction was gradually increased to full rates during the 2nd Quarter of 2017.

On 12 August 2017, severe storms caused a power outage at LHAAP-18/24. When electrical service was restored, the main transformer failed due to a manufacturing defect. A portable emergency generator was brought on-site on 21 August 2017, to allow the FBR to operate in full recycle mode. After a replacement transformer was installed on 12 September 2017, extraction began from ICTs 13B, 13C, 13D, 13E, 13F, 7, and EW01 and the FBR was put into normal operation. Beginning on 21 September 2017, groundwater was extracted from all of the ICTs.

On 27 December 2018, severe storms caused a power outage in Karnack, Texas. When electrical service was restored, the main transformer was determined to have failed. A portable

emergency generator was brought on-site on 28 December 2018, to allow the FBR to operate in full recycle mode. On 5 February 2019, the smaller generator mobilized in December 2018 was replaced with a larger generator capable of powering the LHAAP-18/24 well field and the entire GWTP.

On 8 February 2019, the transformer at the GWTP was tested to ensure that it could handle back feeding necessary to power the LHAAP-18/24 well field due to the necessary step-down in power from the generator. Following additional system modifications based upon the testing, the well field at LHAAP-18/24 had power restored on 11 February 2019, using the generator and transformer at the GWTP.

From 11 June to 17 June 2019, a double-walled pipe in the burning grounds (ICTs 14C and 14D) was found to be leaking at a joint and repaired. In addition, the line to well 18WW17 was cut off due to leaks identified following repair of the other section of pipe. The ground was too wet to dig and replace the other double-walled pipe at that time. From 28 October to 31 October 2019, a new double-walled pipe to well 18WW17 was installed by Palmetto Services (Palmetto).

Groundwater is no longer extracted from LHAAP-16 because in situ bioremediation injections were completed in September 2019 as part of the final remedial action. The only groundwater treated and discussed within this report is from LHAAP-18/24.

On 11 January 2020, a possible tornado and straight-line winds came through the area and broke the power lines. The breaker was shut off at the transformer until power lines could be repaired on 14 and 15 January 2020, by Ark-La-Tex Electric (Ark-La-Tex). On 18 January 2020, power was lost to the GWTP, and it was discovered that there was a blown fuse on the power lines. Ark-La-Tex was called to the site to replace the fuse and power was restored to the GWTP the same day. On 29 March 2020, there was a power glitch that caused the air compressors to shut down. The air compressors and FBR were restarted on the same day. On 13 April 2020, two trees fell across a power line and caused loss of power to the plant. Ark-La-Tex removed the trees and restored power at 0945 on 14 April 2020. On 2 May 2020, a tree fell across Southwestern Electric Power Company's (SWEPCO's) line inside the plant that feeds the GWTP. SWEPCO came out and removed the tree from the line. Power was restored the same day. On 29 December 2020, housing was built for the acetic acid pump associated with the FBR to prevent rainwater from causing it to shut down.

On 13 February 2021, inclement weather began, and it stayed below freezing until 20 February 2021. The level transmitter on TK-650 froze, making the discharge pump inoperable. The level transmitter was thawed out and pumping was restarted. On 20 February 2021, the air compressors were able to be started again. The FBR began operation in recycle mode, but the oxidation-reduction potential (ORP) was greater than the normal operating requirements. From 21 February through 9 March 2021, repairs from the freeze were made on broken polyvinyl chloride (PVC) pipes, valves, fittings, and level transmitters. The ORP on the FBR remained elevated and the FBR was in recycle mode until 25 March 2021 when the ORP returned to normal range and discharge to the Harrison Bayou was able to resume.

A power outage occurred on 12 May through 13 May 2021, due to downed power lines. On 14 May 2021, Ark-La-Tex was on-site to replace the broken power pole and repair broken power lines. On 28 May 2021, a power outage occurred at 0430, due to a downed tree. SWEPCO restored power the following day on 29 May 2021. On 2 June 2021, elevated perchlorate effluent results, precipitated replacement on the acetic acid nutrient feed pump. Perchlorate effluent results dropped below discharge limits but not to expected concentrations. As a result, the FBR was placed in recycle mode from 18 June 2021 through the end of the 2nd Quarter 2021.

On 29 July 2021, Envirogen Technologies (Envirogen) mobilized to the site to troubleshoot the FBR. The plant was brought offline to diagnose why perchlorate effluent results remained elevated. Envirogen found the fluidization flow at 230 gallons per minute (gpm) and the inlet pressure to the FBR at 14 pounds per square inch (psi) as satisfactory. Envirogen determined that the inline potential of hydrogen (pH) probe was not calibrating properly, and it was giving an incorrect reading of 7.4. In July 2021 the pH reading was 8.24 which is above the enhanced FBR operating parameters. Ideally, the pH should be between 7.1 and 7.4 in the FBR. A high pH can inhibit biological activity. Envirogen recommended the installation and calibration of a new pH probe. A new inline pH probe was ordered, and replacement and calibration were completed on 6 April 2022.

Additionally, Envirogen noted that the granulated activated carbon (GAC) settled bed height was 6.33 feet (ft) and the expanded bed height was 9 ft. The design settled bed height for the GAC was 9 ft and the design expanded bed height was 15 ft, with the expanded bed height being a key performance indicator for the FBR. Therefore, Envirogen recommended the addition of two supersacks of GAC media. One supersack of GAC was delivered, pre-wetted, and loaded in the FBR on 29 July 2021. After the addition of one supersack of GAC, the settled bed height was measured at 9.1 ft and the expanded bed height was measured at 11.3 ft. Additional GAC was ordered and added to the FBR. The GWTP was brought back online on 3 August 2021.

Palmetto was on-site from 20 September through 24 September 2021 to replace sand in the sand filter. The sand in the sand filter collects debris that is filtered out of the water as designed. However, over time the debris restricts the flow of water through the filter. Therefore, the GWTP was taken offline on 20 September 2021 to replace the sand. Palmetto removed the sand and screens, acid washed the screens, put the screens back in place, and then added new sand using a crane. Approximately 4.5 tons of 10 x 20 silica sand and 12 tons of 8 x 12 silica sand were placed into the sand filter. While the plant was down for the sand filter activities, the 10-inch PVC line between the clarifier effluent and the sludge tanks was replaced, and the polymer feed line was unclogged. However, before the GWTP could be operated again, the HCl feed pump malfunctioned as discussed below.

On 4 October 2021, the GWTP was unable to operate due to a malfunctioning pump motor on the HCl feed pump (P-390). On 5 October 2021, Bloc Design Build, LLC (BLOC) was on-site to diagnose the problem with the HCl pump motor (P-390) which was seized and inoperable. A new pump motor was ordered and on 14 October 2021, BLOC returned and installed wiring to the new motor on the HCl pump (P-390).

Upon arrival at the GWTP on 5 October 2021, there was no power at the GWTP. A blown fuse was found on SWEPCO's transformer. SWEPCO replaced the fuse, however, only partial power was restored to the GWTP on 5 October 2021. On 7 October 2021, Ark-La-Tex was on-site to troubleshoot the electrical power issue and determined that the load break switch (commonly referred to as an arc strangler) was blown at the transformer at the GWTP and needed to be replaced. The load break switch malfunction had caused the fuse to fail, cutting power to the GWTP. On 11 October 2021, Ark-La-Tex was on-site to repair the load break switch and restore power to the GWTP. Following the restoration of power, and replacement of the HCl pump, the GWTP operation resumed on 18 October 2021.

In March 2022, a severe storm blew down a tree damaging two power poles, but there was no power loss at the time of the storm event. On 16 March 2022 and 17 March 2022, Ark-La-Tex arrived on-site to replace the power poles and to repair the power lines. As a result, power was shut off at the plant for approximately 24 hours from 16 March to 17 March 2022, to allow Ark-La-Tex to safely work with the power lines.

On the afternoon of 2 May 2022, there was partial power loss to the GWTP. After an inspection of the overhead power lines, a fuse was found blown on SWEPCO's transformer. SWEPCO was alerted and responded on 2 May 2022 to replace the fuse. The GWTP was completely powered down on 2 May 2022 as a safety precaution while SWEPCO addressed the blown fuse. In addition to the blown fuse, there was also a small fire observed on the ground at the base of the transformer load breaker switch at the GWTP. The United States Fish and Wildlife Service was alerted, and the fire was put out with a water sprayer on 2 May 2022. The status of the load breaker switch on the transformer could not be assessed until power was fully restored.

However, before power could be restored to the GWTP, a severe storm on 3 May 2022 knocked down another tree. The downed tree fell on the overhead line, breaking the overhead line and two cross arms. Ark-La-Tex repaired the overhead line, cross arms, and assessed the load breaker switch on 11 May 2022. Power was restored to the GWTP on 11 May 2022 and a new load breaker switch was ordered. Ark-La-Tex returned on 17 May 2022 to install the replacement load breaker switch.

On 10 June 2022, the K-701 air compressors went down due to a power glitch. The air compressors were restarted and FBR returned to normal operating range.

A supersack of GAC (1,000 pounds) was delivered on 17 June 2022. On 20 June 2022, the FBR was topped off with approximately 150 pounds of GAC, expanding the bed height to 15 ft as designed. The expanded bed height is a key performance indicator for optimal performance of the FBR.

On 22 June 2022, a power outage occurred for 1.5 hours on SWEPCO's side. Power was restored and air compressors were restarted and FBR was returned to normal operating range.

1.1.2 3rd Quarter 2022 GWTP Operation

During the 3rd Quarter 2022 (July – September), the adjacent LHAAP-17 groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction

system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022. Details regarding the installation of the groundwater extraction system at LHAAP-17 are included in the Interim-Remedial Action Completion Report (TLI Solutions, December 2022). Through the end of September 2022, 121,411 gallons of groundwater has been pumped from LHAAP-17 to the GWTP. Monthly groundwater extraction quantities from LHAAP-17 are presented in **Table 5**. Monthly performance monitoring completed at LHAAP-17 and an evaluation of the effectiveness of the LHAAP-17 extraction system will be presented in Annual Remedial Action Operation Reports under separate cover.

To address a potential blockage identified during the 2nd Quarter 2022, the GWTP was brought offline and the metals pretreatment process tanks TK-200A, TK-200B, and TK-200C were drained on 12 September 2022. While, each tank had sediment buildup, no blockage was found inside the metals' pretreatment tanks. The blockage is believed to be in the overhead 10-inch steel piping between tanks TK-200B and TK-200C. However, to safely access the overhead piping, which is elevated approximately 15 feet in the air, scaffolding is necessary. Arrangements to procure scaffolding have been made to address the blockage during the 4th Quarter 2022. In the interim, the sediment was removed from the metals' pretreatment tanks and the GWTP was brought back online on 13 September 2022.

No ICT repairs were conducted in the 3rd Quarter. Previous ICT repairs are summarized in **Table A-2** in **Appendix A.**

In the 3rd Quarter 2022, the GWTP processed approximately 1,623,895 gallons of water including influent water from LHAAP-18/24, influent water from LHAAP-17, rainwater from the catch basin, and decanted water from the metals' treatment and solids removal processes. In addition, a suspected blockage restricted flow through the pretreatment process causing a leak prior to Tank 200A. This leak, also captured in the catch basin, is included in the processed volumes.

During the 3rd Quarter 2022, the GWTP operated for 176.75 hours. Flow rates for the treatment processes for metals and VOCs ranged between 151 and 154 gpm with an average of approximately 153.1 gpm for the operating hours (i.e., this flow rate does not represent continuous flows). The treatment configuration of the plant at these rates (with minor variations) is shown in the following tables.

GWTP Metals Precipitation Operating Parameters

Pretreatment Settings	Tank 200-A $Mg(OH)_2$ Mixing	Tank 200-B NaOH Mixing	Tank 200-C Polymer Mixing	Tank 300 feed line to Air Stripper
pH Adjustment	9.0	10.5	NA	5.0 to meet ≤ 8.0 release from stripper
Feed Pump Settings	Speed 100% Stroke 100% 10 gph $Mg(OH)_2$	Speed 100% Stroke 100% 9.0 gph NaOH	Speed 90% Stroke 100% 40 gph water	Speed 80% Stroke 80% 10 gph HCl
Notes: % - percent, ≤ - less than or equal to, gph - gallons per hour, NaOH - sodium hydroxide, $Mg(OH)_2$ - magnesium hydroxide, NA - not applicable				

GWTP Air Compressors Operating Parameters

Air Compressors	K-700A	K-700B	K-701
Air Pressure Settings	88 psi	88 psi	105 psi

GWTP Stripper Operating Parameters

pH Setting	7.4
Inlet Pressure Gauge	Not operational
Stripper Pressure Gauge	Not operational
Air Flow Rate	Not operational

GWTP Fluidized Bed Reactor Operating Parameters

Carbon Bed Height	12 feet and 8 to 11 inches
Recycle Flow Rate	200 gpm
pH	7.1 to 7.4
Recycle ORP	<-430 mV
Note: mV – millivolts	

1.2 Work Performed at the GWTP

Groundwater extraction, treatment, discharge, and monitoring activities consist of:

- Continuous extraction of groundwater from multiple ICTs and extraction wells at LHAAP-18/24 and LHAAP-17;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou or to a holding pond (INF Pond).

Maintenance performed at the GWTP during the 3rd Quarter of 2022 is described in the following subsections.

1.2.1 Major Maintenance

The major maintenance items that were completed at the GWTP during this quarterly reporting period are:

- On 30 August 2022, BLOC was onsite to start replacing the electrical panel on TK-200A.
- On 12 September 2022, metals pretreatment tanks TK-200A, TK-200B, and TK-200C were drained to troubleshoot partial blockage. The manways of TK-200 B & C were opened and cleaned out sludge from tanks. 3-inch PVC elbow and pipe on drain valve of TK-200B were installed. Sludge within the clarifier was washed out, and sludge was cleaned out from between slanted plates.

1.2.2 Routine Maintenance

The following routine maintenance items were completed at the GWTP during 3rd Quarter 2022:

- Performed housekeeping in GWTP office, Army trailer, around GWTP and containment area, and in GWTP Shop
- Mowed grass around GWTP office, Army trailer, GWTP and containment area, and around the GWTP Shop
- Removed and cleaned basket from 4-inch strainer on discharge of FBR
- Replaced ¼-inch suction tubing on P-103
- Repaired leaking 6-inch valve at discharge location at Harrison Bayou
- Installed new 2-inch discharge hoses on sump pump
- Replaced section of 3-inch PVC piping, fitting, and flanges on line from sump to TK-140
- Collected quarterly air samples at GWTP
- Collected quarterly surface water samples
- Collected monthly water levels from LHAAP-18/24
- Bush-hogged roadway from automatic gate to GWTP
- Replaced broken 6-inch PVC flanges and piping at discharge location on Harrison Bayou

1.2.2.1 Lubrication

No lubrication maintenance was conducted during 3rd Quarter 2022.

1.2.2.2 Air Compressors

The following maintenance was conducted on the air compressors during 3rd Quarter 2022:

- On 21 September 2022, Industrial Supply & Service was onsite to perform maintenance on all three air compressors and to replace blow down valve on K-701.

1.2.2.3 Belt Press and Waste Disposal

No belt press or waste disposal was conducted during 3rd Quarter 2022.

1.2.2.4 Sand Filter

No maintenance or repairs were conducted on the sand filter (FL-290) during 3rd Quarter 2022.

1.2.2.5 Well Field at LHAAP-18/24

The following activities were conducted at the well field at LHAAP-18/24 during the reporting period:

- Measured monthly water levels
- Sampled wells
- Collected annual ICT well samples
- Bush-hogged and trimmed around wells

1.2.2.6 Miscellaneous Activities

No miscellaneous activities were performed during the 3rd Quarter 2022 reporting period.

1.2.3 Routine Maintenance (Potable Water Wells)

The following activity was conducted during the 3rd Quarter 2022:

- Flushed potable water lines

1.3 Filter Cake Operations and Management

No filter cake operations took place during the 3rd Quarter 2022 reporting period.

1.4 Fluidized Bed Reactor Operations

The operating parameters for the GWTP FBR are presented in **Table 1**. Measurements indicating pH or ORP values that fell outside of the optimal range are highlighted gray.

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 3rd Quarter 2022

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
7/1/2022	7.2	-568	85
7/2/2022	7.2	-562	86
7/3/2022	7.2	-560	87
7/4/2022	7.2	-564	88
7/5/2022	7.3	-567	88
7/6/2022	7.3	-571	88
7/7/2022	7.4	-577	87
7/8/2022	7.4	-580	88
7/9/2022	7.4	-576	88
7/10/2022	7.4	-579	89

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 3rd Quarter 2022

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
7/11/2022	7.4	-585	89
7/12/2022	7.4	-583	89
7/13/2022	7.3	-580	90
7/14/2022	7.4	-573	88
7/15/2022	7.4	-580	88
7/16/2022	7.4	-582	89
7/17/2022	7.4	-587	90
7/18/2022	7.4	-532	89
7/19/2022	7.4	-587	89
7/20/2022	7.4	-582	91
7/21/2022	7.4	-537	89
7/22/2022	7.4	-580	89
7/23/2022	7.4	-577	89
7/24/2022	7.4	-573	89
7/25/2022	7.4	-527	89
7/26/2022	7.4	-561	90
7/27/2022	7.4	-573	91
7/28/2022	7.4	-501	89
7/29/2022	7.4	-506	90
7/30/2022	7.4	-553	90
7/31/2022	7.4	-577	91
8/1/2022	7.4	-571	90
8/2/2022	7.4	-549	90
8/3/2022	7.4	-559	91
8/4/2022	7.4	-585	89
8/5/2022	7.4	-583	90
8/6/2022	7.4	-570	90
8/7/2022	7.4	-572	91
8/8/2022	7.4	-567	90
8/9/2022	7.4	-588	89
8/10/2022	7.3	-578	86
8/11/2022	7.4	-563	85
8/12/2022	7.4	-563	86
8/13/2022	7.3	-563	86
8/14/2022	7.2	-557	87
8/15/2022	7.1	-523	88

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 3rd Quarter 2022

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
8/16/2022	7.0	-543	89
8/17/2022	7.0	-555	90
8/18/2022	7.0	-535	87
8/19/2022	7.1	-544	86
8/20/2022	7.1	-551	86
8/21/2022	7.2	-556	86
8/22/2022	7.2	-547	82
8/23/2022	7.1	-542	80
8/24/2022	7.1	-549	81
8/25/2022	7.1	-543	81
8/26/2022	7.0	-545	82
8/27/2022	7.0	-544	83
8/28/2022	7.0	-548	84
8/29/2022	7.0	-547	85
8/30/2022	7.0	-553	85
8/31/2022	7.0	-551	85
9/1/2022	7.0	-546	85
9/2/2022	7.0	-551	84
9/3/2022	7.0	-550	85
9/4/2022	7.0	-554	84
9/5/2022	7.0	-557	84
9/6/2022	7.0	-537	86
9/7/2022	7.0	-547	85
9/8/2022	7.0	-546	83
9/9/2022	7.1	-552	83
9/10/2022	7.1	-540	83
9/11/2022	7.1	-545	84
9/12/2022	7.2	-497	82
9/13/2022	7.2	-552	82
9/14/2022	7.2	-551	81
9/15/2022	7.2	-553	82
9/16/2022	7.2	-549	83
9/17/2022	7.1	-552	84
9/18/2022	7.1	-554	84
9/19/2022	7.1	-537	85
9/20/2022	7.1	-552	85

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 3rd Quarter 2022

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
9/21/2022	7.1	-551	85
9/22/2022	7.0	-450	83
9/23/2022	7.2	-514	82
9/24/2022	7.2	-512	84
9/25/2022	7.2	-519	85
9/26/2022	7.2	-503	82
9/27/2022	7.2	-544	80
9/28/2022	7.2	-547	80
9/29/2022	7.2	-484	76
9/30/2022	7.2	-539	74
Note: S.U. - standard unit; Shaded values - pH outside of operating parameters			

1.5 Process Chemical Usage at GWTP

Approximate chemical consumption and the quantity delivered during the 3rd Quarter of 2022 are shown in **Table 2**.

Table 2. Chemical Usage and Delivery Table

Chemical	Usage 3rd Quarter 2022	Quantity Delivered 3rd Quarter 2022
Hydrochloric acid	700 gallons	0
Sodium hydroxide (35%)	1,000 gallons	0
Acetic acid (50%)	65 gallons	0
Phosphoric acid (75%)	9.8 gallons	55 gallons
Magnesium hydroxide	200 gallons	0
Urea	273.9 pounds	0
Polymer (magnafloc 110-Liters)	10.0 liters	0

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2 EVALUATION OF LHAAP-18/24 ICT EFFECTIVENESS

The ICT system at Burning Ground No. 3 is composed of 14 sections ranging in length from 100 ft to 1,300 ft. A total of approximately 5,000 linear ft of trench was installed within and around three sides of Burning Ground No. 3. The trench sections extend approximately 22 ft to 45 ft below ground surface (bgs). Most, but not all, of the trenches are as deep as the confining clay layer of the shallow groundwater zone. High density polyethylene (HDPE) liners were installed outside of ICTs 12A-12E and 13A-13G, located on the southwestern and northwestern boundaries of LHAAP-18/24, respectively. The locations of the liners are shown on **Figure A-1** and depths of the ICTs are presented on **Table A-1** in **Appendix A**.

2.1 Groundwater Elevation

Water levels from 92 monitoring wells and 11 piezometers are measured monthly to generate potentiometric surface maps that assist in monitoring the effectiveness of the groundwater extraction system on plume containment. Piezometer 12 (BGPZ-12) was damaged and plugged and abandoned in May 2013, and monitoring wells 18WW01 and 18WW16 were plugged and abandoned in August 2020. The potentiometric surface contours are generated using the water levels from the shallow zone and Wilcox Formation wells. The water level data are presented in **Table 3**. No reinjection of treated groundwater or reapplication of groundwater to LHAAP-18/24 grounds via the existing irrigation system occurred during the 3rd Quarter of 2022. Groundwater elevations measured during the 3rd Quarter of 2022 are discussed in Section 2.2. Potentiometric surface maps based on the groundwater elevations measured during the 3rd Quarter 2022 are contained in **Appendix B**.

2.2 Performance of Plume Capture

The intent of the ICTs is to control horizontal groundwater hydraulic gradients, prevent off-site migration of contaminated groundwater, extract the most highly contaminated groundwater, and reduce the mass of contaminants in groundwater. Liners were installed in the ICTs on the northern (ICT 13) and western (ICT 12) site boundaries to limit migration of contaminated water from the site towards Harrison Bayou. At the same time, the liners reduce or prevent removal of contaminated groundwater that is outside the ICT containment area, between the site and Harrison Bayou. The ICTs are installed within the shallow subsurface at the site and capture primarily shallow zone groundwater (e.g., less than [<]40 ft bgs).

In 2007 and 2008, in consultation with the TCEQ and the USEPA, the Army ceased operations of ICTs 1, 3, 5, 10, 12A, and 13G for groundwater extraction (note that extraction from ICT 12A was resumed after pump replacement in December 2012). Two other ICTs (ICT 6 and ICT 9) were changed from extraction ICTs to re-injection ICTs which ceased in July 2012. Groundwater extraction from well EW-1 located in the northeast central portion of the site began in October 2008 and extraction from well 18WW17 located to the northeast of the ICT containment area began in January 2008. **Table A-2** in **Appendix A** presents a summary of extraction equipment replacement since 2011, as dictated by poor extraction performance (malfunctioning pumps,

poor pump positioning with respect to groundwater elevations, non-operational level probes, scale build up, etc.). Further discussion of extraction performance of various ICTs and extraction wells is presented in Section 2.3.

Potentiometric surface maps of the shallow zone groundwater in the vicinity of LHAAP-18/24, based on groundwater elevations measured on 26 July, 31 August, and 28 September 2022, are shown on **Figures B-1, B-2, and B-3 in Appendix B**, respectively. The potentiometric surface maps of the shallow zone were contoured using the Kriging geostatistical interpolation method included in the Golden Software Surfer® data analysis software.

The HDPE liners in the ICTs, where present, continue to retard groundwater flow. The potentiometric surface maps for July through September 2022 continue to reflect high groundwater elevations in the shallow zone in the northern/northwestern portion of the site, with groundwater flowing radially outward from an area within the ICT containment area with the highest groundwater elevations. Monitoring wells MW-1 and 123, which are installed in the shallow zone, had groundwater elevations in July 2022 of 173.71 ft above mean sea level (amsl) and 172.52 ft amsl, respectively. Monitoring wells MW-1 and 123 are near one another.

The extracted groundwater volume was measured on a monthly basis as the sum of the difference between the flow meter totalizer reading at each ICT between the beginning and end of each month. During the 3rd Quarter 2022, approximately 604,955 gallons of groundwater were extracted from the ICTs for treatment, 256,431 gallons in July 2022; 217,883 gallons in August 2022; and 130,641 gallons in September 2022 (**Table 5**). Note that the sum of the ICT totalizers does not match up to the influent totalizer (FIT-140) at the groundwater treatment plant. As shown on **Figure 2-1,** the influent totalizer volume for the 3rd Quarter 2022 was 719,572 gallons. The influent totalizer biases are high because the reading assumes the pipe is completely full, which often is not the case.

During the 3rd Quarter 2022, approximately 117,427 gallons of treated groundwater was discharged to Harrison Bayou from the GWTP. Approximately 465,779 gallons of treated groundwater from the GWTP was discharged to the INF pond. No treated groundwater from the GWTP was returned to LHAAP-18/24 via the sprinkler system during the 3rd Quarter 2022. Throughout the 3rd Quarter of 2022, the treated groundwater was processed through the IX vessels to provide additional water treatment for perchlorate prior to discharge to Harrison Bayou. **Table 4** presents the daily discharge rates and volume for the 3rd Quarter of 2022.

Groundwater levels in Wilcox Formation wells (constructed greater than 40 ft bgs) were measured during the 3rd Quarter of 2022 groundwater gauging events. Wilcox Formation wells correspond to those wells previously identified as “intermediate” and “deep” wells. “Intermediate” wells are designated as upper Wilcox Formation wells and “Deep” wells are designated as lower Wilcox Formation wells. The upper and lower Wilcox Formation are in hydraulic communication and so can be treated as a single hydrogeologic unit (Remedial Investigation Report, Jacobs Engineering Group, April 2011). Therefore, the groundwater elevations in upper and lower Wilcox wells were used to construct the potentiometric surface maps for the Wilcox Formation. **Figures B-4, B-5, and B-6 in Appendix B** show the locations of

the Wilcox Formation monitoring wells and the potentiometric surface of the Wilcox Formation, based on static water levels measured during the July, August, and September 2022 gauging events, respectively. A groundwater high is present in the Wilcox Formation in the area of monitoring wells MW-14 and 18CPTMW01SW. Wilcox Formation groundwater flows radially away from MW-14 and 18CPTMW01SW. Across the rest of the site, Wilcox Formation groundwater flows in a north-northwest direction, towards Caddo Lake and there is a downward vertical hydraulic gradient between the overlying shallow zone and the Wilcox Formation.

2.3 Quantity of Water Extracted from LHAAP-18/24 and LHAAP-17

In the 3rd Quarter 2022, flow rates for the treatment processes for metals and VOCs ranged between 151 and 154 gpm with an average of approximately 153.1 gpm for the operating hours (i.e., this flow rate does not represent continuous flows). The GWTP operated for 176.75 hours during the quarter.

The average daily extraction rates from the extraction wells at LHAAP-17 were approximately 2,107 gpd in August 2022, and approximately 2,221 gpd in September 2022 (**Table 5**). The average daily extraction rates from the ICTs at LHAAP-18/24 were approximately 8,272 gallons per day (gpd) in July 2022, approximately 7,028 gpd in August 2022, and approximately 4,355 gpd in September 2022 (**Table 5**). The volume of groundwater removed from LHAAP-17 and LHAAP-18/24 during the 3rd Quarter of 2022 measured approximately 719,572 gallons based on the influent totalizer (FIT-140). **Figure 2-1** shows the historical trends of extracted volumes based on the influent totalizer by quarter. Additionally, approximately 67,848 gallons of accumulated rainwater, 59,840 gallons of decanted water from the metals' treatment process, and 34,807 gallons of decanted water from the solids removal process was added from the secondary containment catch basin back into the GWTP equalization tank (TK-140) via the sump. A total of 882,067 gallons of water was processed through TK-140 in the 3rd Quarter of 2022. The processed water measured on the equalization tank (TK-140) effluent totalizer (FIT-172) was recorded at 1,623,895 gallons indicating that there is partial blockage within the pretreatment process causing a leak after the FIT-172 gauge and prior to Tank 200A (Oxidation-Reduction Potential tank). This extra volume of water from the suspected blockage leak is captured in the catch basin and is also pumped back through the equalization tank via the sump. During the next reporting period, scaffolding will be used to access the 10-inch overhead piping spanning between Tanks 200B and 200C to remove the partial blockage.

In contrast to the approximate total of influent groundwater processed at the GWTP (719,572 gallons), the total estimated volume discharged to the Harrison Bayou and the INF Pond (**Table 4**) following treatment by the GWTP was 583,206 gallons discharged in the 3rd Quarter of 2022. The difference between the total influent and total discharged volumes during the 3rd Quarter of 2022 is approximately 136,366 gallons as of 30 September 2022. The discrepancy in influent and discharged volumes can be partially accounted for due to the volume of water loss from the air stripper evaporative losses estimated at 72,659 gallons. The remaining volume (63,701 gallons) is accounted for in the storage capacity of the plant in the equalization tank (TK-140) and the effluent storage tank (TK-630). Effluent from LHAAP-18/24 is pumped to the GWTP and is stored

in the 300,000-gallon equalization tank (TK-140). The equalization tank stores water until it is run through the treatment process and acts as a batch tank. For the FBR treatment to function properly, the flow of water is restricted, and as a result all the groundwater that is pumped from LHAAP-18/24 does not necessarily run through the GWTP before the end of the reporting period. Therefore, the storage capacity of the plant is estimated to account for the discrepancy between influent and effluent volumes. For example, at the end of the previous quarter in June 2022, approximately 119,689 gallons of water was already stored in the GWTP. Therefore, the storage capacity of the GWTP is estimated to account for the discrepancy between influent and effluent volumes. At the end of the 3rd Quarter, approximately 63,701 gallons of water was stored in the GWTP.

As indicated by **Table 5**, 23 of 28 ICTs and wells produced water in the 3rd Quarter 2022. ICTs 1, 3, 5, 10, and 13G did not produce water in the 3rd Quarter of 2022. ICTs 1, 3, 5, and 10 were deactivated on 18 February 2008 as part of a pilot study for system optimization. ICT 13G is dry and no longer active. While ICTs 12A, 13C, and 14A produced water during the 3rd Quarter 2022, each ICT pumped significantly less volume over the course of the quarter than the other ICTs. Low production at ICTs 12A, 13C, and 14A is attributed to the low water levels present in these ICTs. No ICT repairs were completed in 3rd Quarter 2022.

2.4 Sampling Activities at LHAAP-18/24

Groundwater sampling was completed at LHAAP-18/24 in accordance with the requirements documented in the Final Revised Installation-Wide Work Plan (Bhate Environmental Associates, Inc. [Bhate], May 2018). The following 84 monitoring wells were sampled between 8 August and 25 August 2022 during the 3rd Quarter of 2022: AWD-1, AWD-3, AWD-4, 18CPTMW01DW, 18CPTMW01SW, 18CPTMW03SW, 18CPTMW04, 18CPTMW04SW, 18CPTMW06, 18CPTMW07, 18CPTMW08SW, 18CPTMW08DW, 18CPTMW10SW, 18CPTMW10DW, 18CPTMW12SW, 18CPTMW12DW, 18CPTMW14, 18CPTMW15, 18CPTMW16, 18CPTMW18, 18CPTMW19, 18CPTMW19SW, 18CPTMW22R, 18CPTMW22SW, 18CPTMW22DW, 18CPTMW23, 18CPTMW23SW, 18CPTMW24, 18CPTMW26SW, 1824DPTMW01, 1824DPTMW02, 1824DPTMW03, 1824DPTMW04, 1824DPTMW05, 1824DPTMW06, 17WW08, 18WW02, 18WW03, 18WW06, 18WW08, 18WW09, 18WW10, 18WW14, 18WW17, 18WW18, 18WW19, 18WW20, 18WW22, 18WW24, 18WW25, C-01, C-02, C-03, C-04, C-06, C-08, C-09, MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-12, MW-13, MW-14, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, 102, 109, 120, 125, 126, 129, and 130. In addition, ICT-2, ICT-4, ICT-7, ICT-8, ICT-11, ICT-12A, ICT-12B, ICT-12C, ICT-12D, ICT-12E, ICT-13A, ICT-13B, ICT-13C, ICT-13D, ICT-13E, ICT-13F, ICT-14A, ICT-4B, ICT-14C, ICT-14D, and ICT-14E were sampled in the 3rd Quarter of 2022. Shallow groundwater zone monitoring wells 1824DPTMW01 through 1824DPTMW05 were added to the sampling plan in December 2021 and sampled again in August 2022.

The analytical results are presented in **Table 6**. Laboratory data packages are provided in **Appendix C**. Parameters exceeding their respective Maximum Contaminant Levels (MCLs), Medium Specific Concentrations, or Protective Concentration Levels (PCLs) are as follows:

perchlorate; 1,1,2-trichloroethane; 1,1-dichloroethene (DCE); 1,2-dichloroethane (DCA); carbon tetrachloride; cis-1,2-DCE; methylene chloride (MC); tetrachloroethene (PCE); trichloroethene (TCE); vinyl chloride (VC); arsenic; barium; chromium; manganese; nickel; and 1,4-dioxane.

Groundwater chemicals of concern (COCs) maps showing the results of the August 2022 groundwater sampling event for perchlorate, TCE, and MC are presented by shallow aquifer zone and Wilcox Formation as **Figures D-1 through D-6** in **Appendix D**.

2.4.1 LHAAP-18/24 Analytical Results (August 2022)

Perchlorate exceedances of the PCL (17 micrograms per liter [µg/L]) in the shallow zone groundwater ranged from 34.9 µg/L in monitoring well 102 to 210,000 µg/L in 1824DPTMW05 (**Table 6**). The highest perchlorate concentrations in the shallow zone were observed in MW-5, MW-7, MW-23, 18WW08, 18WW17, 1824DPTMW02, and 1824DPTMW05, with concentrations in these wells ranging between 17,300 µg/L in MW-7 to 210,000 µg/L in 1824DPTMW05 (**Figure D-1**).

Perchlorate was detected below the PCL (17 µg/L) at 1824DPTMW01, 1824DPTMW03, and 1824DPTMW04. However, elevated perchlorate was detected at 1824DPTMW02, outside of the northeast ICT boundary at 76,800 µg/L and at 1824DPTMW05, inside the ICT boundary at 210,000 µg/L. The perchlorate concentration in 18CPTMW23, which is located northwest just outside of the LHAAP-18/24 boundary, was reported at 2.98 µg/L (below the PCL of 17 µg/L). The perchlorate concentration in 18CPTMW23 was 253 µg/L in June 2021. Based on the last 4 years of perchlorate data (December 2019 through August 2022), the December detections in the shallow zone wells are regularly orders of magnitude lower due to decreased rainfall. These changes in concentration are likely influenced by groundwater level fluctuations, rain amounts, and performance of the ICTs.

Perchlorate exceedances of the PCL (17 µg/L) in the Wilcox Formation ranged from 69.8 µg/L in C-03 to 106,000 µg/L in MW-14 (**Table 6**). Perchlorate in the Wilcox Formation was identified at an elevated concentration in MW-14, with a reported August 2022 concentration of 106,000 µg/L. This August 2022 detection is less than the detection in December 2021 of 164,000 µg/L. Perchlorate in the Wilcox Formation was detected in 18CPTMW08SW at a concentration of 13,800 µg/L (**Figure D-2**), which is lower than the concentrations reported in June 2021 (18,700 µg/L) and December 2021 (19,700 µg/L). The perchlorate concentration decreases rapidly downgradient from 18CPTMW08SW. Monitoring well 18CPTMW08DW contained an elevated concentration of perchlorate at 4,930 µg/L in August 2022, consistent with the perchlorate concentration of 4,240 µg/L in December 2021.

The highest TCE detection in the shallow zone was 8,600 µg/L in monitoring well MW-1 (**Figure D-3**), which is less than the June 2021 detection of 15,000 µg/L. MW-1 was not sampled in December 2021. Monitoring wells 1824DPTMW02 and 1824DPTMW05 had TCE detections at 190 µg/L and 4,700 µg/L, which were consistent with the December 2021 TCE results of 190 µg/L and 4,600 J (estimated concentration) µg/L. Monitoring well 1824DPTMW04 had a detection of TCE (0.59 J µg/L) below the MCL (5 µg/L). TCE was not detected in August 2022 at monitoring wells 1824DPTMW01 and 1824DPTMW03.

TCE in the Wilcox Formation was generally present at low concentrations, with the exception of monitoring well MW-14 (**Figure D-4**) with a concentration of 8,100 µg/L in August 2022. Although the August 2022 TCE detection at MW-14 is higher than the December 2021 TCE detection (6,200 µg/L), the concentration of TCE is lower than the concentration of 9,000 µg/L in June 2021. A TCE concentration of 91 µg/L was reported in August 2022 in 18CPTMW01SW, a decrease from 180 µg/L in June 2021 and 230 µg/L in December 2021.

The elevated concentration of MC above the MCL (5 µg/L) in the shallow zone remains centered on MW-2 with a concentration of 15,000 µg/L. The concentrations of MC in MW-2 have fluctuated since June 2017; however, MC was 290,000 µg/L as recently as June 2020. No MC detections were noted in monitoring wells 1824DPTMW01 through 1824DPTMW05 in August 2022. The extent of MC in the shallow zone is depicted on **Figure D-5**.

MC in the Wilcox Formation was detected in 18CPTMW01SW at 11,000 µg/L in August 2022, a decrease from 21,000 µg/L in December 2021. However, this detection was a marked increase from the June 2021 MC concentration of 3,300 µg/L and an increase from the concentration of 100 µg/L reported in June 2019 and of 1,600 µg/L in December 2018. MC was not detected at 18CPTMW01SW in June or December 2020. The concentrations of MC in the Wilcox Formation are shown on **Figure D-6**.

2.4.2 LHAAP-18/24 Trend Analysis

Time-series graphs for the shallow zone and Wilcox Formation wells are presented in **Appendix E**. Graphs for shallow zone wells 18WW08, AWD-3, C-08, MW-2, MW-7, MW-8, MW-16, MW-17, MW-20, MW-21, MW-22, MW-23, MW-109, MW-120, and MW-126 are included. Graphs for Wilcox Formation wells C-03 and MW-14 are also included.

2.4.2.1 Shallow Zone Trend Analysis

The following observations were made for the shallow zone groundwater, based on the August 2022 groundwater monitoring results:

- 18WW08 is located north-northwest of the site in the shallow zone. Perchlorate remained consistent at 20,000 µg/L in August 2022 compared to 23,600 µg/L in December 2021. Perchlorate increased significantly compared to 1,520 µg/L in June 2021. Historical detections have fluctuated from 20,300 µg/L in November 2003, to non-detect in June 2019. Perchlorate detections have seasonal fluctuations at this well. The concentration of MC continues to be non-detect in 18WW08. TCE was detected at 14 µg/L in August 2022, a slight increase from 10 µg/L in December 2021. TCE has increased compared to other recent sampling events including 3.9 µg/L in June 2021 and 3.8 µg/L in December 2020.
- AWD-3 is located inside the ICT containment area near the center of the site in the shallow zone. Perchlorate has increased to 42.3 µg/L in August 2022 compared to 1.94 µg/L in June 2021. Historical detections have fluctuated from 14,100 µg/L in September 2012 to 1.8 µg/L in June 2019. The concentration of MC continues to be non-detect at AWD-3. TCE increased to 650 µg/L in August 2022 from 540 µg/L in June 2021.

- C-08 is located to the northeast of the ICT containment area in the shallow zone. Perchlorate decreased slightly to a concentration of 0.135 µg/L in August 2022 compared to December 2021 at 0.273 µg/L. Perchlorate has been non-detect since December 2018. MC remained below the detection limit in C-08. TCE increased in August 2022 to 1.9 µg/L from December 2021 (1.3 µg/L) and June 2021 (0.87 µg/L). However, TCE remains relatively the same as compared to December 2020 (1.5 µg/L).
- MW-2 is located inside the ICT containment area in the shallow zone. Perchlorate was below detection limit in August 2022. Perchlorate was non-detect in since December 2018. MC has significantly decreased from 510,000 µg/L in June 2019; to 290,000 µg/L in June 2020; to 6,400 µg/L in June 2021; and then to 1,900 µg/L (duplicate result) in December 2021; with an increase in August 2022 to 15,000 µg/L. The TCE concentration decreased in August 2022 to 1,000 µg/L (duplicate result) from 3,600 µg/L in December 2021 and 6,200 µg/L in June 2021. Overall TCE concentrations are trending down. Both MC and TCE fluctuate seasonally at this well.
- Monitoring wells MW-7, MW-8, and MW-17 are located to the southwest of the ICT containment area in the shallow zone.
  - Perchlorate increased in MW-7 to 17,300 µg/L in August 2022 from 16,300 µg/L in December 2021 and 13,100 µg/L in June 2021. However, the August 2022 perchlorate concentration is an overall decrease from 20,300 µg/L in June 2020 and 25,000 µg/L in December 2019. TCE at MW-7 was consistent at 1,800 µg/L in August 2022 with 1,700 µg/L in December 2021, concentrations decreased compared to 2,000 µg/L in June 2021 and 2,700 µg/L in December 2020. This well has seen an upward swing in TCE from 1,300 µg/L in June 2019. MC was not detected at MW-7 in August 2022. Previously, MC has been non-detect at MW-7 since June 2013.
  - Perchlorate decreased in MW-8 to 1,890 µg/L in August 2022 from 3,880 µg/L in December 2021 and 2,500 µg/L in June 2021. Perchlorate concentrations are still trending down from a historical high of 78,000 µg/L in March 2012. TCE at MW-8 was detected at 200 µg/L in August 2022 and has remained relatively stable since December 2019 (180 µg/L). TCE and perchlorate both fluctuate seasonally at this well. MC remained below the detection limit in MW-8.
  - Perchlorate was not detected at MW-17 in August 2022. The perchlorate concentration in MW-17 had previously remained below the detection limit since June 2016. TCE and MC were not analyzed at MW-17 in August 2022.
- MW-16 is located west of the site in the shallow zone. Perchlorate was detected at a low concentration in MW-16 at 0.0518 J µg/L in August 2022, similarly low concentrations were detected in 0.0269 J µg/L in December 2021 and not detected (0.05 U µg/L) in June 2021. Perchlorate concentrations decreased compared to 1.07 µg/L in December of 2020, and a significant decrease from 848 µg/L in June 2020. Historical detections at this well include a low 1.8 J µg/L in December 2019 but the well had a concentration of 2,900 µg/L in June 2019. TCE decreased in August 2022 to 290 µg/L compared to 380 µg/L in December 2021

and 960 µg/L in June 2021. Historical detections include 440 µg/L in December 2020, 1,200 µg/L in June of 2020, 550 µg/L in December 2019, and 1,200 µg/L in June 2019. This variability in the TCE detection has been observed since 2014. MC remained below the detection limit.

- MW-21 is located on the eastern side of the site in the shallow zone. The perchlorate concentration in MW-21 continued to decrease to 9,080 µg/L in August 2022 from 9,660 µg/L in December 2021 and 10,600 µg/L in June 2021. Previous detections include 25,500 µg/L in December 2020, 33,200 µg/L in June 2020, 13,000 µg/L in December 2019, and 24,000 µg/L in June 2019. Perchlorate fluctuates seasonally at this well, but was detected at the lowest concentration to date in August 2022. MC remained below the detection limit. TCE in MW-21 increased to 6,300 µg/L in August 2022, from 4,500 µg/L in December 2021 and 3,900 µg/L in June 2021. However, the August 2022 and both the June and December 2021 TCE detections represent a decrease from 8,700 µg/L in December 2020, and 7,200 µg/L in June 2020. TCE is trending stable overall.
- MW-22 is located in the east-southeast portion of the site in the shallow zone. Perchlorate increased in August 2022 to 1,330 µg/L compared to 1,060 µg/L in December 2021 and 484 µg/L in June 2021. The TCE concentration in MW-22 remained consistent at 380 µg/L in August 2022 with 380 µg/L in December 2021. Previous TCE concentrations include 220 µg/L in June 2021, 420 µg/L in December 2020, 400 µg/L in June 2020, 240 µg/L in December 2019, and 230 µg/L in June 2019. This variability in the TCE detection has been observed since 2013. MC remained below the detection limit.
- MW-23 is located in the south-central portion of the site in the shallow zone. Perchlorate detected in MW-23 decreased to 58,400 µg/L in August 2022 from concentrations of 81,600 µg/L in December 2021 and 76,800 µg/L in June 2021. Perchlorate concentrations have continued to decrease from a concentration of 80,000 µg/L in December 2019. TCE decreased to 2,600 µg/L from 3,100 µg/L in December 2021. The TCE concentration in August 2022 remained consistent with historical detections of 2,200 µg/L in June 2021, 2,800 µg/L in December 2020, 2,300 µg/L in June 2020, and 3,000 µg/L in December 2019. MC was not detected August 2022 and had previously remained below the detection limit since June 2015.
- Monitoring well 109 is located in the northeastern portion of the site in the shallow zone. Monitoring well 109, saw a decrease of perchlorate to 8,850 µg/L in August 2022 from 21,500 µg/L in December 2021 and 20,400 µg/L in June 2021. The June and December 2021 perchlorate detections are a marked increase from 4,350 µg/L in December 2020, and from the June 2020 concentration of 10,500 µg/L. Conversely, TCE increased to 890 µg/L in August 2022 from 120 µg/L in December 2021, 240 µg/L in June 2021, 400 µg/L in December of 2020, and 310 µg/L in June 2020. December 2019 saw a concentration of 400 µg/L, which was an increase compared to 130 µg/L in June 2019. TCE and perchlorate both fluctuate seasonally at this well. MC remained below the detection limit.

- Monitoring well 120 is located on the west side of the site in the shallow zone. Perchlorate in MW-120 decreased to 5,770 µg/L in August 2022 from 15,200 µg/L in December 2021, from 12,000 µg/L in June 2021, and from 13,600 µg/L in December 2020. The perchlorate levels are overall trending down. MC has remained below the detection limit since June 2015. TCE increased to 6,300 µg/L in August 2022 from 4,900 µg/L in December 2021. The TCE concentration in August 2022 remained below the December 2019 concentration of 9,200 µg/L. TCE concentrations continue on an overall downward trend.

As of August 2022, monitoring well MW-126 had no detections of TCE or MC and perchlorate was detected at a low concentration of 0.251 µg/L. This well confirms that the extent of groundwater contamination in the shallow zone is currently delineated to the south.

2.4.2.2 Wilcox Formation Trend Analysis

The following observations were made for the Wilcox Formation groundwater, based on the August 2022 groundwater monitoring results:

- C-03 is a Wilcox Formation well located northeast of the ICT containment area. Perchlorate decreased to 69.8 µg/L in August 2022 from 220 µg/L in December 2021. Perchlorate has decreased compared to 619 µg/L in September 2012. Historical perchlorate concentrations are 67.7 µg/L in June 2021, 0.970 J µg/L in December 2020, and 141 µg/L in June 2020. TCE was last detected at 0.491 µg/L in December 2019 and has remained non-detect since December 2019. MC has remained non-detect since December 2014.
- MW-14 is located inside the containment area in the Wilcox Formation. The concentration of perchlorate in MW-14 decreased to 106,000 µg/L in August 2022 compared to 164,000 µg/L in December 2021 and 198,000 µg/L in June 2021. Perchlorate has fluctuated historically, with recent detections including 73,800 µg/L in December 2020, 158,000 µg/L in June 2020, and 130,000 µg/L in December 2019. These levels reflect a seasonal fluctuation but are overall trending downward from a historical high concentration of 288,000 µg/L detected in December 2015. The concentration of TCE increased to 8,100 µg/L in August 2022 from 6,200 µg/L in December 2021. However, TCE concentrations in August 2022 decreased compared to 9,000 µg/L in June 2021, and overall TCE concentrations continue to trend downward at this well. MC remained below the detection limit.

In general, other than the changes observed above in perchlorate, TCE, and MC concentrations, the COC concentration trends indicate that the plumes are stable, supporting the conclusion that the extraction system is effective in minimizing contaminant transport off-site and reducing COC concentrations.

2.5 Groundwater Treatment Plant Sampling and Analysis

Sampling and analysis were conducted in accordance with the requirements specified in the Final Revised Sampling and Analysis Plan (AECOM Technical Services [AECOM], Inc., September 2017). Besides the sampling requirement established in the Record of Decision (ROD) for the Early Interim Remedial Action (USACE, May 1995) , additional sample analyses are typically performed

on the influent and effluent samples to monitor the effectiveness of the perchlorate treatment (FBR and/or IX vessels) process. Sections 2.5.1 through 2.5.4 present the results of analyses conducted during the 3rd Quarter of 2022. The complete laboratory results are provided in **Appendix F**.

2.5.1 Weekly Perchlorate Sampling

Table 7 presents the weekly effluent perchlorate results for the 3rd Quarter of 2022. Throughout the 3rd Quarter of 2022, the treated groundwater was processed through the IX vessels to provide additional water treatment for perchlorate prior to discharge to the INF Pond or Harrison Bayou. In the effluent samples collected during the 3rd Quarter of 2022, perchlorate was not detected above the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L). Furthermore, none of the perchlorate concentrations in any effluent samples discharged to the INF Pond exceeded the PCL (17 µg/L) during the 3rd Quarter 2022. The effluent perchlorate concentrations from samples collected after FBR treatment and before the first IX vessel (BIX), ranged from 0.0438 J µg/L (21 September 2022) to 48.8 µg/L (16 August 2022). The effluent perchlorate samples collected after the first IX vessel (AIX) ranged from not detected (6 July 2022) to 1.99 µg/L (9 August 2022). In general, FBR performance improved between July 2022 and the end of September 2022 resulting in lower perchlorate effluent concentrations after the inline pH probe was installed on 6 April 2022.

2.5.2 Monthly VOC Sampling

Tables 8, 9, and 10 present the effluent VOC results for July, August, and September 2022. Sampling of the effluent for VOCs was conducted on a biweekly basis. The tables also provide monthly influent concentrations for perchlorate. The monthly and biweekly effluent results from the 3rd Quarter 2022 were below the discharge limits.

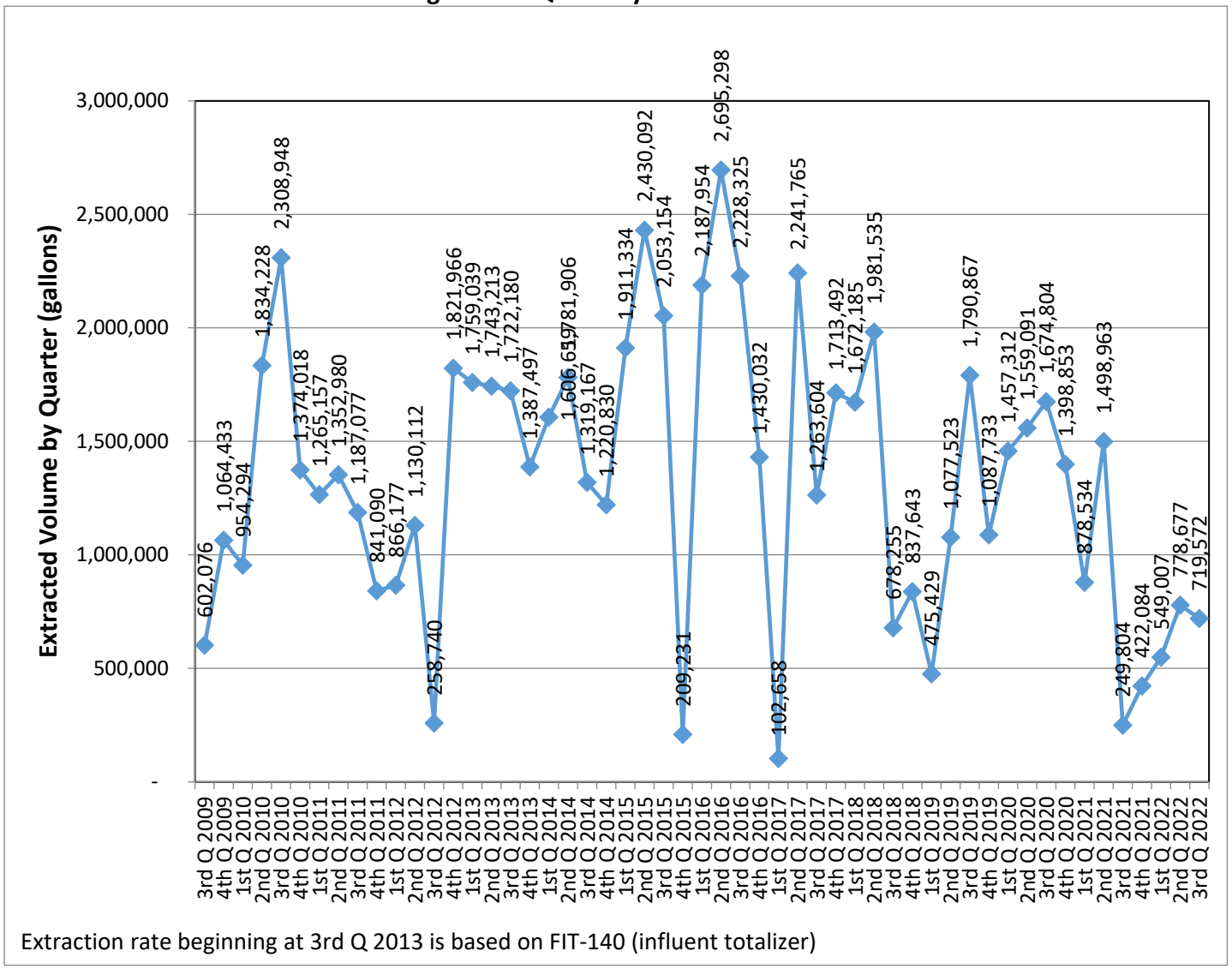
2.5.3 Monthly Metals Sampling

Tables 8, 9, and 10 present the monthly influent and effluent metals results for July, August, and September 2022. Sampling of the influent and effluent for metals is typically conducted on a monthly basis, per the Final Installation-Wide Work Plan (Bhate, May 2018). None of the metals exceeded the effluent discharge limits in the 3rd Quarter 2022.

2.5.4 Quarterly Sampling

Quarterly sampling of the effluent for VOCs, anions, chemical oxygen demand, oil and grease, perchlorate, and metals was conducted on 24 August 2022 during this quarter and the results were below the MCLs. **Table 11** presents the quarterly analytical results for the 3rd Quarter of 2022.

Figure 2-1. Quarterly Extraction Rate



Extraction rate beginning at 3rd Q 2013 is based on FIT-140 (influent totalizer)

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (ft) 07/26/2022	Groundwater Elevation (ft amsl) 07/26/2022	Depth to Water (ft) 08/31/2022	Groundwater Elevation (ft amsl) 08/31/2022	Depth to Water (ft) 09/28/2022	Groundwater Elevation (ft amsl) 09/28/2022
BGPZ-1	Piezometer	184.99	8.92	176.07	8.69	176.30	9.03	175.96
BGPZ-2	Piezometer	184.39	15.29	169.10	15.20	169.19	15.59	168.80
BGPZ-3	Piezometer	180.35	12.33	168.02	12.05	168.30	12.43	167.92
BGPZ-4	Piezometer	177.77	10.66	167.11	10.49	167.28	10.82	166.95
BGPZ-5	Piezometer	180.76	12.12	168.64	11.97	168.79	12.31	168.45
BGPZ-6	Piezometer	197.82	28.25	169.57	28.08	169.74	28.45	169.37
BGPZ-7	Piezometer	195.96	27.65	168.31	27.46	168.50	27.82	168.14
BGPZ-8	Piezometer	197.08	29.30	167.78	29.09	167.99	29.51	167.57
BGPZ-9	Piezometer	196.45	26.97	169.48	26.80	169.65	27.17	169.28
BGPZ-10	Piezometer	197.00	28.91	168.09	28.77	168.23	29.07	167.93
BGPZ-11	Piezometer	196.99	27.61	169.38	27.43	169.56	27.85	169.14
BGPZ-12	Piezometer	188.17	NA	Plugged	NA	Plugged	NA	Plugged
AWD-1	Monitoring Well	182.27	11.08	171.19	10.54	171.73	10.89	171.38
AWD-2	Monitoring Well	186.78	15.59	171.19	15.28	171.50	15.55	171.23
AWD-3	Monitoring Well	200.13	28.37	171.76	27.71	172.42	28.06	172.07
AWD-4	Monitoring Well	193.89	22.92	170.97	23.42	170.47	23.77	170.12
MW-1	Monitoring Well	199.22	25.51	173.71	26.88	172.34	27.19	172.03
MW-2	Monitoring Well	196.73	25.77	170.96	25.30	171.43	25.71	171.02
MW-3	Monitoring Well	196.54	26.88	169.66	26.58	169.96	26.89	169.65
MW-4	Monitoring Well	197.27	26.84	170.43	26.52	170.75	26.85	170.42
MW-5	Monitoring Well	194.97	25.55	169.42	25.39	169.58	25.74	169.23
MW-6	Monitoring Well	192.18	22.50	169.68	23.06	169.12	23.40	168.78
MW-7	Monitoring Well	188.47	18.93	169.54	18.33	170.14	18.71	169.76

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (ft) 07/26/2022	Groundwater Elevation (ft amsl) 07/26/2022	Depth to Water (ft) 08/31/2022	Groundwater Elevation (ft amsl) 08/31/2022	Depth to Water (ft) 09/28/2022	Groundwater Elevation (ft amsl) 09/28/2022
MW-8	Monitoring Well	187.13	17.03	170.10	16.95	170.18	17.33	169.80
MW-9	Monitoring Well	184.73	14.95	169.78	14.80	169.93	15.15	169.58
MW-10	Monitoring Well	178.12	10.67	167.45	9.36	168.76	9.70	168.42
MW-11	Monitoring Well	184.65	16.53	168.12	16.37	168.28	16.73	167.92
MW-12	Monitoring Well	178.33	10.70	167.63	9.72	168.61	10.03	168.30
MW-13	Monitoring Well	176.72	9.31	167.41	8.06	168.66	8.45	168.27
MW-14	Monitoring Well	186.19	14.40	171.79	14.93	171.26	15.27	170.92
MW-16	Monitoring Well	178.59	11.29	167.30	10.41	168.18	10.79	167.80
MW-17	Monitoring Well	179.03	11.02	168.01	10.31	168.72	10.72	168.31
MW-18	Monitoring Well	178.58	9.80	168.78	8.25	170.33	8.57	170.01
MW-19	Monitoring Well	178.60	9.61	168.99	8.95	169.65	9.36	169.24
MW-20	Monitoring Well	186.64	10.05	176.59	12.66	173.98	12.97	173.67
MW-21	Monitoring Well	198.70	29.53	169.17	28.70	170.00	29.02	169.68
MW-22	Monitoring Well	197.51	27.02	170.49	26.22	171.29	26.49	171.02
MW-23	Monitoring Well	198.79	27.51	171.28	26.78	172.01	27.07	171.72
101	Monitoring Well	197.53	11.98	185.55	11.55	185.98	11.90	185.63
102	Monitoring Well	193.94	20.54	173.40	20.39	173.55	20.75	173.19
109	Monitoring Well	197.02	27.72	169.30	27.03	169.99	27.41	169.61
120	Monitoring Well	184.19	13.92	170.27	13.18	171.01	13.45	170.74
123	Monitoring Well	186.21	13.69	172.52	13.51	172.70	13.90	172.31
125	Monitoring Well	196.28	27.37	168.91	25.33	170.95	25.70	170.58
126	Monitoring Well	199.37	28.88	170.49	28.55	170.82	28.92	170.45
129	Monitoring Well	197.24	27.96	169.28	25.79	171.45	26.03	171.21

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (ft) 07/26/2022	Groundwater Elevation (ft amsl) 07/26/2022	Depth to Water (ft) 08/31/2022	Groundwater Elevation (ft amsl) 08/31/2022	Depth to Water (ft) 09/28/2022	Groundwater Elevation (ft amsl) 09/28/2022
130	Monitoring Well	177.73	9.39	168.34	7.86	169.87	8.12	169.61
C-01	Monitoring Well	193.89	23.65	170.24	23.55	170.34	23.88	170.01
C-02	Monitoring Well	175.95	10.12	165.83	6.95	169.00	7.37	168.58
C-03	Monitoring Well	196.34	27.42	168.92	27.03	169.31	27.41	168.93
C-04	Monitoring Well	194.64	25.83	168.81	25.83	168.81	26.20	168.44
C-04A	Monitoring Well	194.61	25.52	169.09	25.45	169.16	25.81	168.80
C-05	Monitoring Well	180.74	14.69	166.05	14.60	166.14	14.98	165.76
C-06	Monitoring Well	192.22	25.75	166.47	26.27	165.95	26.65	165.57
C-07	Monitoring Well	196.80	28.54	168.26	28.40	168.40	28.77	168.03
C-08	Monitoring Well	193.10	23.72	169.38	22.85	170.25	23.13	169.97
C-09	Monitoring Well	202.35	32.41	169.94	32.00	170.35	32.31	170.04
C-10	Monitoring Well	201.86	32.87	168.99	32.51	169.35	32.80	169.06
17WW08	Monitoring Well	179.72	11.08	168.64	9.79	169.93	10.09	169.63
18WW01	Monitoring Well	201.31	NA	Plugged	NA	Plugged	NA	Plugged
18WW02	Monitoring Well	179.30	10.43	168.87	10.03	169.27	10.40	168.90
18WW03	Monitoring Well	195.59	25.51	170.08	26.29	169.30	26.64	168.95
18WW04	Monitoring Well	183.74	17.97	165.77	17.80	165.94	18.16	165.58
18WW05	Monitoring Well	189.59	23.68	165.91	23.51	166.08	23.87	165.72
18WW06	Monitoring Well	179.70	10.98	168.72	11.00	168.70	11.35	168.35
18WW07	Monitoring Well	183.67	NM	NM	NM	NM	NM	NM
18WW08	Monitoring Well	177.77	11.58	166.19	11.57	166.20	11.82	165.95
18WW09	Monitoring Well	177.51	10.51	167.00	9.40	168.11	9.76	167.75
18WW10	Monitoring Well	182.26	15.03	167.23	14.50	167.76	14.84	167.42

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (ft) 07/26/2022	Groundwater Elevation (ft amsl) 07/26/2022	Depth to Water (ft) 08/31/2022	Groundwater Elevation (ft amsl) 08/31/2022	Depth to Water (ft) 09/28/2022	Groundwater Elevation (ft amsl) 09/28/2022
18WW11	Monitoring Well	182.29	15.25	167.04	14.78	167.51	15.07	167.22
18WW14	Monitoring Well	186.47	16.51	169.96	16.75	169.72	17.07	169.40
18WW15	Monitoring Well	186.24	15.92	170.32	16.02	170.22	16.40	169.84
18WW16	Monitoring Well	201.88	NA	Plugged	NA	Plugged	NA	Plugged
18WW18	Monitoring Well	196.82	28.55	168.27	27.70	169.12	28.05	168.77
18WW19	Monitoring Well	179.56	12.73	166.83	12.62	166.94	12.98	166.58
18WW20	Monitoring Well	180.42	13.29	167.13	13.42	167.00	13.80	166.62
18WW21	Monitoring Well	195.20	27.54	167.66	27.31	167.89	27.70	167.50
18WW22	Monitoring Well	195.37	27.08	168.29	26.63	168.74	26.97	168.40
18WW24	Monitoring Well	176.40	10.81	165.59	10.00	166.40	10.33	166.07
18WW25	Monitoring Well	175.15	10.47	164.68	9.75	165.40	10.02	165.13
18CPTMW01SW	Monitoring Well	198.20	26.03	172.17	27.84	170.36	28.11	170.09
18CPTMW01DW	Monitoring Well	197.92	29.01	168.91	28.58	169.34	28.90	169.02
18CPTMW03SW	Monitoring Well	198.53	29.08	169.45	29.31	169.22	29.68	168.85
18CPTMW04	Monitoring Well	196.60	24.93	171.67	24.22	172.38	24.60	172.00
18CPTMW04SW	Monitoring Well	196.42	27.84	168.58	27.42	169.00	27.76	168.66
18CPTMW06	Monitoring Well	198.12	28.99	169.13	28.89	169.23	29.17	168.95
18CPTMW07	Monitoring Well	197.32	27.18	170.14	28.28	169.04	28.63	168.69
18CPTMW08SW	Monitoring Well	196.38	27.59	168.79	27.22	169.16	27.37	169.01
18CPTMW08DW	Monitoring Well	196.59	28.37	168.22	28.10	168.49	28.46	168.13
18CPTMW10SW	Monitoring Well	186.98	17.65	169.33	17.55	169.43	17.84	169.14
18CPTMW10DW	Monitoring Well	187.38	18.97	168.41	18.42	168.96	18.78	168.60
18CPTMW12SW	Monitoring Well	190.90	21.88	169.02	21.62	169.28	21.99	168.91

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (ft) 07/26/2022	Groundwater Elevation (ft amsl) 07/26/2022	Depth to Water (ft) 08/31/2022	Groundwater Elevation (ft amsl) 08/31/2022	Depth to Water (ft) 09/28/2022	Groundwater Elevation (ft amsl) 09/28/2022
18CPTMW12DW	Monitoring Well	190.25	21.54	168.71	21.00	169.25	21.39	168.86
18CPTMW14	Monitoring Well	196.69	26.41	170.28	25.60	171.09	25.96	170.73
18CPTMW15	Monitoring Well	179.79	11.68	168.11	12.18	167.61	12.55	167.24
18CPTMW16	Monitoring Well	175.37	9.09	166.28	8.83	166.54	9.16	166.21
18CPTMW18	Monitoring Well	194.53	29.31	165.22	26.07	168.46	26.41	168.12
18CPTMW19	Monitoring Well	193.59	23.75	169.84	23.50	170.09	23.86	169.73
18CPTMW19SW	Monitoring Well	193.29	24.37	168.92	25.84	167.45	26.18	167.11
18CPTMW22SW	Monitoring Well	187.79	18.90	168.89	18.52	169.27	18.90	168.89
18CPTMW22R	Monitoring Well	187.23	11.72	175.51	12.52	174.71	12.87	174.36
18CPTMW22DW	Monitoring Well	188.00	19.71	168.29	18.37	169.63	18.75	169.25
18CPTMW23	Monitoring Well	177.47	10.11	167.36	9.77	167.70	10.04	167.43
18CPTMW23SW	Monitoring Well	177.43	10.05	167.38	9.13	168.30	9.39	168.04
18CPTMW24	Monitoring Well	194.89	23.77	171.12	25.20	169.69	25.57	169.32
18CPTMW26	Monitoring Well	182.60	18.52	164.08	18.29	164.31	18.65	163.95
18CPTMW26SW	Monitoring Well	182.00	14.11	167.89	12.47	169.53	12.84	169.16
1824HBSW7	Surface Water Sample	167.92	0.13	168.05	1.55	169.47	0.36	168.28

Table 4. Treated Groundwater Discharged – July through September 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
07/01/2022	NA	NA	0	0	0	0	3.18
07/02/2022	NA	NA	0	0	0	0	3.21
07/03/2022	NA	NA	0	0	0	0	3.25
07/04/2022	NA	NA	0	0	0	0	3.28
07/05/2022*	NA	NA	0	0	40,071	0	3.31
07/06/2022	NA	NA	0	0	9,342	0	3.36
07/07/2022	NA	NA	0	0	13,612	0	3.40
07/08/2022	NA	NA	0	0	1,861	0	3.39
07/09/2022	NA	NA	0	0	0	0	3.43
07/10/2022	NA	NA	0	0	0	0	3.47
07/11/2022*	NA	NA	0	0	33,472	0	3.51
07/12/2022	NA	NA	0	0	7,237	0	3.54
07/13/2022	NA	NA	0	0	6,215	0	3.57
07/14/2022	NA	NA	0	0	2,844	0	3.58
07/15/2022	NA	NA	0	0	2,379	0	3.60
07/16/2022	NA	NA	0	0	0	0	3.65
07/17/2022	NA	NA	0	0	0	0	3.69
07/18/2022*	NA	NA	0	0	31,459	0	3.74
07/19/2022	NA	NA	0	0	6,145	0	3.77
07/20/2022	NA	NA	0	0	5,152	0	3.80
07/21/2022	NA	NA	0	0	4,129	0	3.83
07/22/2022	NA	NA	0	0	0	0	3.86
07/23/2022	NA	NA	0	0	0	0	3.89
07/24/2022	NA	NA	0	0	0	0	3.92
07/25/2022*	NA	NA	0	0	20,728	0	3.95
07/26/2022	NA	NA	0	0	3,841	0	3.97

Table 4. Treated Groundwater Discharged – July through September 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
07/27/2022	NA	NA	0	0	4,462	0	4.00
07/28/2022	NA	NA	0	0	2,983	0	4.02
07/29/2022	NA	NA	0	0	7,316	0	4.05
07/30/2022	NA	NA	0	0	0	0	0.00
07/31/2022	NA	NA	0	0	0	0	0.00
08/01/2022*	NA	NA	0	0	18,093	0	4.14
08/02/2022	NA	NA	0	0	2,106	0	4.15
08/03/2022	NA	NA	0	0	9,207	0	4.18
08/04/2022	NA	NA	0	0	4,071	0	4.20
08/05/2022	NA	NA	0	0	2,460	0	4.22
08/06/2022	NA	NA	0	0	0	0	4.24
08/07/2022	NA	NA	0	0	0	0	4.28
08/08/2022*	NA	NA	0	0	25,067	0	4.31
08/09/2022	NA	NA	0	0	8,800	0	4.40
08/10/2022	NA	NA	0	0	4,327	0	4.58
08/11/2022	NA	NA	0	0	2,319	0	4.50
08/12/2022	NA	NA	0	0	1,104	0	4.51
08/13/2022	NA	NA	0	0	0	0	4.54
08/14/2022	NA	NA	0	0	0	0	4.57
08/15/2022*	NA	NA	0	0	25,307	0	4.61
08/16/2022	NA	NA	0	0	7,590	0	4.64
08/17/2022	NA	NA	0	0	4,978	0	4.66
08/18/2022	NA	NA	0	0	3,969	0	4.68
08/19/2022	NA	NA	0	0	1,413	0	4.71
08/20/2022	NA	NA	0	0	0	0	4.74
08/21/2022	NA	NA	0	0	0	0	4.77

Table 4. Treated Groundwater Discharged – July through September 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
08/22/2022*	NA	NA	0	0	28,498	0	5.23
08/23/2022	NA	NA	0	0	651	0	5.51
08/24/2022	NA	NA	0	0	7,052	0	5.55
08/25/2022	NA	NA	0	0	5,124	0	5.58
08/26/2022	1,437	299	612	0	0	612	5.58
08/27/2022	1,289	268	0	0	0	0	5.57
08/28/2022	1,128	234	0	0	0	0	5.57
08/29/2022*	1,009	210	22,696	0	0	22,696	5.56
08/30/2022	780	162	1,215	0	0	1,215	5.55
08/31/2022	653	136	9,592	0	0	9,592	5.54
09/01/2022	497	103	8,187	0	0	8,187	5.53
09/02/2022	381	79	0	0	0	0	5.52
09/03/2022	869	180	0	0	0	0	5.55
09/04/2022	726	151	0	0	0	0	5.54
09/05/2022	619	128	0	0	0	0	5.52
09/06/2022*	534	111	28,950	0	0	28,950	5.53
09/07/2022	470	98	9,831	0	0	9,831	5.52
09/08/2022	411	85	8,490	0	0	8,490	5.50
09/09/2022	354	73	1,087	0	0	1,087	5.49
09/10/2022	275	57	0	0	0	0	5.47
09/11/2022	189	39	0	0	0	0	5.45
09/12/2022*	136	28	26,767	0	0	26,767	5.43
09/13/2022	NA	NA	0	0	3,128	0	5.43
09/14/2022	NA	NA	0	0	12,889	0	5.45
09/15/2022	NA	NA	0	0	7,882	0	5.47
09/16/2022	NA	NA	0	0	0	0	5.48

Table 4. Treated Groundwater Discharged – July through September 2022

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
09/17/2022	NA	NA	0	0	0	0	5.49
09/18/2022	NA	NA	0	0	0	0	5.50
09/19/2022*	NA	NA	0	0	10,001	0	5.51
09/20/2022	NA	NA	0	0	1,205	0	5.52
09/21/2022	NA	NA	0	0	9,785	0	5.55
09/22/2022	NA	NA	0	0	6,501	0	5.57
09/23/2022	NA	NA	0	0	0	0	5.56
09/24/2022	NA	NA	0	0	0	0	5.59
09/25/2022	NA	NA	0	0	0	0	5.62
09/26/2022*	NA	NA	0	0	28,685	0	5.65
09/27/2022	NA	NA	0	0	2,299	0	5.66
09/28/2022	NA	NA	0	0	10,282	0	5.69
09/29/2022	NA	NA	0	0	6,149	0	5.71
09/30/2022	NA	NA	0	0	1,589	0	5.72
Total			117,427	0	465,779	117,427	

Notes: The maximum discharge rate from the INF Pond is 170 gpm and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
NM = Not measured
Treated groundwater volume released over the weekend is included in the total for the next working day. These dates are marked with an asterisk (*).

Table 5. Monthly Groundwater Extraction Quantities – July through September 2022

ICT or Well Number	July 2022 (gallons)	August 2022 (gallons)	September 2022 (gallons)	Total
1	0	0	0	0
2	5,071	3,633	307	9,011
3	0	0	0	0
4	33,652	22,712	17,270	73,634
5	0	0	0	0
EW-01	15	1	15	31
7	4,120	2,095	1,565	7,780
8	15,138	69,625	24,604	109,367
18WW17	4,303	1,989	3,190	9,482
10	0	0	0	0
11	18,044	16,861	11,718	46,623
12A	1,576	820	3,467	5,863
12B	20,950	11,660	9,308	41,918
12C	15,977	8,765	8,201	32,943
12D	19,805	7,808	1,188	28,801
12E	12,464	8,711	9,250	30,425
13A	2,959	1,772	314	5,045
13B	17,046	8,891	8,757	34,694
13C	1,300	635	562	2,497
13D	9,601	6,006	5,242	20,849
13E	2,906	2,882	2,093	7,881
13F	759	1,456	501	2,716
13G	0	0	0	0
14A	722	399	338	1,459
14B	6,183	3,082	3,085	12,350
14C	27,258	13,777	13,857	54,892
14D	25,600	19,310	440	45,350
14E	10,982	4,993	5,369	21,344
LHAAP-18/24 Total	***256,431***	***217,883***	***130,641***	***604,955***
gpd	8,272	7,028	4,355	6,576
LHAAP-17 Total	**0**	**54,782**	**66,629**	**121,411**
gpd	0	2,107	2,221	2,168

Notes:
gpd – gallons per day
ICTs 6 and 9 were converted from extraction to infiltration trenches beginning 18 September 2007.
ICTs 1, 3, 5, and 10 were deactivated on 18 February 2008 as part of a pilot study for system optimization.
Low production in EW-01 due to low water table. ICT 13G is dry and no longer active.
ICT 7 electrical issue was repaired on 6 April 2022.
ICT 13E flowmeter replaced on 6 April 2022.
ICT 13B new pump installed on 7 June 2022.

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Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	AWD1_080922 8/9/22	AWD3_081622 8/16/22	AWD3_081622_a 8/16/22	AWD4_081722 8/17/22	18CPTMW01DW_0 80822 8/8/22	18CPTMW01SW_0 80822 8/8/22	18CPTMW03SW_ 081522 8/15/22	18CPTMW04_08 1022 8/10/22	18CPTMW04SW_ 081022 8/10/22	18CPTMW06_08 1122 8/11/22	18CPTMW07_08 1822 8/18/22	18CPTMW08SW_ 080922 8/9/22	18CPTMW08DW_ 080922 8/9/22	18CPTMW10SW_ 082322 8/23/22	18CPTMW10DW_ 082322 8/23/22	18CPTMW12SW_ 081922 8/19/22	18CPTMW12SW_ 081922_a 8/19/22	18CPTMW12DW_ 081922 8/19/22	18CPTMW14_081 922 8/19/22	18CPTMW15_0 81522 8/15/22
Aquifer Zone:			Shallow	Shallow		Shallow	Wilcox	Wilcox	Wilcox	Shallow	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Shallow	Shallow
Lab Package:			HS22080499	HS22080927	HS22080927	HS22081026	HS22080522	HS22080522	HS22080933	HS22080611	HS22080611	HS22080695	HS22081097	HS22080499	HS22080499	HS22081311	HS22081311	HS22081120	HS22081120	HS22081120	HS22081120	HS22080933
Well Identification:			AWD-1	AWD-3	AWD-3	AWD-4	18CPTMW01DW	18CPTMW01SW	18CPTMW03SW	18CPTMW04	18CPTMW04SW	18CPTMW06	18CPTMW07	18CPTMW08SW	18CPTMW08DW	18CPTMW10SW	18CPTMW10DW	18CPTMW12SW	18CPTMW12SW	18CPTMW12DW	18CPTMW14	18CPTMW15
Perchlorate (6850)																						
Perchlorate	µg/L	17*	NA	**42.3**	**41.8**	**776**	**0.0383 J**	**0.0266 J**	**0.204**	**111**	< 0.0500 U	< 0.0500 U	< 0.0500 U	**13,800**	**4,930**	< 0.0500 U	< 0.0500 U	**5.18**	**5.96**	**0.0577 J**	**5,210**	**0.0750 J**
Volatile Organic Compounds (8260C)																						
1,1,1,2-Tetrachloroethane	µg/L	110	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
1,1,2,2-Tetrachloroethane	µg/L	14	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**3.3**	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
1,1-Dichloroethene	µg/L	7	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromoethane	µg/L	0.05	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	NA	**8.7 J**	**8.7 J**	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	**0.66 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**10**	< 0.50 U
1,2-Dichloropropane	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
2-Butanone	µg/L	61,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	NA	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	NA	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U
Acetone	µg/L	92,000	NA	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U
Benzene	µg/L	5	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	**1.3**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U
Bromobenzene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	**19**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
Bromoform	µg/L	36	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Bromomethane	µg/L	140	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	NA	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 5.0 U	< 2.0 U
Carbon tetrachloride	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Chlorobenzene	µg/L	100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Chloroethane	µg/L	41,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Chloroform	µg/L	1,000	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**18**	< 0.50 U
Chloromethane	µg/L	220	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	NA	**70**	**71**	**1.5**	**2.2**	**1,700**	**37**	**11**	< 0.50 U	< 0.50 U	< 0.50 U	**9.0**	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**8.4**	< 0.50 U
cis-1,3-Dichloropropene	µg/L	5.3	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
Dibromochloromethane	µg/L	34	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Dibromomethane	µg/L	380	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Ethylbenzene	µg/L	700	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Methylene chloride	µg/L	5	NA	< 20 U	< 20 U	< 2.0 U	< 2.0 U	**11,000**	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U
Naphthalene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Styrene	µg/L	100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Toluene	µg/L	1,000	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	**1.0**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U
Trichloroethene	µg/L	5	NA	**630**	**650**	**2.9**	**0.55 J**	**91**	**3.4**	**240**	< 0.50 U	**2.1**	< 0.50 U	**35**	NA	**3.0**	**1.1**	**1.6**	**1.7**	< 0.50 U	**1,600**	**1.5**
Trichlorofluoromethane	µg/L	31,000	NA	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U
Vinyl chloride	µg/L	2	NA	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.57 J**	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	AWD1_080922 8/9/22	AWD3_081622 8/16/22	AWD3_081622_a 8/16/22	AWD4_081722 8/17/22	18CPTMW01DW_0 80822 8/8/22	18CPTMW01SW_0 80822 8/8/22	18CPTMW03SW_ 081522 8/15/22	18CPTMW04_08 1022 8/10/22	18CPTMW04SW_ 081022 8/10/22	18CPTMW06_08 1122 8/11/22	18CPTMW07_08 1822 8/18/22	18CPTMW08SW_ 080922 8/9/22	18CPTMW08DW_ 080922 8/9/22	18CPTMW10SW_ 082322 8/23/22	18CPTMW10DW_ 082322 8/23/22	18CPTMW12SW_ 081922 8/19/22	18CPTMW12SW_ 081922_a 8/19/22	18CPTMW12DW_ 081922 8/19/22	18CPTMW14_081 922 8/19/22	18CPTMW15_0 81522 8/15/22
Aquifer Zone:			Shallow	Shallow		Shallow	Wilcox	Wilcox	Wilcox	Shallow	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Shallow	Shallow
Metals (6020A/7470A)																						
Aluminum	mg/L	100	NA	**0.107 J**	**0.0486 J**	**2.81**	**0.0208**	0.0242 UB	**0.0458**	NA	**0.145**	NA	NA	NA	NA	NA	**0.132**	**0.0627 J**	**0.0443 J**	0.0128 UB	**0.173**	NA
Antimony	mg/L	0.006	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.000413 J**	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA
Arsenic	mg/L	0.01	NA	< 0.00125 U	< 0.00125 U	**0.00140 J**	**0.000865 J**	**0.00747**	**0.00284 J**	NA	**0.00401 J**	NA	NA	NA	NA	NA	**0.00160 J**	**0.00149 J**	**0.00135 J**	**0.00208 J**	**0.00168 J**	NA
Barium	mg/L	2	NA	**0.0549**	**0.0517**	**0.228**	**0.375**	**1.19**	**0.594**	NA	**0.958**	NA	NA	NA	NA	NA	**0.538**	**1.01**	**0.949**	**0.376**	**3.31**	NA
Beryllium	mg/L	0.004	NA	< 0.000500 U	< 0.000500 U	**0.000469 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Cadmium	mg/L	0.005	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000220 J**	NA
Calcium	mg/L	NV	NA	**1.72**	**1.57**	**8.11**	**30.0**	**38.1**	**122**	NA	**30.1**	NA	NA	NA	NA	NA	**93.3**	**72.9**	**69.8**	**40.2**	**373**	NA
Chromium	mg/L	0.1	NA	**0.117 J**	**0.0833 J**	**0.446**	**0.00426 J**	**0.00230 J**	**0.0121**	NA	**0.0146**	NA	NA	NA	NA	NA	**0.00454 J**	**0.0116**	**0.0101**	**0.00433 J**	**0.0296**	NA
Cobalt	mg/L	6.1	NA	**0.000309 J**	**0.000267 J**	**0.0137**	**0.000303 J**	**0.000832 J**	**0.00309 J**	NA	**0.00750**	NA	NA	NA	NA	NA	**0.000280 J**	**0.00220 J**	**0.00187 J**	**0.000625 J**	**0.00295 J**	NA
Copper	mg/L	1.3	NA	< 0.00250 U	< 0.00250 U	**0.0159**	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	< 0.00250 U	NA	NA	NA	NA	NA	**0.00134 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA
Iron	mg/L	NV	NA	**0.503 J**	**0.349 J**	**14.1**	**0.238**	**45.1**	**7.90**	NA	**12.8**	NA	NA	NA	NA	NA	**14.0**	**4.22**	**3.36**	**6.10**	**0.559**	NA
Lead	mg/L	0.015	NA	< 0.00125 U	< 0.00125 U	**0.00262 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA
Magnesium	mg/L	NV	NA	**1.08**	**1.01**	**5.44**	**13.6**	**22.6**	**18.3**	NA	**17.8**	NA	NA	NA	NA	NA	**14.0**	**40.6**	**39.1**	**15.0**	**103**	NA
Manganese	mg/L	1.1*	NA	**0.00406 J**	**0.00312 J**	**0.103**	**0.0194**	**0.647**	**0.729**	NA	**0.611**	NA	NA	NA	NA	NA	**0.403**	**0.150**	**0.124**	**0.317**	**0.168**	NA
Nickel	mg/L	0.49*	NA	**0.0437**	**0.0408**	**0.894**	**0.00313 J**	**0.00177 J**	**0.00709**	NA	**0.00591**	NA	NA	NA	NA	NA	**0.00136 J**	**0.00229 J**	**0.00210 J**	**0.00112 J**	**0.00302 J**	NA
Potassium	mg/L	NV	NA	**0.738**	**0.682**	**1.25**	**103**	**11.1**	**96.3**	NA	**101**	NA	NA	NA	NA	NA	**68.8**	**34.0**	**32.5**	**53.4**	**8.88**	NA
Selenium	mg/L	0.05	NA	**0.00420 J**	**0.00332 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	< 0.00250 U	NA	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA
Silver	mg/L	0.51	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Sodium	mg/L	NV	NA	**39.7**	**36.7**	**48.0**	**490**	**104**	**211**	NA	**132**	NA	NA	NA	NA	NA	**170**	**276**	**262**	**196**	**638**	NA
Thallium	mg/L	0.002	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Vanadium	mg/L	0.72	NA	< 0.00125 U	< 0.00125 U	**0.0230**	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.00118 J**	NA
Zinc	mg/L	31	NA	**0.00419 J**	< 0.00250 U	**0.0306**	**0.00312 J**	**0.00303 J**	**0.00949**	NA	**0.0293**	NA	NA	NA	NA	NA	**0.00393 J**	**0.00840**	**0.00662**	**0.00772**	**0.00388 J**	NA
Mercury	mg/L	0.002	NA	< 0.000050 U	< 0.000050 U	**0.00010 J**	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA	< 0.000050 U	NA	NA	NA	NA	NA	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA
1,4-Dioxane (8270 SIM)																						
1,4-Dioxane	µg/L	9.1	**6.9**	NA	NA	**0.088**	**1.7**	**0.42**	**0.37**	**1.5**	**0.13**	**0.13**	**0.17**	**0.89**	**0.42**	**0.11**	NA	**0.13 J**	**0.28 J**	**0.14**	**1.1**	**0.23**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/PCL	18CPTMW16_081922 8/19/22	18CPTMW18_081222 8/12/22	18CPTMW19_081122 8/11/22	18CPTMW19SW_081122 8/11/22	18CPTMW22R_081822 8/18/22	18CPTMW22SW_081822 8/18/22	18CPTMW22DW_081822 8/18/22	18CPTMW23_080822 8/8/22	18CPTMW23SW_080822 8/8/22	18CPTMW24_081822 8/18/22	8CPTMW26SW_081822 8/18/22	17WW08_080822 8/8/22	17WW08_08082 2_a 8/8/22	18WW02_081022 8/10/22	18WW03_081622 8/16/22	18WW06_081022 8/10/22	18WW08_081122 8/11/22	18WW09_081122 8/11/22	18WW10_080922 8/9/22	18WW14_081722 8/17/22
Aquifer Zone:			Shallow	Shallow	Shallow	Wilcox	Shallow	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox	Shallow	Shallow	Wilcox	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox
Lab Package:			HS22081120	HS22080752	HS22080695	HS22080695	HS22081097	HS22081097	HS22081097	HS22080522	HS22080522	HS22081097	HS22081097	HS22080522	HS22080522	HS22080611	HS22080927	HS22080611	HS22080695	HS22080695	HS22080499	HS22081026
Well Identification:			18CPTMW16	18CPTMW18	18CPTMW19	18CPTMW19SW	18CPTMW22R	18CPTMW22SW	18CPTMW22DW	18CPTMW23	18CPTMW23SW	18CPTMW24	18CPTMW26SW	17WW08	17WW08	18WW02	18WW03	18WW06	18WW08	18WW09	18WW10	18WW14
Perchlorate (6850)																						
Perchlorate	µg/L	17*	**0.0632 J**	**0.0419 J**	**1.81**	**0.513**	**0.0692 J**	**11,400**	< 0.0500 U	**2.98**	< 0.0500 U	**8.97**	**0.0489 J**	**0.119**	**0.138**	< 0.0500 U	**0.0307 J**	< 0.0500 U	**20,000**	**0.0937 J**	**0.0340 J**	**0.751**
Volatile Organic Compounds (8260C)																						
1,1,1,2-Tetrachloroethane	µg/L	110	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,1,1-Trichloroethane	µg/L	200	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
1,1,2,2-Tetrachloroethane	µg/L	14	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,1,2-Trichloroethane	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,1-Dichloroethane	µg/L	10,000	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.80 J**	NA	< 0.50 U	NA
1,1-Dichloroethene	µg/L	7	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**3.2 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
1,1-Dichloropropene	µg/L	2.9	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2,3-Trichlorobenzene	µg/L	310	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2,3-Trichloropropane	µg/L	0.041	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2,4-Trichlorobenzene	µg/L	70	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2,4-Trimethylbenzene	µg/L	5,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2-Dibromo-3-chloropropane	µg/L	0.2	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2-Dibromoethane	µg/L	0.05	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
1,2-Dichlorobenzene	µg/L	600	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,2-Dichloroethane	µg/L	5	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**100**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
1,2-Dichloropropane	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,3,5-Trimethylbenzene	µg/L	5,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,3-Dichlorobenzene	µg/L	3,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,3-Dichloropropane	µg/L	29	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
1,4-Dichlorobenzene	µg/L	75	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
2,2-Dichloropropane	µg/L	42	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
2-Butanone	µg/L	61,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
2-Chlorotoluene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
2-Hexanone	µg/L	6,100	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA
4-Chlorotoluene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
4-Isopropyltoluene	µg/L	10,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
4-Methyl-2-pentanone	µg/L	8,200	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA
Acetone	µg/L	92,000	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	**9.3**	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA
Benzene	µg/L	5	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Bromobenzene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Bromochloromethane	µg/L	4,100	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Bromodichloromethane	µg/L	4.6	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Bromoform	µg/L	36	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Bromomethane	µg/L	140	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Carbon disulfide	µg/L	10,000	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA
Carbon tetrachloride	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Chlorobenzene	µg/L	100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Chloroethane	µg/L	41,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Chloroform	µg/L	1,000	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Chloromethane	µg/L	220	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
cis-1,2-Dichloroethene	µg/L	70	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**240**	< 0.50 U	**15**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**3.6**	NA	< 0.50 U	NA
cis-1,3-Dichloropropene	µg/L	5.3	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Dibromochloromethane	µg/L	34	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Dibromomethane	µg/L	380	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Dichlorodifluoromethane	µg/L	20,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Ethylbenzene	µg/L	700	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Hexachlorobutadiene	µg/L	20	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Isopropylbenzene	µg/L	10,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
m,p-Xylene	µg/L	10,000**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Methylene chloride	µg/L	5	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA
Naphthalene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
n-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
n-Propylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
o-Xylene	µg/L	10,000**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
sec-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Styrene	µg/L	100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
tert-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Tetrachloroethene	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Toluene	µg/L	1,000	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
trans-1,2-Dichloroethene	µg/L	100	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
trans-1,3-Dichloropropene	µg/L	29	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	NA	< 0.50 U	NA
Trichloroethene	µg/L	5	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.75 J**	< 0.50 U	**580**	< 0.50 U	**11**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.1**	**14**	NA	< 0.50 U	NA
Trichlorofluoromethane	µg/L	31,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA
Vinyl chloride	µg/L	2	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	**33**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**3.3**	NA	< 0.50 U	NA

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	18CPTMW16_081922 8/19/22	18CPTMW18_081222 8/12/22	18CPTMW19_081122 8/11/22	18CPTMW19SW_081122 8/11/22	18CPTMW22R_081822 8/18/22	18CPTMW22SW_081822 8/18/22	18CPTMW22DW_081822 8/18/22	18CPTMW23_080822 8/8/22	18CPTMW23SW_080822 8/8/22	18CPTMW24_081822 8/18/22	8CPTMW26SW_081822 8/18/22	17WW08_080822 8/8/22	17WW08_080822_a 8/8/22	18WW02_081022 8/10/22	18WW03_081622 8/16/22	18WW06_081022 8/10/22	18WW08_081122 8/11/22	18WW09_081122 8/11/22	18WW10_080922 8/9/22	18WW14_081722 8/17/22
Aquifer Zone:			Shallow	Shallow	Shallow	Wilcox	Shallow	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox	Shallow	Shallow	Wilcox	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox
Metals (6020A/7470A)																						
Aluminum	mg/L	100	NA	0.0270 UB	NA	**0.0741**	**6.94**	**0.0873**	**0.0439**	NA	NA	NA	NA	**0.0360**	**0.0378**	**0.150**	**0.0189**	NA	NA	**0.692**	NA	**0.0326**
Antimony	mg/L	0.006	NA	< 0.00125 U	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U
Arsenic	mg/L	0.01	NA	**0.000852 J**	NA	**0.00994**	**0.00198 J**	**0.00161 J**	**0.00823**	NA	NA	NA	NA	**0.00628**	**0.00656**	**0.000710 J**	**0.00196 J**	NA	NA	**0.00587**	NA	< 0.00125 U
Barium	mg/L	2	NA	**0.697**	NA	**0.152**	**0.118**	**0.178**	**0.133**	NA	NA	NA	NA	**0.631**	**0.669**	**0.0424**	**0.317**	NA	NA	**0.255**	NA	**0.709**
Beryllium	mg/L	0.004	NA	< 0.000500 U	NA	< 0.000500 U	**0.000650 J**	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000307 J**	NA	NA	< 0.000500 U	NA	< 0.000500 U
Cadmium	mg/L	0.005	NA	**0.000795 J**	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	**0.000661 J**	NA	**0.000498 J**
Calcium	mg/L	NV	NA	**297**	NA	**9.05**	**1.67**	**23.1**	**15.0**	NA	NA	NA	NA	**117**	**124**	**7.16**	**10.4**	NA	NA	**16.9**	NA	**32.6**
Chromium	mg/L	0.1	NA	**0.00228 J**	NA	**0.00162 J**	**0.00736**	**0.0679**	0.000790 UB	NA	NA	NA	NA	**1.17**	**1.38**	**0.0142**	**0.0234**	NA	NA	**0.0624**	NA	**0.136**
Cobalt	mg/L	6.1	NA	**0.00654**	NA	**0.00297 J**	**0.00880**	< 0.000500 U	**0.000601 J**	NA	NA	NA	NA	**0.0169**	**0.0183**	**0.000185 J**	**0.000138 J**	NA	NA	**0.00144 J**	NA	**0.00380 J**
Copper	mg/L	1.3	NA	< 0.00250 U	NA	**0.00110 J**	**0.00517**	**0.00172 J**	< 0.00250 U	NA	NA	NA	NA	**0.0161**	**0.0182**	**0.00210 J**	**0.00222 J**	NA	NA	**0.00282 J**	NA	**0.00581**
Iron	mg/L	NV	NA	**0.663**	NA	**9.56**	**7.21**	**0.0526 J**	**5.26**	NA	NA	NA	NA	**20.3**	**21.7**	**0.829**	**21.1**	NA	NA	**39.6**	NA	**0.697**
Lead	mg/L	0.015	NA	< 0.00125 U	NA	< 0.00125 U	**0.00377 J**	< 0.00125 U	< 0.00125 U	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	**0.00120 J**	NA	< 0.00125 U
Magnesium	mg/L	NV	NA	**188**	NA	**4.94**	**1.85**	**0.335**	**6.94**	NA	NA	NA	NA	**72.9**	**78.2**	**1.25**	**6.86**	NA	NA	**9.67**	NA	**24.6**
Manganese	mg/L	1.1*	NA	**2.13**	NA	**0.256**	**0.0620**	**0.00794**	**0.0846**	NA	NA	NA	NA	**1.58**	**1.70**	**0.0878**	**0.118**	NA	NA	**0.905**	NA	**0.497**
Nickel	mg/L	0.49*	NA	**0.0121**	NA	**0.00165 J**	**0.00814**	**0.000990 J**	**0.00590**	NA	NA	NA	NA	**0.614**	**0.674**	**0.0136**	**0.00233 J**	NA	NA	**0.0126**	NA	**0.106**
Potassium	mg/L	NV	NA	**2.89**	NA	**1.05**	**0.684**	**331**	**2.88**	NA	NA	NA	NA	**2.32**	**2.48**	**2.05**	**2.19**	NA	NA	**2.43**	NA	**3.33**
Selenium	mg/L	0.05	NA	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U
Silver	mg/L	0.51	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.00500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U
Sodium	mg/L	NV	NA	**767**	NA	**28.8**	**31.9**	**310**	**292**	NA	NA	NA	NA	**442**	**464**	**32.8**	**114**	NA	NA	**44.1**	NA	**97.0**
Thallium	mg/L	0.002	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U
Vanadium	mg/L	0.72	NA	< 0.00125 U	NA	< 0.00125 U	**0.0118**	**0.00371 J**	< 0.00125 U	NA	NA	NA	NA	**0.00324 J**	**0.00332 J**	**0.00199 J**	**0.00132 J**	NA	NA	**0.00403 J**	NA	**0.00114 J**
Zinc	mg/L	31	NA	**0.0176**	NA	**0.00838**	**0.0208**	**0.00289 J**	**0.00219 J**	NA	NA	NA	NA	**0.0122 J**	**0.00842 J**	**0.00639**	**0.00428 J**	NA	NA	**0.00858**	NA	**0.0217**
Mercury	mg/L	0.002	NA	< 0.000050 U	NA	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA	NA	NA	NA	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA	NA	**0.000020 J**	NA	< 0.000050 U
1,4-Dioxane (8270 SIM)																						
1,4-Dioxane	µg/L	9.1	**0.063**	**0.024**	**0.066**	**0.09**	**0.23**	**0.15**	**0.034**	**15**	**0.089**	**0.065**	NA	NA	NA	**0.082**	**0.022**	**0.058**	**0.46**	**0.081**	**0.34**	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	18WW16	18WW17_081222 8/12/22	18WW18_081622 8/16/22	18WW19_08232 2 8/23/22	18WW19_08232 2_a 8/23/22	18WW20_082322 8/23/22	18WW22_081722 8/17/22	18WW22_081722_ a 8/17/22	18WW24_08082 2 8/8/22	18WW25_081522 8/15/22	CO1_082422 8/24/22	CO2_081022 8/10/22	CO3_081622 8/16/22	CO4_081722 8/17/22	CO6_081522 8/15/22	CO8_081622 8/16/22	CO9_082422 8/24/22	MW1_081722 8/17/22	MW2_080822 8/8/22	MW2_080822_a 8/8/22
Aquifer Zone:			Shallow	Shallow	Wilcox	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package:			abandoned	HS22080752	HS22080927	HS22081311	HS22081311	HS22081311	HS22081026	HS22081026	HS22080522	HS22080933	HS22081409	HS22080611	HS22080927	HS22081026	HS22080933	HS22080927	HS22081409	HS22081026	HS22080522	HS22080522
Well Identification:			18WW16	18WW17	18WW18	18WW19	18WW19	18WW20	18WW22	18WW22	18WW24	18WW25	C-01	C-02	C-03	C-04	C-06	C-08	C-09	MW-1	MW-2	MW-2
Perchlorate (6850)																						
Perchlorate	µg/L	17*		**83,300**	< 0.0500 U	**0.0432 J**	< 0.0500 U	< 0.0500 U	**0.395**	**0.366**	**0.0683 J**	**0.351**	**0.0399 J**	< 0.0500 U	**69.8**	**0.337**	**0.0639 J**	**0.135**	**0.0643 J**	**1,870**	< 0.0500 U	< 0.0500 U
Volatile Organic Compounds (8260C)																						
1,1,1,2-Tetrachloroethane	µg/L	110		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,1,1-Trichloroethane	µg/L	200		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
1,1,2,2-Tetrachloroethane	µg/L	14		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,1,2-Trichloroethane	µg/L	5		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,1-Dichloroethane	µg/L	10,000		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	**31**	**30**
1,1-Dichloroethene	µg/L	7		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
1,1-Dichloropropene	µg/L	2.9		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2,3-Trichlorobenzene	µg/L	310		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2,3-Trichloropropane	µg/L	0.041		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2,4-Trichlorobenzene	µg/L	70		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2,4-Trimethylbenzene	µg/L	5,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2-Dibromo-3-chloropropane	µg/L	0.2		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2-Dibromoethane	µg/L	0.05		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
1,2-Dichlorobenzene	µg/L	600		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,2-Dichloroethane	µg/L	5		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**580**	< 12 U	< 12 U
1,2-Dichloropropane	µg/L	5		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,3,5-Trimethylbenzene	µg/L	5,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,3-Dichlorobenzene	µg/L	3,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,3-Dichloropropane	µg/L	29		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
1,4-Dichlorobenzene	µg/L	75		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
2,2-Dichloropropane	µg/L	42		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
2-Butanone	µg/L	61,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
2-Chlorotoluene	µg/L	2,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
2-Hexanone	µg/L	6,100		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 50 U	< 50 U
4-Chlorotoluene	µg/L	2,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
4-Isopropyltoluene	µg/L	10,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
4-Methyl-2-pentanone	µg/L	8,200		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 50 U	< 50 U
Acetone	µg/L	92,000		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 50 U	< 50 U
Benzene	µg/L	5		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Bromobenzene	µg/L	2,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Bromochloromethane	µg/L	4,100		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Bromodichloromethane	µg/L	4.6		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Bromoform	µg/L	36	abandoned	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Bromomethane	µg/L	140		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Carbon disulfide	µg/L	10,000		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 50 U	< 50 U
Carbon tetrachloride	µg/L	5		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Chlorobenzene	µg/L	100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Chloroethane	µg/L	41,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Chloroform	µg/L	1,000		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**21**	**97**	**97**
Chloromethane	µg/L	220		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 10 U	< 12 U	< 12 U
cis-1,2-Dichloroethene	µg/L	70		**1.4**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**7,900**	**68,000**	**66,000**
cis-1,3-Dichloropropene	µg/L	5.3		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Dibromochloromethane	µg/L	34		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Dibromomethane	µg/L	380		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Dichlorodifluoromethane	µg/L	20,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 20 U	< 25 U	< 25 U
Ethylbenzene	µg/L	700		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	**31**	**35**
Hexachlorobutadiene	µg/L	20		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Isopropylbenzene	µg/L	10,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
m,p-Xylene	µg/L	10,000**		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Methylene chloride	µg/L	5		< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	**15,000**	**14,000**
Naphthalene	µg/L	2,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
n-Butylbenzene	µg/L	4,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
n-Propylbenzene	µg/L	4,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
o-Xylene	µg/L	10,000**		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
sec-Butylbenzene	µg/L	4,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Styrene	µg/L	100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
tert-Butylbenzene	µg/L	4,100		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Tetrachloroethene	µg/L	5		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	**30**	**32**
Toluene	µg/L	1,000		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	**26**	**27**
trans-1,2-Dichloroethene	µg/L	100		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	**150**	**150**
trans-1,3-Dichloropropene	µg/L	29		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 12 U	< 12 U
Trichloroethene	µg/L	5		**66**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.9**	< 0.50 U	**8,600**	**980**	**1,000**
Trichlorofluoromethane	µg/L	31,000		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 25 U	< 25 U
Vinyl chloride	µg/L	2		< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ	< 10 U	**25 J**	**25**

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	18WW16	18WW17_081222 8/12/22	18WW18_081622 8/16/22	18WW19_08232 2 8/23/22	18WW19_08232 2_a 8/23/22	18WW20_082322 8/23/22	18WW22_081722 8/17/22	18WW22_081722_ a 8/17/22	18WW24_08082 2 8/8/22	18WW25_081522 8/15/22	CO1_082422 8/24/22	CO2_081022 8/10/22	CO3_081622 8/16/22	CO4_081722 8/17/22	CO6_081522 8/15/22	CO8_081622 8/16/22	CO9_082422 8/24/22	MW1_081722 8/17/22	MW2_080822 8/8/22	MW2_080822_a 8/8/22
Aquifer Zone:			Shallow	Shallow	Wilcox	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Metals (6020A/7470A)																						
Aluminum	mg/L	100		0.00858 UB	**0.0498**	**0.377**	**0.428**	**0.0302**	**0.175**	**0.189**	**0.147**	**0.0823**	NA	NA	**0.00872 J**	NA	**0.0364**	NA	**0.176**	0.0153 UB	NA	NA
Antimony	mg/L	0.006		< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	NA	< 0.00125 U	< 0.00125 U	NA	NA
Arsenic	mg/L	0.01		**0.000505 J**	**0.00720**	**0.000579 J**	**0.000527 J**	< 0.00125 U	**0.00194 J**	**0.00197 J**	**0.000661 J**	**0.00354 J**	NA	NA	**0.00137 J**	NA	**0.00106 J**	NA	< 0.00125 U	< 0.00125 U	NA	NA
Barium	mg/L	2		**4.17**	**1.50**	**0.140**	**0.133**	**0.121**	**0.0678**	**0.0690**	**0.0491**	**0.400**	NA	NA	**1.10**	NA	**1.00**	NA	**1.24**	**0.603**	NA	NA
Beryllium	mg/L	0.004		< 0.000500 U	**0.000750 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000747 J**	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA
Cadmium	mg/L	0.005		**0.000385 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000209 J**	< 0.000500 U	NA	NA	**0.000276 J**	NA	< 0.000500 U	NA	**0.000324 J**	**0.000253 J**	NA	NA
Calcium	mg/L	NV		**346**	**68.7**	**6.23**	**5.80**	**3.02**	**13.1**	**13.1**	**73.3**	**16.1**	NA	NA	**46.1**	NA	**19.1**	NA	**413**	**29.2**	NA	NA
Chromium	mg/L	0.1		**0.0309**	**0.168**	**0.0168**	**0.0174**	**0.00191 J**	**0.0176**	**0.0178**	**0.000584 J**	**0.000907 J**	NA	NA	**0.000790 J**	NA	**0.000587 J**	NA	**0.0278**	**0.158**	NA	NA
Cobalt	mg/L	6.1		**0.00300 J**	**0.000267 J**	**0.000396 J**	**0.000413 J**	**0.00126 J**	**0.000200 J**	**0.000197 J**	**0.0645**	**0.00106 J**	NA	NA	**0.000201 J**	NA	**0.00163 J**	NA	**0.00146 J**	**0.0251**	NA	NA
Copper	mg/L	1.3		**0.0220**	**0.00430 J**	**0.00136 J**	**0.00131 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00230 J**	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U	NA	**0.00171 J**	0.00699 UB	NA	NA
Iron	mg/L	NV		**0.714**	**125**	**20.9**	**19.8**	**28.7**	**0.0569 J**	**0.0537 J**	**0.312**	**35.2**	NA	NA	**56.4**	NA	**60.6**	NA	**0.356**	**6.35**	NA	NA
Lead	mg/L	0.015		< 0.00125 U	**0.00157 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	NA	< 0.00125 U	< 0.00125 U	NA	NA
Magnesium	mg/L	NV		**209**	**39.2**	**3.47**	**3.33**	**1.91**	**2.28**	**2.33**	**57.8**	**9.73**	NA	NA	**21.8**	NA	**10.7**	NA	**201**	**25.0**	NA	NA
Manganese	mg/L	1.1*		**0.0655**	**2.39**	**0.339**	**0.330**	**0.251**	**0.00136 J**	**0.00152 J**	**9.63**	**2.14**	NA	NA	**1.20**	NA	**0.917**	NA	**0.289**	**0.766**	NA	NA
Nickel	mg/L	0.49*		**0.219**	**0.00852**	**0.00563**	**0.00549**	**0.00196 J**	**0.00128 J**	**0.000892 J**	**0.154**	**0.0007601 J**	NA	NA	< 0.00125 U	NA	**0.00118 J**	NA	**0.101**	**2.30**	NA	NA
Potassium	mg/L	NV		**1.43**	**3.78**	**2.22**	**2.14**	**1.85**	**3.33**	**3.35**	**0.684**	**1.13**	NA	NA	**2.93**	NA	**3.70**	NA	**1.62**	**2.29**	NA	NA
Selenium	mg/L	0.05		**0.00145 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	NA	NA
Silver	mg/L	0.51		< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA
Sodium	mg/L	NV		**1,180**	**160**	**24.8**	**23.6**	**26.7**	**40.9**	**41.8**	**966**	**37.1**	NA	NA	**128**	NA	**207**	NA	**614**	**242**	NA	NA
Thallium	mg/L	0.002		< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA
Vanadium	mg/L	0.72		**0.00181 J**	**0.00176 J**	**0.00183 J**	**0.00177 J**	< 0.00125 U	**0.0156**	**0.0159**	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	NA	**0.00110 J**	**0.00177 J**	NA	NA
Zinc	mg/L	31		**0.0477**	**0.00707**	**0.00346 J**	**0.00319 J**	**0.00368 J**	0.00228 UB	< 0.00250 U	**0.0456**	**0.00665**	NA	NA	**0.00637**	NA	**0.00871**	NA	**0.0103**	0.00284 UB	NA	NA
Mercury	mg/L	0.002		< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA	NA	< 0.000050 U	NA	< 0.000050 U	NA	< 0.000050 U	< 0.000050 U	NA	NA
1,4-Dioxane (8270 SIM)																						
1,4-Dioxane	µg/L	9.1		NA	**0.026**	NA	NA	**0.11**	**0.070**	**0.059**	NA	**0.17**	NA	NA	**0.044**	NA	NA	**0.066**	NA	NA	**11 J**	**17 J**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	MW3_081822 8/18/22	MW5_080922 8/9/22	MW6_081722 8/17/22	MW7_081922 8/19/22	MW8_080822 8/8/22	MW9_082322 8/23/22	MW10_080922 8/9/22	MW12_081122 8/11/22	MW13_081022 8/10/22	MW14_081522 8/15/22	MW16_081622 8/16/22	MW17_080922 8/9/22	MW18_081522 8/15/22	MW19_080922 8/9/22	MW20_081822 8/18/22	MW21_081022 8/10/22	MW22_081122 8/11/22	MW23_080822 8/8/22
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package:			HS22081097	HS22080499	HS22081026	HS22081120	HS22080522	HS22081311	HS22080499	HS22080695	HS22080611	HS22080933	HS22080927	HS22080499	HS22080933	HS22080499	HS22081097	HS22080611	HS22080695	HS22080522
Well Identification:			MW-3	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-12	MW-13	MW-14	MW-16	MW-17	MW-18	MW-19	MW-20	MW-21	MW-22	MW-23
Perchlorate (6850)																				
Perchlorate	µg/L	17*	**3,250**	**28,700**	**3,040**	**17,300**	**1,890**	**463**	< 0.0500 U	< 0.0500 U	**0.0527 J**	**106,000**	**0.0518 J**	< 0.0500 U	**0.429**	**0.0637 J**	**0.184**	**9,080**	**1,330**	**58,400**
Volatile Organic Compounds (8260C)																				
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,1,1-Trichloroethane	µg/L	200	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,1-Dichloroethane	µg/L	10,000	**3.0**	**3.2**	**1.9**	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	**2.2**	< 0.50 U	**24 J**	**0.67 J**	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
1,1-Dichloroethene	µg/L	7	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	**3.8**	< 0.50 U	**93**	**3.8**	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2-Dibromoethane	µg/L	0.05	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,2-Dichloroethane	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	**24**	**3.0**	**0.60 J**	< 0.50 U	**2.0**	< 0.50 U	**81**	**20**	NA	< 0.50 U	**0.68 J**	< 0.50 U	**23**	**7.3**	**66**
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	**0.81 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
2,2-Dichloropropane	µg/L	42	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
2-Hexanone	µg/L	6,100	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 10 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 10 U
Acetone	µg/L	92,000	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 10 U
Benzene	µg/L	5	< 0.50 U	< 0.50 U	< 0.50 U	**4.8 J**	**0.67 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Bromochloromethane	µg/L	4,100	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Bromodichloromethane	µg/L	4.6	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Carbon disulfide	µg/L	10,000	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 10 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	**5.0**
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Chloroform	µg/L	1,000	< 0.50 U	< 0.50 U	< 0.50 U	**12**	< 0.50 U	**0.78 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	**3.0**	**10**
Chloromethane	µg/L	220	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
cis-1,2-Dichloroethene	µg/L	70	**41**	**11**	**6.3**	**16**	**20**	**27**	< 0.50 U	**57**	< 0.50 U	**1,900**	**12**	NA	**1.1**	**7.1**	< 0.50 U	**1,500**	**4.7**	**21**
cis-1,3-Dichloropropene	µg/L	5.3	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Dibromomethane	µg/L	380	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Methylene chloride	µg/L	5	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 10 U
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Tetrachloroethene	µg/L	5	**0.89 J**	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Toluene	µg/L	1,000	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
trans-1,2-Dichloroethene	µg/L	100	**1.8**	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**19 J**	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
trans-1,3-Dichloropropene	µg/L	29	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 2.5 U
Trichloroethene	µg/L	5	**220**	**41**	**16**	**1,800**	**200**	**690**	**0.93 J**	**140**	< 0.50 U	**8,100**	**290**	NA	**8.4**	**5.2**	< 0.50 U	**6,300**	**380**	**2,600**
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 5.0 U
Vinyl chloride	µg/L	2	**12**	**4.0**	**1.5**	< 2.5 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.46 J**	< 0.50 U	< 12 U	< 0.50 U	NA	< 0.50 U	< 0.50 U	< 0.50 U	**26**	< 0.50 U	< 2.5 U

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	MW3_081822 8/18/22	MW5_080922 8/9/22	MW6_081722 8/17/22	MW7_081922 8/19/22	MW8_080822 8/8/22	MW9_082322 8/23/22	MW10_080922 8/9/22	MW12_081122 8/11/22	MW13_081022 8/10/22	MW14_081522 8/15/22	MW16_081622 8/16/22	MW17_080922 8/9/22	MW18_081522 8/15/22	MW19_080922 8/9/22	MW20_081822 8/18/22	MW21_081022 8/10/22	MW22_081122 8/11/22	MW23_080822 8/8/22
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Metals (6020A/7470A)																				
Aluminum	mg/L	100	0.00712 UB	NA	0.0155 UB	NA	NA	**0.0470**	NA	NA	**0.212**	**0.0594**	NA	NA	NA	**0.489**	**0.286**	**0.0366**	0.0182 UB	NA
Antimony	mg/L	0.006	< 0.00125 U	NA	< 0.00125 U	NA	NA	< 0.00125 U	NA	NA	< 0.00125 U	< 0.00125 U	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.0125 U	**0.000489 J**	NA
Arsenic	mg/L	0.01	**0.000437 J**	NA	**0.00424 J**	NA	NA	< 0.00125 U	NA	NA	< 0.00125 U	**0.00520**	NA	NA	NA	**0.00254 J**	< 0.00125 U	**0.000675 J**	**0.00111 J**	NA
Barium	mg/L	2	**0.322**	NA	**0.634**	NA	NA	**0.0987**	NA	NA	**0.619**	**0.272**	NA	NA	NA	**0.244**	**0.367**	**7.35**	**0.846**	NA
Beryllium	mg/L	0.004	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.000994 J**	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Cadmium	mg/L	0.005	**0.000202 J**	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	**0.000237 J**	**0.00124 J**	NA	NA	NA	**0.000474 J**	**0.000326 J**	**0.000549 J**	< 0.000500 U	NA
Calcium	mg/L	NV	**22.0**	NA	**23.3**	NA	NA	**10.3**	NA	NA	**28.1**	**112**	NA	NA	NA	**153**	**38.7**	**177**	**104**	NA
Chromium	mg/L	0.1	0.00164 UB	NA	**0.316**	NA	NA	**0.218**	NA	NA	**0.113**	**0.0987**	NA	NA	NA	**0.0971**	**0.0213**	**0.659**	**0.677**	NA
Cobalt	mg/L	6.1	**0.00149 J**	NA	**0.00487 J**	NA	NA	**0.00610**	NA	NA	**0.000652 J**	**0.0412**	NA	NA	NA	**0.0136**	**0.0686**	**0.0472**	**0.00213 J**	NA
Copper	mg/L	1.3	**0.00103 J**	NA	0.00882 UB	NA	NA	**0.00231 J**	NA	NA	**0.00889**	**0.00254 J**	NA	NA	NA	**0.00527**	**0.00641**	**0.0193**	**0.0109**	NA
Iron	mg/L	NV	**0.245**	NA	**5.71**	NA	NA	**1.67**	NA	NA	**102**	**117**	NA	NA	NA	**89.9**	**3.07**	**4.97**	**5.80**	NA
Lead	mg/L	0.015	< 0.00125 U	NA	< 0.00125 U	NA	NA	< 0.00125 U	NA	NA	< 0.00125 U	< 0.00125 U	NA	NA	NA	**0.000645 J**	< 0.00125 U	**0.000621 J**	< 0.00125 U	NA
Magnesium	mg/L	NV	**11.5**	NA	**19.2**	NA	NA	**3.32**	NA	NA	**14.5**	**57.2**	NA	NA	NA	**80.8**	**8.01**	**129**	**26.9**	NA
Manganese	mg/L	1.1*	**1.13**	NA	**0.170**	NA	NA	**0.132**	NA	NA	**1.52**	**4.32**	NA	NA	NA	**3.66**	**0.904**	**1.55**	**0.0234**	NA
Nickel	mg/L	0.49*	**0.00410 J**	NA	**0.237**	NA	NA	**0.0785**	NA	NA	**0.0474**	**0.176**	NA	NA	NA	**0.0896**	**1.90**	**0.408**	**0.409**	NA
Potassium	mg/L	NV	**1.28**	NA	**2.09**	NA	NA	**0.348**	NA	NA	**3.98**	**10.7**	NA	NA	NA	**4.97**	**0.560**	**2.53**	**2.08**	NA
Selenium	mg/L	0.05	< 0.00250 U	NA	< 0.00250 U	NA	NA	< 0.00250 U	NA	NA	< 0.00250 U	< 0.00250 U	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA
Silver	mg/L	0.51	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Sodium	mg/L	NV	**230**	NA	**201**	NA	NA	**17.1**	NA	NA	**103**	**384**	NA	NA	NA	**1,210**	**38.3**	**474**	**377**	NA
Thallium	mg/L	0.002	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA
Vanadium	mg/L	0.72	< 0.00125 U	NA	**0.00462 J**	NA	NA	**0.00190 J**	NA	NA	**0.00102 J**	< 0.00125 U	NA	NA	NA	**0.00135 J**	**0.000748 J**	**0.00334 J**	**0.00330 J**	NA
Zinc	mg/L	31	**0.00247 J**	NA	0.00882 UB	NA	NA	**0.00757**	NA	NA	**0.00447 J**	**1.36**	NA	NA	NA	**0.0114**	**0.00614**	**0.0207**	< 0.00250 U	NA
Mercury	mg/L	0.002	< 0.000050 U	NA	< 0.000050 U	NA	NA	< 0.000050 U	NA	NA	< 0.000050 U	< 0.000050 U	NA	NA	NA	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA
1,4-Dioxane (8270 SIM)																				
1,4-Dioxane	µg/L	9.1	NA	**2.1**	NA	**18**	**4.7**	**1.4**	**0.14**	NA	NA	**430**	**10**	**0.81**	NA	NA	NA	**3.6**	NA	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	102_081622 8/16/22	102_081622_a 8/16/22	109_081022 8/10/22	120_081522 8/15/22	125_082422 8/24/22	126_081722 8/17/22	129_081722 8/17/22	130_082422 8/24/22	130_082422_a 8/24/22	ICT2_082522 8/25/22	ICT4_082522 8/25/22	ICT7_082522 8/25/22	ICT8_082522 8/25/22	ICT11_082522 8/25/22	ICT11_082522_a 8/25/22	ICT12A_082522 8/25/22	ICT12B_082522 8/25/22	ICT12C_082522 8/25/22	ICT12D_082522 8/25/22	ICT12D_082522_a 8/25/22
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab Package:			HS22080927	HS22080927	HS22080611	HS22080933	HS22081409	HS22081026	HS22081026	HS22081409	HS22081409	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514
Well Identification:			MW-102	MW-103	MW-109	MW-120	MW-125	MW-126	MW-129	MW-130	MW-130	ICT-2	ICT-4	ICT-7	ICT-8	ICT-11	ICT-11	ICT-12A	ICT-12B	ICT-12C	ICT-12D	ICT-12D
Perchlorate (6850)																						
Perchlorate	µg/L	17*	**34.9**	**34.8**	**8,850**	**5,770**	**3,700**	**0.251**	**3,670**	**0.114**	**0.0989 J**	**570**	**3,770**	**311**	**336**	**9,240**	**8,500**	**10,200**	**33,800**	**646**	**122**	**114**
Volatile Organic Compounds (8260C)																						
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,1,1-Trichloroethane	µg/L	200	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,1-Dichloroethane	µg/L	10,000	< 0.50 U	< 0.50 U	**2.1 J**	**12**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	**14 J**	< 5.0 U	< 5.0 U	< 2.5 U	**19 J**	< 0.50 U	**35**	**29**
1,1-Dichloroethene	µg/L	7	< 0.50 U	< 0.50 U	< 2.5 U	**78**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.4**	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	**82**	< 0.50 U	< 12 U	< 12 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2-Dibromoethane	µg/L	0.05	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,2-Dichloroethane	µg/L	5	< 0.50 U	< 0.50 U	< 2.5 U	**15**	< 5.0 U	< 0.50 U	**20**	< 0.50 U	< 0.50 U	**24**	**90**	< 0.50 U	**56**	**6.9 J**	**6.9 J**	**6.4**	**43**	**5.5**	**410 J**	**290 J**
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
2,2-Dichloropropane	µg/L	42	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
2-Hexanone	µg/L	6,100	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 50 U	< 20 U	< 20 U	< 10 U	< 50 U	< 2.0 U	< 50 U	< 50 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 50 U	< 20 U	< 20 U	< 10 U	< 50 U	< 2.0 U	< 50 U	< 50 U
Acetone	µg/L	92,000	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 50 U	< 20 U	< 20 U	< 10 U	< 50 U	< 2.0 UJ	< 50 U	< 50 U
Benzene	µg/L	5	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Bromochloromethane	µg/L	4,100	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Bromodichloromethane	µg/L	4.6	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Carbon disulfide	µg/L	10,000	< 2.0 U	< 2.0 U	< 10 U	< 10 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 50 U	< 10 U	< 10 U	< 10 U	< 50 U	< 2.0 U	< 50 U	< 50 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	**2.3**	< 1.0 U	< 1.0 U	< 1.0 U	**12**	< 1.0 U	< 25 U	< 10 U	< 10 U	**5.6**	< 25 U	**3.3**	< 25 U	< 25 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Chloroform	µg/L	1,000	< 0.50 U	< 0.50 U	< 2.5 U	**13**	< 5.0 U	< 0.50 U	**6.0**	< 0.50 U	< 0.50 U	< 0.50 U	**7.2 J**	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	**6.5**	**26**	**5.9**	**25**	< 12 U
Chloromethane	µg/L	220	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
cis-1,2-Dichloroethene	µg/L	70	< 0.50 U	< 0.50 U	**410**	**820**	< 5.0 U	< 0.50 U	**9.0**	< 0.50 U	< 0.50 U	**71**	**950**	< 0.50 U	**6,400**	**260**	**250**	**14**	**4,800**	**35**	**40,000 J**	**24,000 J**
cis-1,3-Dichloropropene	µg/L	5.3	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Dibromomethane	µg/L	380	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	**24 J**	< 25 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Methylene chloride	µg/L	5	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	**1,200**	< 20 U	< 20 U	< 10 U	< 50 U	< 2.0 U	**2,100 J**	**630 J**
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 UJ	< 25 U	< 25 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**240**	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	**19 J**	**16 J**
Toluene	µg/L	1,000	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	**19 J**	**19 J**
trans-1,2-Dichloroethene	µg/L	100	< 0.50 U	< 0.50 U	**3.2 J**	**7.1 J**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.3**	< 5.0 U	< 0.50 U	**16 J**	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	**25 J**	**25 J**
trans-1,3-Dichloropropene	µg/L	29	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 0.50 U	< 12 U	< 5.0 U	< 5.0 U	< 2.5 U	< 12 U	< 0.50 U	< 12 U	< 12 U
Trichloroethene	µg/L	5	< 0.50 U	< 0.50 U	**890**	**6,300**	< 5.0 U	< 0.50 U	**1,100**	**0.59 J**	**0.64 J**	**430**	**3,300**	< 0.50 U	**6,800**	**1,700**	**1,700**	**1,100**	**12,000**	**1,400**	**18,000**	**16,000**
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 25 U	< 10 U	< 10 U	< 5.0 U	< 25 U	< 1.0 U	< 25 U	< 25 U
Vinyl chloride	µg/L	2	< 0.50 U	< 0.50 U	< 2.5 U	**7.4 J**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**2.0**	**7.6 J**	< 0.50 U	**590**	< 5.0 U	< 5.0 U	< 2.5 U	**92**	< 0.50 U	**930 J**	**490 J**

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	102_081622 8/16/22	102_081622_a 8/16/22	109_081022 8/10/22	120_081522 8/15/22	125_082422 8/24/22	126_081722 8/17/22	129_081722 8/17/22	130_082422 8/24/22	130_082422_a 8/24/22	ICT2_082522 8/25/22	ICT4_082522 8/25/22	ICT7_082522 8/25/22	ICT8_082522 8/25/22	ICT11_082522 8/25/22	ICT11_082522_a 8/25/22	ICT12A_082522 8/25/22	ICT12B_082522 8/25/22	ICT12C_082522 8/25/22	ICT12D_082522 8/25/22	ICT12D_082522_a 8/25/22
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A/7470A)																						
Aluminum	mg/L	100	**0.365 J**	**0.942 J**	NA	NA	**4.62**	**0.0793**	**0.454**	**0.665**	**0.782**	**1.31**	**0.0288**	**0.807**	**1.72**	0.00838 UB	0.00731 UB	0.0186 UB	**1.57**	**2.25**	0.0205 UB	0.0191 UB
Antimony	mg/L	0.006	< 0.0125 U	< 0.0125 U	NA	NA	< 0.00125 U	< 0.00125 U	**0.000668 J**	< 0.00125 U	**0.000460 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.000568 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U
Arsenic	mg/L	0.01	< 0.0125 U	**0.000409 J**	NA	NA	**0.00633**	**0.0116**	**0.000850 J**	**0.00190 J**	**0.00204 J**	**0.00533**	**0.000517 J**	**0.000823 J**	**0.00220 J**	**0.000444 J**	< 0.00125 U	**0.000992 J**	**0.00102 J**	**0.00140 J**	**0.00537**	**0.00490 J**
Barium	mg/L	2	**0.0340 J**	**0.0524 J**	NA	NA	**0.199**	**10.9**	**0.118**	**0.166**	**0.186**	**0.164**	**0.0967**	**0.107**	**0.460**	**0.510**	**0.497**	**0.181**	**0.439**	**0.0837**	**0.193**	**0.182**
Beryllium	mg/L	0.004	**0.000200 J**	**0.000496 J**	NA	NA	**0.000483 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000431 J**	**0.000203 J**	< 0.000500 U	< 0.000500 U	**0.000332 J**	< 0.000500 U	**0.000261 J**	< 0.000500 U	< 0.000500 U
Cadmium	mg/L	0.005	**0.000656 J**	**0.000856 J**	NA	NA	**0.000496 J**	**0.000205 J**	**0.000392 J**	**0.000875 J**	**0.00104 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000218 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000276 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U
Calcium	mg/L	NV	**1.27**	**1.22**	NA	NA	**2.42**	**342**	**3.76**	**37.0**	**38.5**	**12.8**	**16.7**	**1.78**	**14.8**	**17.8**	**17.8**	**4.72**	**23.2**	**3.42**	**14.7**	**13.7**
Chromium	mg/L	0.1	**0.00112 J**	**0.00285 J**	NA	NA	**0.0105**	**0.00104 J**	**0.00612**	**0.00626**	**0.00666**	**0.0932**	**0.0131**	**0.00860**	**0.0452**	**0.0931**	**0.0107**	**0.168**	**0.130**	**0.0669**	**0.00173 J**	**0.00135 J**
Cobalt	mg/L	6.1	**0.00136 J**	**0.00162 J**	NA	NA	**0.00401 J**	**0.0263**	**0.00339 J**	**0.0155**	**0.0162**	**0.0118**	**0.00227 J**	**0.00270 J**	**0.00294 J**	**0.000468 J**	**0.000448 J**	**0.00116 J**	**0.00398 J**	**0.00287 J**	**0.0162**	**0.0154**
Copper	mg/L	1.3	**0.00288 J**	**0.00490 J**	NA	NA	**0.00611**	< 0.00250 U	0.00293 UB	**0.00266 J**	**0.00288 J**	**0.0509**	**0.00310 J**	**0.00755**	**0.0183**	**0.00613 J**	**0.00154 J**	**0.132**	**0.0746**	**0.00616**	**0.0102 J**	**0.00792 J**
Iron	mg/L	NV	**0.390 J**	**1.43 J**	NA	NA	**9.06**	**10.2**	**1.77**	**3.35**	**3.73**	**9.54**	**0.454**	**3.22**	**6.03**	**0.465 J**	**0.0706 J**	**2.44**	**2.01**	**4.07**	**8.07**	**7.10**
Lead	mg/L	0.015	< 0.0125 U	**0.00163 J**	NA	NA	**0.00719**	< 0.00125 U	**0.00152 J**	**0.00112 J**	**0.00138 J**	**0.000679 J**	< 0.00125 U	**0.00113 J**	**0.00171 J**	< 0.00125 U	< 0.00125 U	**0.00438 J**	< 0.00125 U	**0.00218 J**	< 0.00125 U	< 0.00125 U
Magnesium	mg/L	NV	**0.928**	**0.961**	NA	NA	**2.60**	**255**	**3.05**	**23.4**	**24.8**	**12.4**	**15.1**	**2.10**	**11.9**	**12.8**	**12.9**	**3.92**	**16.7**	**2.74**	**13.5**	**12.5**
Manganese	mg/L	1.1*	**0.0106**	**0.0141**	NA	NA	**0.0855**	**0.240**	**0.0752**	**0.798**	**0.838**	**0.298**	**0.0891**	**0.0499**	**0.378**	**0.0632**	**0.0630**	**0.0463**	**0.197**	**0.0476**	**0.703**	**0.647**
Nickel	mg/L	0.49*	**0.00314 J**	**0.00870 J**	NA	NA	**0.00920**	**0.0164**	**0.00631**	**0.00674**	**0.00767**	**0.0444**	**0.0155**	**0.00876**	**0.00732**	**0.0183**	**0.0165**	**0.0782**	**0.125**	**0.118**	**0.0144**	**0.0126**
Potassium	mg/L	NV	**0.303 J**	**0.540 J**	NA	NA	**1.37**	**3.73**	**0.480**	**1.29**	**1.33**	**1.25**	**0.983**	**1.47**	**1.58**	**1.19**	**1.20**	**0.825**	**1.21**	**0.502**	**0.425**	**0.397**
Selenium	mg/L	0.05	< 0.0250 U	< 0.0250 U	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	< 0.00500 U	**0.000246 J**	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	**15.1**	**14.0**	NA	NA	**44.8**	**886**	**61.0**	**540**	**558**	**131**	**144**	**22.7**	**75.3**	**92.8**	**93.0**	**80.4**	**180**	**45.8**	**57.9**	**53.6**
Thallium	mg/L	0.002	< 0.00500 U	**0.000282 J**	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	**0.00150 J**	**0.00273 J**	NA	NA	**0.00942**	**0.00159 J**	**0.00610**	**0.00609**	**0.00719**	**0.00458 J**	**0.000958 J**	**0.00825**	**0.00660**	**0.00151 J**	**0.000943 J**	**0.00125 J**	**0.00394 J**	**0.00833**	**0.00101 J**	**0.000920 J**
Zinc	mg/L	31	**0.0135 J**	**0.0193 J**	NA	NA	**0.0341**	**0.0182**	**0.0107**	**0.0114**	**0.0127**	**0.148**	**0.0140**	**0.0311**	**0.0715**	**0.0149 J**	**0.00874 J**	**0.0544**	**0.0262**	**0.0317**	**0.00933**	**0.00812**
Mercury	mg/L	0.002	**0.00008 J**	**0.00008 J**	NA	NA	< 0.000050 U	< 0.000050 U	**0.00003 J**	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U
1,4-Dioxane (8270 SIM)																						
1,4-Dioxane	µg/L	9.1	NA	NA	< 0.010 U	**44**	NA	**0.057**	**4.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	ICT12E_082522 8/25/22	ICT13A_082522 8/25/22	ICT13B_082522 8/25/22	ICT13C_082522 8/25/22	ICT13D_082522 8/25/22	ICT13E_082522 8/25/22	ICT13F_082522 8/25/22	ICT14A_082522 8/25/22	ICT14B_082522 8/25/22	ICT14C_082522 8/25/22	ICT14D_082522 8/25/22	ICT14E_082522 8/25/22	1824DPTMW01_ 081222 8/12/22	1824DPTMW02_ 081222 8/12/22	1824DPTMW02_ 081222_a 8/12/22	1824DPTMW03_ 081222 8/12/22	1824DPTMW04_ 081622 8/16/22	1824DPTMW05_ 081522 8/15/22	1824DPTMW06_ 081122 8/11/22
Aquifer Zone:			NA	NA	NA	NA	NA	NA	NA	N	NA	NA	NA	NA	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox
Lab Package:			HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22081514	HS22080752	HS22080752	HS22080752	HS22080752	HS22080927	HS22080933	
Well Identification:			ICT-12E	ICT-13A	ICT-13B	ICT-13C	ICT-13D	ICT-13E	ICT-13F	ICT-14A	ICT-14B	ICT-14C	ICT-14D	ICT-14E	1824DPTMW01	1824DPTMW02	1824DPTMW02	1824DPTMW03	1824DPTMW04	1824DPTMW05	HS22080695
Perchlorate (6850)																					
Perchlorate	µg/L	17*	**41,400**	**10,100**	**255**	**4,210**	**0.161**	**602**	**0.802**	**186**	**6,330**	**2,720**	**5.10**	**4,030**	**0.0298 J**	**76,200**	**76,800**	< 0.0500 U	**0.242**	**210,000**	**0.0848 J**
Volatile Organic Compounds (8260C)																					
1,1,1,2-Tetrachloroethane	µg/L	110	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**5.1 J**	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	**120**	**8.8 J**	< 0.50 U	**4.3 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.7**	**14**	**32**	< 5.0 U	< 0.50 U	**0.68 J**	**0.59 J**	< 0.50 U	< 0.50 U	< 12 U	**2.1**
1,1-Dichloroethene	µg/L	7	**650**	**24**	**1.3**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
1,1-Dichloropropene	µg/L	2.9	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2-Dibromoethane	µg/L	0.05	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
1,2-Dichlorobenzene	µg/L	600	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	**180**	**72**	**47**	**43**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	**21 J**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**79**	**3.1**
1,2-Dichloropropane	µg/L	5	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
2-Butanone	µg/L	61,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 200 U	< 20 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 50 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 200 U	< 20 U	< 2.0 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 50 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U
Acetone	µg/L	92,000	< 200 U	< 20 UJ	< 2.0 UJ	< 20 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 UJ	< 50 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U
Benzene	µg/L	5	< 12 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Bromobenzene	µg/L	2,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Bromochloromethane	µg/L	4,100	**240**	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Bromodichloromethane	µg/L	4.6	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Bromoform	µg/L	36	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Bromomethane	µg/L	140	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 50 U	< 10 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 50 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U
Carbon tetrachloride	µg/L	5	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Chlorobenzene	µg/L	100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Chloroethane	µg/L	41,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Chloroform	µg/L	1,000	**94 J**	< 5.0 U	**0.95 J**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.70 J**	**29**	**16 J**	< 5.0 U	< 0.50 U	**1.7**	**1.7**	< 0.50 U	< 0.50 U	**35**	< 0.50 U
Chloromethane	µg/L	220	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	70	**13,000**	**470**	**130**	**1,200**	< 0.50 U	**15**	< 0.50 U	**41**	**38**	**6,900**	**17,000**	**27**	< 0.50 U	**9.7**	**9.5**	< 0.50 U	< 0.50 U	**73**	**7.1**
cis-1,3-Dichloropropene	µg/L	5.3	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Dibromochloromethane	µg/L	34	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Dibromomethane	µg/L	380	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Dichlorodifluoromethane	µg/L	20,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Ethylbenzene	µg/L	700	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Methylene chloride	µg/L	5	**77,000**	< 20 U	< 2.0 U	**13 J**	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	**1,500**	**11,000**	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 50 U	< 2.0 U
Naphthalene	µg/L	2,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 100 U	< 10 UJ	< 1.0 UJ	< 10 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 UJ	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Styrene	µg/L	100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Tetrachloroethene	µg/L	5	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**12**	**17 J**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Toluene	µg/L	1,000	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
trans-1,2-Dichloroethene	µg/L	100	< 50 U	< 5.0 U	**1.1**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.98 J**	**55**	**59**	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
trans-1,3-Dichloropropene	µg/L	29	< 50 U	< 5.0 U	< 0.50 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 12 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U
Trichloroethene	µg/L	5	**52,000**	**3,500**	**960**	**1,900**	**2.7**	**35**	< 0.50 U	**29**	**200**	**5,200**	**2,300**	**1,300**	< 0.50 U	**190**	**190**	< 0.50 U	**0.59 J**	**4,700**	**3.9**
Trichlorofluoromethane	µg/L	31,000	< 100 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 25 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U
Vinyl chloride	µg/L	2	**540**	**11**	**0.50 J**	**55**	< 0.50 U	< 0.50 U	< 0.50 U	**6.3**	**7.7**	**1,400**	**4,600**	< 5.0 U	< 0.50 U	**2.2**	**2.1**	< 0.50 U	< 0.50 U	< 12 U	< 0.50 U

Table 6. LHAAP-18/24 Analytical Results - August 2022

Location Identification and Sample Date:	Units	MCL/MSC/ PCL	ICT12E_082522 8/25/22	ICT13A_082522 8/25/22	ICT13B_082522 8/25/22	ICT13C_082522 8/25/22	ICT13D_082522 8/25/22	ICT13E_082522 8/25/22	ICT13F_082522 8/25/22	ICT14A_082522 8/25/22	ICT14B_082522 8/25/22	ICT14C_082522 8/25/22	ICT14D_082522 8/25/22	ICT14E_082522 8/25/22	1824DPTMW01_ 081222 8/12/22	1824DPTMW02_ 081222 8/12/22	1824DPTMW02_ 081222_a 8/12/22	1824DPTMW03_ 081222 8/12/22	1824DPTMW04_ 081622 8/16/22	1824DPTMW05_ 081522 8/15/22	1824DPTMW06_ 081122 8/11/22
Aquifer Zone:			NA	NA	NA	NA	NA	NA	NA	N	NA	NA	NA	NA	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox
Metals (6020A/7470A)																					
Aluminum	mg/L	100	**0.117**	0.0182 UB	0.00739 UB	**1.42**	0.0113 UB	**2.84**	**3.41**	**0.0330**	0.0145 UB	0.0111 UB	**0.294**	**0.0262**	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/L	0.006	< 0.00125 U	**0.000440 J**	< 0.00125 U	0.00269	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.000461 J**	< 0.00125 U	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/L	0.01	**0.00110 J**	**0.000745 J**	< 0.00125 U	**0.0749 J**	< 0.00125 U	**0.00261 J**	**0.00155 J**	< 0.00125 U	< 0.00125 U	**0.00436 J**	**0.0446 J**	**0.000448 J**	NA	NA	NA	NA	NA	NA	NA
Barium	mg/L	2	**0.326**	**0.160**	**0.114**	**0.181**	**0.0880**	**0.111**	**0.0866**	**0.174**	**0.310**	**1.70**	**5.04**	**1.98**	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/L	0.004	**0.000852 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000517 J**	**0.000549 J**	**0.000377 J**	< 0.00200 U	**0.000205 J**	**0.00145 J**	**0.000324 J**	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/L	0.005	**0.000943 J**	**0.000295 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000239 J**	< 0.00200 U	**0.000515 J**	**0.0215**	**0.00103 J**	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/L	NV	**42.9**	**16.8**	**8.14**	**13.0**	**2.37**	**1.87**	**0.806**	**4.09**	**9.23**	**88.2**	**102**	**102**	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/L	0.1	**0.0293**	**0.00923**	**0.00102 J**	**0.0850**	**0.000444 J**	**0.0403**	**0.0112**	**0.00900**	**0.00310 J**	**0.00693**	**0.293**	**0.0810**	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/L	6.1	**0.0353**	**0.0202**	**0.00419 J**	**0.00134 J**	**0.00351 J**	**0.00352 J**	**0.00384 J**	**0.0115**	**0.00191 J**	**0.0241**	**0.0361**	**0.00587**	NA	NA	NA	NA	NA	NA	NA
Copper	mg/L	1.3	**0.00460 J**	**0.118**	< 0.00250 U	**0.101**	**0.0102**	**0.0146**	**0.0249**	**0.00109 J**	**0.00791**	**0.00135 J**	**0.0477**	**0.0909**	NA	NA	NA	NA	NA	NA	NA
Iron	mg/L	NV	**0.838**	**1.33**	**0.246**	**7.11**	**0.242**	**8.55**	**5.09**	**5.17**	**0.1309 J**	**13.6**	**39.1**	**2.27**	NA	NA	NA	NA	NA	NA	NA
Lead	mg/L	0.015	< 0.00125 U	**0.00599**	< 0.00125 U	**0.00194 J**	< 0.00125 U	**0.00437 J**	**0.00394 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.00245 J**	< 0.00125 U	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/L	NV	**31.5**	**16.3**	**10.5**	**13.5**	**2.33**	**2.13**	**0.809**	**3.58**	**7.91**	**61.6**	**65.9**	**77.1**	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/L	1.1*	**1.45**	**0.395**	**0.289**	**0.0454**	**0.0443**	**0.0307**	**0.0290**	**0.304**	**0.112**	**1.95**	**2.52**	**0.314**	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/L	0.49*	**0.0395**	**0.0478**	**0.00459 J**	**0.0201**	**0.00668**	**0.0241**	**0.00898**	**0.0177**	**0.0249**	**0.0368**	**0.167**	**0.0954**	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/L	NV	**1.76**	**1.35**	**1.76**	**1.69**	**0.598**	**1.55**	**1.04**	**0.724**	**0.379**	**0.919**	**1.12 J**	**1.64**	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/L	0.05	**0.00228 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	NA	NA	NA	NA	NA
Silver	mg/L	0.51	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000540 J**	< 0.000500 U	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/L	NV	**380**	**255**	**49.9**	**114**	**34.3**	**29.6**	**9.22**	**41.9**	**81.1**	**208**	**337**	**373**	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/L	0.002	**0.000218 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/L	0.72	**0.000907 J**	**0.00190 J**	**0.000677 J**	**0.00478 J**	< 0.00125 U	**0.0191**	**0.00956**	**0.000783 J**	**0.000841 J**	< 0.00125 U	**0.00709**	**0.000951 J**	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/L	31	**0.0282**	**0.973**	**0.0109**	**0.335**	**0.0767**	**0.0298**	**0.0388**	**0.0865**	**0.0849**	**0.0232**	**0.124 J**	**0.148**	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/L	0.002	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	< 0.000050 U	NA	NA	NA	NA	NA	NA	NA
1,4-Dioxane (8270 SIM)																					
1,4-Dioxane	µg/L	9.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.042**	**0.71**	**0.79**	**0.11**	**0.14**	**43**	**9.9**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

Table 7. Weekly Perchlorate Sample Results
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

Sample Identification	Lab Package	Date Sampled	Sample Location	Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (µg/L)	INF Pond Discharge Criteria for Perchlorate (µg/L)	Reporting Limit	Influent Perchlorate (6850)	Effluent Perchlorate (6850)	Does Concentration Meet Discharge Limit? (Yes/No)	No Daily Maximum Concentration		
							Result (µg/L)	Result (µg/L) BIX/AIX		Ammonia as N (350.3) (mg/L)	Ortho-Phosphate (365.3) (mg/L)	Organic Carbon (415.1) (mg/L)
LH18/24-SP650_070622_BIX/AIX	HS22070252	7/6/2022	TK-650	589	17	0.1	NA	**9.16**/< 0.0500 U	Yes	**13**	**4.57**	**15.5**
LH18/24-SP650_071222 (monthly)	HS22070567	7/12/2022	TK-650	589	17	0.1	NA	**0.186**	Yes	--	--	--
LH18/24-SP140_071222 (monthly)	HS22070568	7/12/2022	TK-140	--	--	NA	**8,330**	NA	NA	--	--	--
LH18/24-SP650_071222_BIX/AIX	HS22070566	7/12/2022	TK-650	589	17	0.1	NA	**0.285/0.0318 J**	Yes	**18**	**3.96**	**30.9**
LH18/24-SP650_071922_BIX/AIX	HS22070986	7/19/2022	TK-650	589	17	0.1	NA	**7.86/1.32**	Yes	**24**	**8.05**	**13.0**
LH18/24-SP650_072622_BIX/AIX	HS22071367	7/26/2022	TK-650	589	17	0.1	NA	**0.0964 J/0.0476 J**	Yes	**17**	**2.9**	**24.3**
LH18/24-SP650_080222_BIX/AIX	HS22080124	8/2/2022	TK-650	589	17	0.1	NA	**0.909/0.0287 J**	Yes	**18**	**6.98**	**17.4**
LH18/24-SP650_080922_BIX/AIX	HS22080474	8/9/2022	TK-650	589	17	0.1	NA	**31.3/1.99**	Yes	**17**	**4.5**	**7.06**
LH18/24-SP650_080922_AIX (monthly)	HS22080472	8/9/2022	TK-650	589	17	0.1	NA	**1.98**	Yes	--	--	--
LH18/24-SP140_080922 (monthly)	HS22080473	8/9/2022	TK-140	--	--	NA	**14,700**	NA	NA	--	--	--
LH18/24-SP650_081622_BIX/AIX	HS22080872	8/16/2022	TK-650	589	17	0.1	NA	**48.8/0.206**	Yes	**1.9**	**3.91**	**9.88**
LH18/24-SP650_082422_BIX/AIX	HS22081350	8/24/2022	TK-650	589	17	0.1	NA	**11.4/0.626**	Yes	**16**	**4.74**	**6.32**
LH18/24-SP650_082422 (quarterly)	HS22081354	8/24/2022	TK-650	589	17	0.1	NA	**0.672**	Yes	--	--	--
LH18/24-SP140_082422 (quarterly)	HS22081352	8/24/2022	TK-140	--	--	NA	**12,700**	NA	NA	--	--	--
LH18/24-SP650_083022_BIX/AIX	HS22081683	8/30/2022	TK-650	589	17	0.1	NA	< 0.0500 U/< 0.0500 U	Yes	**18**	**2.98**	**12.1**
LH18/24-SP650_090722_BIX/AIX	HS22090344	9/7/2022	TK-650	589	17	0.1	NA	**0.698/0.0494 J**	Yes	**12**	**5.28**	**6.92**
LH18/24-SP650_090722 (monthly)	HS22090337	9/7/2022	TK-650	589	17	0.1	NA	< 0.0500 U	Yes	**--**	**--**	**--**
LH18/24-SP140_090722 (monthly)	HS22090343	9/7/2022	TK-140	--	--	NA	**22,900**	NA	NA	**--**	**--**	**--**
LH18/24-SP650_091422_BIX/AIX	HS22090729	9/14/2022	TK-650	589	17	0.1	NA	**2.43/0.105**	Yes	**10**	**3.25**	**6.76**
LH18/24-SP650_092122_BIX/AIX	HS22091050	9/21/2022	TK-650	589	17	0.1	NA	**0.0438 J/0.338**	Yes	**21**	**6.90**	**8.78**
LH18/24-SP650_092722_BIX/AIX	HS22091362	9/27/2022	TK-650	589	17	0.1	NA	**3.89/0.166**	Yes	**25**	**3.03**	**20.8**

Notes:

Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL)

SP140 samples are influent samples.

µg/L - micrograms per liter

DVQ - data validation qualifier

J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancies

Detected analytes are in **bold**.

Blue highlighted text indicates concentrations above the INF Pond Discharge Criteria for Perchlorate

NA - not applicable

U - non detect and reported to the limit of detection

BIX - before ion exchange/AIX - after ion exchange

mg/L - milligrams per liter

Table 8. Bi-Weekly GWTP Analytical Sampling Results for July 2022
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT - Biweekly		EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_070622		LH18/24-SP650_071222		LH18/24-SP140_071222		LH18/24-SP650_071922		
			Lab Package	HS22070255		HS22070567		HS22070568		HS22070992		
			Sample Date	7/6/2022		7/12/2022		7/12/2022		7/19/2022		
			Sample Type	GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD			Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL									
VOLATILES	**µg/L**	**µg/L**	**µg/L**			**µg/L**						
1,1,1-Trichloroethane	3,417	7,230	200	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
1,1-Dichloroethene	119	253	7	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
1,2-Dichloroethane	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Acetone	1,132	2,395	NV	< 2.0	U	< 2.0	U	NA		< 2.0	U	Yes
Benzene	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Chlorobenzene	22,300	47,180	100	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Chloroform	1,708	3,615	NV	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	**2.9**		**2.9**		NA		**3.2**		Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Methylene Chloride	803	1,699	5	< 2.0	U	< 2.0	U	NA		< 2.0	U	Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	Yes
Toluene	1,980	4,189	10	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
Trichloroethene	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
Vinyl Chloride	34	72	2	< 0.50	U	< 0.50	U	NA		< 0.50	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	**944**		NA		NA		**1,030**		NA
Sulfate	NV	NV	NV	**16.5**		NA		NA		**19.9**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate**	278	589	17	NA		**0.186**		**8,330**		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	NA		< 0.00600	U	< 0.00600	U	NA		Yes
Barium	1	2	2	NA		**0.239**		NA		NA		Yes
Lead	0.0022	0.0046	0.015	NA		< 0.00125	U	NA		NA		Yes
Selenium	0.0057	0.0120	0.05	NA		< 0.00250	U	< 0.00250	U	NA		Yes
Silver	0.0014	0.0030	0.1	NA		< 0.000500	U	< 0.000500	U	NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane***	NV	134.2	NV	NA		**14**		NA		NA		Yes

Notes:

µg/L - micrograms per liter

DVQ - data validation qualifier

GWTP - Groundwater Treatment Plant

U - Non detect reported to the limit of detection

mg/L - milligrams per liter

*Influent sample not compared to discharge limits

Grab samples are compared to the daily maximum and composite samples to the daily average.

ROD - Record of Decision

NA - not applicable or not analyzed

**-perchlorate is also collected weekly and reported on the Weekly Results Table

***Calculated Effluent Limit

NV - No value

MCL - Maximum Contaminant Level

Table 9. Bi-Weekly GWTP Analytical Sampling Results for August 2022
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT - Biweekly		EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_080222		LH18/24-SP650_080922		LH18/24-SP140_080922		LH18/24-SP650_081622		LH18/24-SP650_083022		
			Lab Package	HS22080125		HS22080472		HS22080473		HS22080897		HS22081685		
			Sample Date	8/2/2022		8/9/2022		8/9/2022		8/16/2022		8/30/2022		
			Sample Type	GRAB		GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L)													
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL	Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**				**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	200	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,1-Dichloroethene	119	253	7	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,2-Dichloroethane	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Acetone	1,132	2,395	NV	< 2.0	U	< 2.0	U	NA		< 2.0	U	**15**		Yes
Benzene	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chlorobezene	22,300	47,180	100	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chloroform	1,708	3,615	NV	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	**3.3**		**3.2**		NA		**3.3**		**2.5**		Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Methylene Chloride	803	1,699	5	< 2.0	U	< 2.0	U	NA		< 2.0	U	< 2.0	U	Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Toluene	1,980	4,189	10	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Trichloroethene	85	181	5	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Vinyl Chloride	34	72	2	< 0.50	U	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	**1,040**		NA		NA		**1,270**		**1,100**		NA
Sulfate	NV	NV	NV	**22**		NA		NA		**29.8**		**35.6**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate**	278	589	17	NA		**1.98**		**14,700**		NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	NA		< 0.00600	UJ	< 0.00600	U	NA		NA		Yes
Barium	1	2	2	NA		**0.355**		NA		NA		NA		Yes
Lead	0.0022	0.0046	0.015	NA		< 0.00125	U	NA		NA		NA		Yes
Selenium	0.0057	0.0120	0.05	NA		< 0.00250	U	< 0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	NA		< 0.000500	UJ	< 0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane***	NV	134.2	NV	NA		**36**		NA		NA		NA		Yes

Notes:

µg/L - micrograms per liter
mg/L - milligrams per liter
DVQ - data validation qualifier
ROD - Record of Decision
GWTP - Groundwater Treatment Plant
*Influent sample not compared to discharge limits
NA - not applicable or not analyzed
U - not detected and reported to the limit of detection
Grab samples are compared to the daily maximum and composite samples to the daily average.
**-perchlorate is also collected weekly and reported on the Weekly Results Table
*** Calculated Effluent Limit
UJ - estimated non-detect due to quality control discrepancy
NV - No value
MCL - Maximum Contaminant Level

Table 10. Bi-Weekly Analytical GWTP Sampling Results for September 2022
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_090722		LH18/24-SP140_090722		LH18/24-SP650_091422		LH18/24-SP650_092722		
			Lab Package	HS22090337		HS22090343		HS22090731		HS22091367		
			Sample Date	9/7/2022		9/7/2022		9/14/2022		9/27/2022		
			Sample Type	GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD			Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL									
VOLATILES	**µg/L**	**µg/L**	**µg/L**									
1,1,1-Trichloroethane	3,417	7,230	200	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,1-Dichloroethene	119	253	7	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,2-Dichloroethane	85	181	5	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Acetone	1,132	2,395	NV	< 2.0	U	NA		< 2.0	U	< 2.0	U	Yes
Benzene	85	181	5	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chlorobenzene	22,300	47,180	100	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chloroform	1,708	3,615	NV	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	**2.8**		NA		**2.6**		**2.5**		Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Methylene Chloride	803	1,699	5	< 2.0	U	NA		< 2.0	U	< 2.0	U	Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Toluene	1,980	4,189	10	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Trichloroethene	85	181	5	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
Vinyl Chloride	34	72	2	< 0.50	U	NA		< 0.50	U	< 0.50	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	NA		NA		**1,170**		**1,140**		NA
Sulfate	NV	NV	NV	NA		NA		**26.8**		**33.5**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate**	278	589	17	< 0.0500	U	**22,900**		NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	< 0.00600	U	< 0.00600	U	NA		NA		Yes
Barium	1	2	2	**0.242**		NA		NA		NA		Yes
Lead	0.0022	0.0046	0.015	< 0.00125	U	NA		NA		NA		Yes
Selenium	0.0057	0.0120	0.05	< 0.00250	UJ	< 0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	< 0.000500	U	< 0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane***	NV	134.2	NV	**7.8**		NA		NA		NA		Yes

Notes:
µg/L - micrograms per liter
DVQ - data validation qualifier
GWTP - Groundwater Treatment Plant
U - Non detect reported to the limit of detection
mg/L - milligrams per liter
*Influent sample not compared to discharge limits
**-perchlorate is also collected weekly and reported on the Weekly Results Table
*** Calculated Effluent Limit
Grab samples are compared to the daily maximum and composite samples to the daily average.
ROD - Record of Decision
NA - not applicable or not analyzed
NV - No value
MCL - Maximum Contaminant Level

Table 11. Quarterly GWTP Analytical Sampling Results
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_082422		LH18/24-SP140_082422		
			Lab Package	HS22081354		HS22081352		
			Sample Date	8/24/2022		8/24/2022		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL					
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	200	< 0.50	U	< 2.5	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	< 5.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 0.50	U	**2.3**	J	Yes
1,1-Dichloroethene	119	253	7	< 0.50	U	< 2.5	U	Yes
1,2-Dichloroethane	85	181	5	< 0.50	U	**11**		Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	< 5.0	U	Yes
Acetone	1,132	2,395	NV	< 2.0	U	< 10	U	Yes
Benzene	85	181	5	< 0.50	U	< 2.5	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	< 5.0	U	Yes
Chlorobenzene	22,300	47,180	100	< 1.0	U	< 5.0	U	Yes
Chloroform	1,708	3,615	NV	< 0.50	U	< 2.5	U	Yes
cis-1,2-dichloroethene	NV	NV	70	**3.1**		**820**		Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	< 5.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	< 5.0	U	Yes
Methylene Chloride	803	1,699	5	< 2.0	U	< 10	U	Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	< 5.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	< 10	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	**7.0**		Yes
Toluene	1,980	4,189	10	< 0.50	U	< 2.5	U	Yes
Trichloroethene	85	181	5	< 0.50	U	**1,100**		Yes
Vinyl Chloride	34	72	2	< 0.50	U	**55**		Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Chloride	NA	NA	NV	**1,140**		**325**		NA
Sulfate	NA	NA	NV	**32**		**32.3**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
Perchlorate	278	589	17	**0.672**		**12,700**		Yes

Table 11. Quarterly GWTP Analytical Sampling Results
3rd Quarter 2022 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_082422		LH18/24-SP140_082422		
			Lab Package	HS22081354		HS22081352		
			Sample Date	8/24/2022		8/24/2022		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL					
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Aluminum	0.777	1.644	NV	0.0139	UB	**0.0639**		Yes
Antimony	NV	NV	0.006	< 0.00125	U	**0.00183**	J	NA
Arsenic	0.365	0.772	0.01	**0.000455**	J	**0.00122**	J	Yes
Barium	1	2	2	**0.358**		**0.305**		Yes
Beryllium	NV	NV	0.004	< 0.000500	U	< 0.000500	U	NA
Cadmium	0.0016	0.0034	0.005	< 0.000500	U	**0.000298**	J	Yes
Calcium	NV	NV	NV	**16.6**		**27.0**		NA
Chromium	0.355	0.752	0.1	0.000882	UB	0.00214	UB	Yes
Cobalt	5.433	11.495	NV	**0.000205**	J	**0.00207**	J	Yes
Iron	1.132	2.395	NV	**0.109**	J	**0.227**		Yes
Lead	0.0022	0.0046	0.015	< 0.00125	U	**0.000674**	J	Yes
Magnesium	NV	NV	NV	**15.3**		**20.7**		NA
Manganese	7.323	15.494	NV	**0.0672**		**0.187**		Yes
Nickel	0.087	0.184	NV	**0.000878**	J	**0.00846**		Yes
Potassium	NV	NV	NV	**2.57**		**1.54**		NA
Selenium	0.0057	0.012	0.05	< 0.00250	U	< 0.00250	U	Yes
Silver	0.0014	0.003	NV	< 0.000500	U	< 0.000500	U	Yes
Sodium	NV	NV	NV	**817**		**232**		NA
Thallium	NV	NV	NV	< 0.000500 U	U	< 0.000500	U	NA
Vanadium	1.698	3.592	NV	**0.000682**	J	**0.00100**	J	Yes
Zinc	0.146	0.31	NV	**0.0226**		**0.302**		Yes
Mercury	NV	NV	0.002	< 0.00005	U	< 0.00005	U	NA
1,4-DIOXANE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,4-Dioxane	NV	134.2	NV	**18.0**		**13**		Yes
CHEMICAL OXYGEN DEMAND (COD)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
COD	NV	200	NV	**36.0**		**13.0**	J	Yes
OIL AND GREASE (O&G)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
O&G	NV	15	NV	< 1.00	U	< 1.00	U	Yes

Notes:
µg/L - micrograms per liter
DVQ - data validation qualifier
Grab samples are compared to the daily maximum and composite samples to the daily average
* only Effluent sample is compared to discharge limits
J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancy
U - non detect and reported to the limit of detection
UB - considered an artifact of blank contamination
mg/L - milligrams per liter
GWTP - Groundwater Treatment Plant
NV - no value
NA - not applicable
MCL - Maximum Contaminant Level

3 QUALITY CONTROL

This report summarizes the data for samples collected during July, August, and September 2022. The samples were reviewed and validated in accordance with the guidelines in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, January 2017); *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, January 2017); and the quality control criteria specified in the *Basewide Uniform Federal Policy - Quality Assurance Project Plan Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

The purpose of the sampling program is to evaluate the effectiveness of the groundwater pump and treat system, assess water quality within the LHAAP-18/24 ICT containment area, and assure compliance with the

for the Interim Remedial Action (USACE, May 1995) and the Memorandum for Record - Development of Proposed Discharge Limits for Perchlorate for the Groundwater Treatment Plant (AECOM, May 2017). Quality control and quality assurance problems noted in the case narratives received from the laboratory are minor and do not affect the usability of the data for compliance at the GWTP. No sample results from the 3rd Quarter of 2022 were rejected due to quality control problems.

ALS Environmental analyzed the compliance samples collected from the GWTP. Independent data verification and validation was performed by the Bhate Project Chemist as described in the Quality Control Summary Report in **Appendix G**. The laboratory reports for the GWTP are included in **Appendix F**. Air monitoring data is presented in **Appendix H**.

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4 TREATED GROUNDWATER DISCHARGED

Reinjection of groundwater in ICT 6 and ICT 9 was discontinued as of 15 July 2012. The last reinjection occurred on 24 May 2012, immediately prior to the scrubber system malfunction which caused GWTP operation to cease temporarily.

Treated groundwater that met the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L) was discharged to the Harrison Bayou in accordance with the Protocol for Discharging GWTP Effluent (**Appendix I**). Although not a requirement, prior to discharge to the Harrison Bayou, treated groundwater was also processed through the IX vessels to ensure adequate perchlorate treatment. When there was not the minimum flow rate in Harrison Bayou for discharge, treated groundwater that met the PCL (17 µg/L) was discharged to the INF Pond for temporary storage. As discussed in Section 2.5, additional sample analyses were performed on the effluent samples to monitor the effectiveness of the perchlorate treatment after the FBR and IX processes to evaluate potential optimizations or maintenance requirements. Approximately, 117,427 gallons of treated groundwater was discharged from the GWTP to Harrison Bayou. **Table 4** summarizes the daily volume from the GWTP to the INF Pond or the Harrison Bayou, the maximum flow rate allowed by chloride and sulfate concentrations, and the approximate volumes discharged for the 3rd Quarter of 2022.

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5 AIR MONITORING

5.1 Summary of Air Monitoring Approach

Operation of the GWTP without air abatement was approved by the TCEQ and USEPA conditioned on collection of air monitoring data to determine the effect of GWTP operation on ambient air quality with respect to potential human health exposure risk. An Interim Air Monitoring Plan was developed by AECOM in August 2012 and used to implement the air monitoring program. The air monitoring program included sampling emission concentrations from the air stripper, ambient air at the GWTP, and ambient air downwind of the GWTP. Collection of air data occurred on a weekly basis from September 2012 through September 2013, on a monthly basis from September 2013 through September 2014, and on a quarterly basis since September 2014. The sampling program includes use of Summa canisters and a photoionization detector (PID) to measure vapor phase concentrations. The air stripper emission sample is collected as a grab sample while the ambient air samples are collected as composite samples. The GWTP sample is collected over 8 hours to represent a workday and the downwind sample is collected over 24 hours to represent potential exposure to an off-site receptor[1]. The downwind sample is collected at the closest downwind property boundary based on prevailing wind direction.

PID data (after system calibration) are collected each time the GWTP is operated and serve as a real-time indicator of ambient air conditions at and downwind of the GWTP. Correlations between definitive analytical air data and PID measurements were established and a method to calculate contaminant concentrations from PID measurements was developed. A PID threshold of 0.4 parts per million by volume in ambient air was established, such that Summa canister measurements would occur when the PID threshold is exceeded.

The Summa canister samples are analyzed for VOCs in accordance with USEPA Method TO-15 from the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air – Second Edition* (EPA/625/R-96/010b), USEPA, January 1999. The PID measurements are collected after instrument calibration. The air sampling results are summarized and reported to the USEPA and TCEQ in the GWTP quarterly reports; however, the air results are reviewed immediately upon receipt for the potential presence of any exceedances of ambient air concentrations. **Appendix J** (**Tables 1 through 3**) includes a comparison of ambient air concentrations with TCEQ Air Monitoring Comparison Values (AMCVs) or the short-term Effects Screening Levels (ESLs) for chemicals with no published AMCVs, calculations of emission rates

[1] Off-site receptor - Any recreational area, residence, commercial/industrial facility, or other normally occupied structures not used solely by the owner or operator of the facilities or the owner of the site upon which the facilities are located. Measurements of distances to determine compliance with this distance restriction must be taken toward structures that are in use as of the date that a notification is filed with the commission.

from the emission point, and a compilation of PID results and calibration records. The air monitoring results to date indicate that all ambient air concentrations are lower than the AMCVs or ESLs. The stripper stack sample concentrations are used to calculate emission rates in pounds per hour (lbs/hr) and tons per year (tpy). The calculated emission rates in lbs/hr are then compared to the allowable emission rates per 30 Texas Administrative Code (TAC) Section (§)106.533(f)(1). The emission rates have been lower than the allowable emission rates to the conservatively-selected off-site receptor. The calculated emission rate in tpy is compared to the allowable limit of 5 tpy per chemical. All emission rates have been lower than the allowable emission rates.

The air monitoring results from the first few months of operation between September and November 2012 were compiled and submitted in a separate report (December 2012) (along with validated data) to TCEQ to demonstrate compliance with Texas Permit by Rule emission standards. Approval of the analytical results and concurrence that the site will continue to meet Title 30 TAC §106.533 without the use of air abatement using a catalytic oxidation system was obtained from the TCEQ via email on 22 February 2013.

On 18 February 2013, AECOM presented analysis of the approach applicable to obtaining a variance for operating the GWTP without air abatement equipment to the TCEQ and USEPA. The analysis indicated that the use of an Explanation of Significant Difference (ESD) was the appropriate approach for the site. Approval of use of an ESD was obtained from the USEPA via email on 21 March 2013. The ESD was developed, reviewed, and accepted by USEPA and TCEQ. The ESD was signed by the designated parties on 3 April 2014, and concurrence from the TCEQ was obtained in a letter dated 16 April 2014.

5.2 Air Monitoring Results for the 3rd Quarter of 2022

During the 3rd Quarter of 2022, air sampling was completed on 1 - 2 August 2022. The laboratory data package is presented in **Appendix H.** A summary of the air sampling results is presented in **Appendix J** (**Tables 1, 2, and 3**). All results met the criteria described in Section 5.1.

5.2.1 Summa Canister Monitoring Results

Air sampling was conducted using Summa canisters on 1 - 2 August 2022. The samples were collected and analyzed as described in Section 5.1 and per the Interim Air Monitoring Plan (AECOM, August 2012). The analytical results were then compiled in spreadsheets where calculations were completed and comparisons to applicable criteria were made as described in Section 5.1.

5.2.1.1 Ambient Air Results

In August 2022, acetone; benzene; cis-1,2-DCE; MC; TCE; n-hexane; toluene; ethylbenzene; m,p-xylene; o-xylene; propene (C3H6); dichlorodifluoromethane (CFC 12); ethanol; trichlorofluoromethane (CFC 11); trichlorotrifluoroethane (CFC 113); alpha-pinene; and d-limonene were detected in the ambient air at the GWTP.

Compounds originating at the GWTP would be expected to have lower concentrations in the downwind sampling location than at the GWTP sampling location. However, the fact that the compounds acetone; benzene; n-hexane; toluene; ethylbenzene; m,p-xylene; o-xylene; propene (C3H6); dichlorodifluoromethane (CFC 12); ethanol; trichlorofluoromethane (CFC 11); trichlorotrifluoroethane (CFC 113), alpha-pinene; and d-limonene were detected in downwind ambient air, suggests that they are present in the ambient (background) air.

The ambient air results during the quarter met the ambient air criteria, as presented in **Table 1** within **Appendix J**.

5.2.1.2 Air Stripper Effluent Results

The VOCs present in groundwater that are removed via the air stripper include 1,1-DCE; 1,2-DCA; cis-1,2-DCE; MC; TCE; PCE; VC; dichlorodifluoromethane (CFC 12); and trichlorotrifluoroethane (CFC 113). These compounds are frequently reported in groundwater at the site, with the exception of trichlorotrifluoroethane (CFC 113) which is not typically a groundwater analyte at LHAAP. Trichlorotrifluoroethane (CFC 113), however, appears to be present in groundwater as indicated by limited analysis conducted in December 2013, where it was detected in several wells, and from historical accounts. Many of the chemicals that are reported in ambient air are not detected in the air stripper effluent. This is likely because the reporting limit for the air stripper effluent is higher than the reporting limit for the ambient air samples or the source for some of these chemicals are extraneous to groundwater.

In August 2022, 1,1-DCE; 1,2-DCA; cis-1,2-DCE; MC; PCE; TCE; VC; dichlorodifluoromethane (CFC 12); and trichlorotrifluoroethane (CFC 113) were detected in air stripper effluent. The highest concentrations were for cis-1,2-DCE; TCE; and trichlorotrifluoroethane (CFC 113). However, the air stripper effluent concentrations were below the emission criteria, as presented in **Table 2** within **Appendix J**.

5.2.2 PID Results

Along with collection of Summa canister air samples, PID measurements from the same sources/areas were collected and recorded. These simultaneous measurements allowed establishing a correlation between PID readings and VOC concentrations in the Summa canister air samples. Conversion from PID to compound concentrations was established by TCEQ in 30 TAC §106.533(h). The TCEQ equation allows use of a PID to determine individual compound concentrations if the distribution of chemicals in the ambient air is known or assumed. This allows the use of a PID as a tool to measure VOC concentrations and convert the PID results to estimates of compound concentrations. All ambient air PID measurements collected during this quarter were reported at 0.0 parts per million. No VOCs were detected at the GWTP ambient air or downwind PID locations. During 3rd Quarter 2022, VOC detections at the air stripper PID location ranged between 20.9 and 24.7 parts per million at each sampling event. The results of the PID readings collected during GWTP operations are presented in **Table 3** within **Appendix J**.

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6 COMMENTS AND RESPONSES

The 2nd Quarter (April - June) 2022 GWTP Evaluation Report was submitted to TCEQ and USEPA on 15 September 2022. The USEPA provided the following comments on 2 October 2022:

USEPA Comment 1: 1.1.2 2nd Quarter 2022 GWTP Operation section, page 1-6, 2nd paragraph. "Service" is missing after "United States Fish and Wildlife" (i.e., should be "United States Fish and Wildlife").

> **Response to USEPA Comment 1:** Concur. The text will be revised to include the word "Service" after "United States Fish and Wildlife" (i.e., United States Fish and Wildlife Service).

USEPA Comment 2: 1.1.2 2nd Quarter 2022 GWTP Operation section, page 1-6, 3rd paragraph. In 1st sentence of paragraph, "…could be restored a GWTP…" should be revised to "…could be restored *to the* GWTP...".

> **Response to USEPA Comment 2:** Concur. The text regarding power being restored to the GWTP will be revised as requested in Section 1.1.1 of this 3rd Quarter report.

USEPA Comment 3: 2.1 Groundwater Elevation section, page 2-1, 2nd sentence. The words "plugged and" are missing between "18WW01 and 18WW16 were..." and "abandoned" (i.e., should be "…18WW01 and 18WW16 were plugged and abandoned...".

> **Response to USEPA Comment 3:** Concur. The text in Section 2.1 will be revised as requested.

USEPA Comment 4: 2.1 Groundwater Elevation section, page 2-1, 3rd sentence. To match usage elsewhere in text and in step 12 figs., "groundwater contours" should be changed to "potentiometric surface contours."

> **Response to USEPA Comment 4:** Concur. Groundwater contours will be revised to potentiometric surface contours in Section 2.1.

USEPA Comment 5: 2.2 Performance of Plume Capture section, page 2-1, 1st paragraph, 1st sentence. Should add "hydraulic" between "groundwater" and "gradients." In addition, would be helpful to clarify whether this is referring to horizontal or vertical hydraulic gradients, or both.

> **Response to USEPA Comment 5:** Concur. The text in Section 2.2 will be revised to state: "The intent of the ICTs is to control horizontal groundwater hydraulic gradients, prevent…"

USEPA Comment 6: 2.2 Performance of Plume Capture section, page 2-1, 1st paragraph, last sentence. The word "zone" is missing between "shallow" and "groundwater" ("shallow zone groundwater (e.g., < 40 bgs).".

> **Response to USEPA Comment 6:** Concur. The text in Section 2.2 will be revised as requested.

USEPA Comment 7: 2.2 Performance of Plume Capture section, page 2-1, 2nd paragraph, 3rd sentence. For readability and to improve parallel construction, the words "extraction from" should be added before "…in October 2008 and well 18WW17…" (i.e., should be "…and extraction from well 18WW17 located to the northeast…").

Response to USEPA Comment 7: Concur. The text in Section 2.2 will be revised as requested.

USEPA Comment 8: 2.2 Performance of Plume Capture section, page 2-2, 1st paragraph. Some additional explanatory wording such as "water table," "levels," or "elevations" should be added after "with respect to groundwater" (e.g., "poor pump positioning with respect to the water table," "poor pump positioning with respect to groundwater levels" or "poor pump positioning with respect to groundwater elevations") to clarify.

Response to USEPA Comment 8: Concur. The text in Section 2.2 will be revised to state: "…poor pump positioning with respect to groundwater elevations…".

USEPA Comment 9: 2.2 Performance of Plume Capture section, fig. B-1 to B-6. Note that legend, well identifiers, and groundwater level elevations are essentially unreadable on printed 8" X 11" pages because of the small font size selected. Pages have to be enlarged to about 11" x 14" paper size to read numerals — even then, they are hard to read. Consequently, this text should be enlarged on these 6 figs.

Response to USEPA Comment 9: Concur. The font size on the labels and legend for Figures B-1 through B-6 will be doubled to 16 point font. The figures are created as 24 by 36 inches and are best viewed at this scale. Since this is not a standard paper size, if the figures are printed at 11 by 17 inches the font size will be 8 point, and if printed at 8.5 by 11 inches the font size will be 4 point.

USEPA Comment 10: 2.2 Performance of Plume Capture section, figs. B-1 to B-6. ICTs are defined as "interceptor collection trenches" in figs. B-1 to B-6, but they are defined as "interception-collection trenches" in the text. Should use consistent terminology throughout report to identify these features.

Response to USEPA Comment 10: Concur. The definitions in the figure legends will be revised for consistency with the text.

USEPA Comment 11: 2.2 Performance of Plume Capture section, figs. B-1. The 174 ft AMSL potentiometric-surface contour surrounding well MW-1 should be extended to surround well 123 because the groundwater elevation in well 123 (174.05) is greater than the 173 ft and 174 ft AMSL contours, so the contours as currently shown in the fig. are incorrect; this revision would then appropriately illustrate the groundwater high (>174 ft AMSL) in the area for this month.

Response to USEPA Comment 11: Noted. Care will be taken in the preparation of the potentiometric surface maps to ensure accurate contours based on the available data.

USEPA Comment 12: 2.2 Performance of Plume Capture section, fig. B-2. The groundwater high defined by the 173 ft AMSL potentiometric-surface contour surrounding monitoring well MW-1 could be extended to surround well 123 because the groundwater elevation in well 123 (173.67) is between the 173 and 174 contours.

Response to USEPA Comment 12: Noted. Care will be taken in the preparation of the potentiometric surface maps to ensure accurate contours based on the available data.

USEPA Comment 13: 2.2 Performance of Plume Capture section, fig. B-3. Based on surrounding contours/water levels, it probably would be better if the 173 ft AMSL potentiometric-surface contour surrounding monitoring well MW-1 was extended to also surround well 123 instead of having a small 173 ft contour/" circle" around well 123 as is currently illustrated (note: I had to zoom in substantially to see the contour surrounding well 123).

Response to USEPA Comment 13: Noted. Care will be taken in the preparation of the potentiometric surface maps to ensure accurate contours based on the available data.

USEPA Comment 14: 2.2 Performance of Plume Capture section, page 2-2, 2nd paragraph. Should clarify what is meant by "groundwater highs" by using improved wording and should indicate this is referring to flow in the shallow zone. At the very least, consider adding "elevation" between "groundwater" and "highs" (i.e., groundwater elevation highs"). However, I think it would be preferable to revise the 2nd sentence, including combining it with the last sentence in the paragraph to improve clarity and reduce redundancy. For example: "The potentiometric surface maps for April through June 2022 continue to reflect high groundwater elevations in the shallow zone in the northwestern/northwestern portion of the site, with groundwater flowing radially outward from an area within the ICT containment area with the highest groundwater elevations (approximately defined by monitor wells MW-1, 123, and AWD-3) towards the surrounding ICTs, including ICT 13 to the north and northwest and ICT 12 to the west and southwest." After this revision, the last sentence in this paragraph could be eliminated.

Response to USEPA Comment 14: Concur. The text in Section 2.2 will be revised as requested.

USEPA Comment 15: 2.2 Performance of Plume Capture section, page 2-2, 2nd paragraph. The second sentence notes that groundwater flows radially from an area with high groundwater elevations within the ICT containment area. However, figs. B-1 to B-3 only show a single flow arrow emanating radially outward from this area. Consequently, additional blue "direction of groundwater flow" arrows should be added to illustrate radial flow outward more clearly from this area. In addition, this is a problem in figs. B-4 to B-6—additional blue flow arrow should be added to illustrate radial flow outward from the two areas with "groundwater highs." In fact, it would be helpful to add additional blue flow arrows to all potentiometric surface maps, or alternatively, add long/continuous groundwater flow lines perpendicular to contours to illustrate flow over larger portions of the study area shown in the figs.

Response to USEPA Comment 15: Concur. Additional directional groundwater flow arrows will be included on future potentiometric surface maps.

USEPA Comment 16: 2.2 Performance of Plume Capture section, page 2-2, last paragraph, 1st sentence. The 1st paragraph of section 2.2 on the previous page (p. 2-1) indicated the shallow zone consists of depths less than 40 ft BGS, but this sentence appears to contradict that statement because it indicates the Wilcox Formation/intermediate/deep zone wells includes depths less than 40 to 50 ft. Thus, this discrepancy needs reconciled, or additional explanation needs to be provided.

> **Response to USEPA Comment 16:** Concur. The Wilcox Formation wells are typically constructed at depths greater than 40 ft bgs, therefore the text will be revised accordingly.

USEPA Comment 17: 2.2 Performance of Plume Capture section, pages 2-2 & 2-3. Capitalization of "Lower" and "Upper" before Wilcox Formation is not appropriate because both terms are not formally part of the stratigraphic name (i.e., see "Wilcox Formation" here National Geologic Map Database (usgs.gov)". Thus, both words should be lowercase to reflect their informal stratigraphic usage in this report.

> **Response to USEPA Comment 17:** Concur. The text will be revised as requested.

USEPA Comment 18: 2.2 Performance of Plume Capture section, page 2-2, last paragraph. In the sentence beginning with "Groundwater in the upper…," it is stated that the upper and lower portions of the Wilcox Formation are in hydraulic connection; however, no citations to previous reports or evidence are provided to support this interpretation. In addition, the sentence should be reworded to indicate the upper and lower Wilcox Formation are in hydraulic connection and are going to be treated as a single hydrogeologic unit, not the groundwater in the wells as the sentence currently indicates. The next sentence indicates/infers only groundwater elevations in upper Wilcox Formation wells were used to construct the potentiometric surface maps — this appears to contradict the statement made in the previous sentence that groundwater elevations in both upper and lower Wilcox Formation wells were going to be used to construct the potentiometric surface maps. Consequently, this sentence and/or the previous sentence need revised for clarification.

> **Response to USEPA Comment 18:** Concur. The text in Section 2.2 will be revised to include a reference to the Remedial Investigation Report – Volume I, Group 2 Sites (Jacobs Engineering Group, April 2011). The text will state: "*The upper and lower Wilcox Formation are in hydraulic communication and so can be treated as a single hydrogeologic unit (Remedial Investigation Report, Jacobs Engineering Group, April 2011).* "

USEPA Comment 19: 2.2 Performance of Plume Capture section, top of page 2-3, sentence beginning with "However, the upper and lower Wilcox Formation wells are treated as…". It was already stated previously that upper and lower parts of the Wilcox Formation were going to be treated as a single hydrogeologic unit (see previous comment), so at first glance this sentence seems redundant. However, it seems like the intent of this sentence was to indicate groundwater elevations from both parts of the formation would be combined and treated as coming from a single hydrogeologic unit for contouring purposes. If so, this sentence should be revised

accordingly. If not, the sentence seems redundant and some of the information in the sentence can be combined with the second sentence discussed in the previous comment.

> **Response to USEPA Comment 19:** Concur. The redundant text will be removed from the 3rd Quarter 2022 Report.

USEPA Comment 20: 2.2 Performance of Plume Capture section, top of page 2-3, sentence beginning with "It is noted that…". Should provide citations to previous reports or evidence to support conclusion that the lower and upper Wilcox are not in hydraulic connection everywhere, especially since it contradicts the declarative statement that they were in hydraulic connection in previous sentences (see 2 previous comments).

> **Response to USEPA Comment 20**: Explanation. Text will be deleted from the 3rd Quarter Report. No citation is necessary.

USEPA Comment 21: 2.2 Performance of Plume Capture section, top of page 2-3. The word "formation" in "Wilcox formation" needs capitalized in 2 sentences (i.e., sentences beginning with "It is noted" and "However,").

> **Response to USEPA Comment 21:** Concur. The text will be revised as requested.

USEPA Comment 22: 2.2 Performance of Plume Capture section, top of page 2-3, sentence beginning with "Groundwater in the Wilcox Formation flows in a...". First, this sentence indicates groundwater flows in a northerly direction throughout the site. This is generally true if one were to draw long groundwater flow lines through most of the contours shown on the figs. B-4 to B-6; however, it generally is not true in the eastern part of the study area, where contours indicate groundwater generally flows eastward toward Bobby Jones Road. If additional groundwater elevations are available and not shown on the potentiometric-surface maps because they are outside of the area of concern in this report indicate groundwater in this area generally flows northward as well, that should be stated so the reader is not puzzled by the statement that all groundwater flows generally northward in the study area. If this is not correct, the statement should be modified to indicate groundwater in the eastern part of the area moves eastward. Second, the word "hydraulic" needs added between "vertical" and "gradient" (i.e., should be "downward vertical hydraulic gradient").

> **Response to USEPA Comment 22:** Concur. The text in Section 2.2 will be revised to state: "A groundwater high is present in the Wilcox Formation in the area of monitoring wells MW-14 and 18CPTMW01SW. Wilcox Formation groundwater flows radially away from MW-14 and 18CPTMW01SW. Across the rest of the site, Wilcox Formation groundwater flows in a north-northwest direction, towards Caddo Lake and there is a downward vertical hydraulic gradient between the overlying shallow zone and the Wilcox Formation."

USEPA Comment 23: 2.3 Quantity of water extracted from LHAAP-18/24, page 2-3, 2nd paragraph, 2nd sentence. Sentence indicates total extracted volume was approximately 778,677 gallons, but table 5 indicates 771,403 gallons. Unclear why there is a discrepancy. In addition, it

is unclear where the quantities presented in this paragraph are shown in the report — they are not all in table 5 or shown in fig. 2-1.

Response to USEPA Comment 23: Explanation. The total extraction volume is measured two ways; 1) the total extracted volume from each individual ICT well, and 2) from the flow meter (FIT-140) on the influent into the GWTP. Due to slight variations between meters, the extracted volume from Site 18/24 has a slight variance between the separate metering locations. Note that the extracted volumes presented in Table 5 are the volumes measured at each individual ICT well.

The system at the GWTP continually monitors influent, effluent, and the amount of groundwater moving through various portions of the system. Monthly operational data tables are generated and provided to the Army. However, these monthly tables are not included in the quarterly reports.

USEPA Comment 24: 2.3 Quantity of water extracted from LHAAP-18/24, page 2-3, 3rd paragraph, 1st sentence. Sentence indicates total estimated volume discharged to the Harrison Bayou and the INF pond was 714,259 gallons. However, examination of table 4 indicates all discharge was to the Harrison Bayou (714,259 gallons), and no discharge to the INF pond (0 gallons). Consequently, would be helpful to revise sentence to reflect this fact.

Response to USEPA Comment 24: Noted.

USEPA Comment 25: 5.1 Summary of Air Monitoring Approach, page 5-1, 2nd paragraph, 2nd sentence. Strongly consider replacing the word "means" with "method." In addition, the word "concentration" should be plural in "calculate contaminant concentration" (i.e., should be "…and a method to calculate contaminant concentrations…").

Response to USEPA Comment 25: Concur. The text will be revised as requested.

USEPA Comment 26: 5.1 Summary of Air Monitoring Approach, page 5-1, 3rd paragraph, 1st sentence. Should provide citation for EPA method TO-15.

Response to USEPA Comment 26: Concur. A citation for TO-15 will be added to Section 5.1 as follows: "The Summa canister samples are analyzed for VOCs in accordance with USEPA Method TO-15 from the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air -Second Edition* (EPA/625/R-96/010b), USEPA, January 1999."

USEPA Comment 27: Appendix A, fig. A-1. ICTs are defined as "interceptor collection trenches" in this fig., but they are defined as "interception-collection trenches" in the text.

Response to USEPA Comment 27: Concur. The definitions in the figure legends will be revised for consistency with the text.

The TCEQ provided the following comment on 28 October 2022:

TCEQ Comment 1: I agree with EPA's comment #9 that the notes, legend, well identifiers, and groundwater level elevations in B-1 to B-6 are essentially unreadable because of the small font

size selected. I have been expanding these figures across two 24-inch monitors to read the fonts. At that size, the 'big picture' is completely lost.

> **Response to TCEQ Comment 1:** Concur. The font size on the labels and legend for Figures B-1 through B-6 will be doubled to 16 point font. The figures are created as 24 by 36 inches and are best viewed at this scale. Since this is not a standard paper size, if the figures are printed at 11 by 17 inches the font size will be 8 point, and if printed at 8.5 by 11 inches the font size will be 4 point.

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APPENDIX A
ICT LAYOUT AND GWTP PROCESS FLOW DIAGRAM

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0 100 200 400 Feet

Harrison Bayou

ICT-13G
ICT-13F
ICT-13E
ICT-13D
ICT-13C
ICT-13B
ICT-13A
ICT-12E
ICT-12D
ICT-12C
ICT-12B
ICT-12A
ICT-14A
ICT-14B
ICT-14C
ICT-14D
ICT-14E
ICT-1
ICT-2
ICT-3
ICT-4
ICT-5
ICT-6
ICT-7
ICT-8
ICT-9
ICT-10
ICT-11
EW-1
18WW17
LHAAP-24
LHAAP-18
LHAAP-39
LHAAP-17
Open Burning Pan 157
Open Burning Cage 155
33-X
35-X
37-X
41-X
21-X
27-X
22-X
22-X-1
20-X
24-X
25-X
Groundwater Treatment Plant
Ditch
SCUDDAY AVE
AVE "Q"
LONG POINT RD

Legend:

- Extraction Location
- Deactivated ICT Sump
- Injection Point – Inactive since May 24, 2012
- HDPE — High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line
- 401 — Building Number
- 717 — Former Building Location and Number

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Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	11/21/2022	MRM

ICT Layout Map

Figure A-1

PROCESS WATER FROM SUMP COLLECTION

FLOW MONITORING METER FIT-140

GROUNDWATER FROM BURNING GROUNDS AND SITE 17

TK-140 EQUALIZATION 300,700 GAL.

TK-140 Sampling Spigot

FLOW MONITORING METER FIT-172

TK-200A ORP 5,900 GAL.

TK-200B pH 5,700 GAL.

TK-200C POLYMER 3,400 GAL.

POLYMER POTABLE WATER

METALS TREATMENT

TK-240 CLARIFIER 10,000 GAL.

TK-640 BACK WASH TANK

FL-290 SAND FILTER

TK-300 STRIPPER FEED TANK 22,800 GAL.

FLOW MONITORING METER FIT-322

VENT HEADER

TK-530 8,670 GAL.

TK-510B 8,670 GAL.

TK-510A 8,670 GAL.

DECANT

DECANT

FILTER PRESS MAKEUP WATER SOURCE

SAND FILTER BACKWASH WATER SOURCE

RECYCLE

VENT TO ATMOSPHERE

FILTER CAKE FOR DISPOSAL

BELT PRESS BFP-560

SOLIDS REMOVAL

COLLECTION FROM FLOOR DRAINS IN CONTAINMENT AREA AND FROM DECON PAD

SUMP

TO TK 140

ELECTRON DONOR SUBSTRATE TANK 55 GAL. DRUM

TK-103 NUTRIENT TANK

P-104

P-103

FILTER PRESS MAKEUP WATER

SAND FILTER BACKWASH WATER

CARBON FILTER

T-330 AIR STRIPPER

TK-630 EFFLUENT STORAGE 127,000 GAL.

P-175

FLOW MONITORING METER FIT-103

Recycle

Liquid Phase Adsorber Protect™ LM-36 Series

VOLATILE ORGANICS TREATMENT

P-101A

P-101B

T-101 FBR

TK-650 1,000 GAL.

P-641

P-642

TO INF POND

TO HARRISON BAYOU

TO IRRIGATION AT BURNING GROUNDS

PERCHLORATE TREATMENT

TK-650 Sampling Spigot

FLOW MONITORING METER FIT-686

NOTES:

GAL.	GALLON
TK or T	TANK
BFP	BELT FILTER PRESS
P	PUMP
FL	FILTER
FBR	FLUIDIZED BED REACTOR
I/X	ION EXCHANGE

Process Flow Diagram

Figure A-2

Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

DRAWN BY: MRM

DATE: 10/26/2022

SCALE: Not to Scale

PROJECT NO: NWO1312.0150

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Table A-1: ICTs Completion Depths

ICT	TOC Elevation	Total Depth	Sump Elevation	Comment
1	186.07	22.5	163.57	Taken out of service in 2007.
2	185.02	29.5	155.52	
3	192.27	37.75	154.52	Taken out of service in 2007.
4	193.51	37.5	156.01	
5	192.67	35	157.67	Taken out of service in 2007.
6	197.30	40.75	156.55	Converted to infiltration in 2007. Ceased reinjection in July 2012.
7	198.03	32.33	165.7	
8	198.97	44.5	154.47	
9	197.64	45.5	152.14	Converted to infiltration in 2007. Ceased reinjection in July 2012.
10	198.07	45.42	152.65	Taken out of service in 2007.
11	198.01	43.33	154.68	
12A	189.06	31.5	157.56	Taken out of service in 2007. Reinstituted in December 2012.
12B	191.97	36.25	155.72	
12C	193.90	34.33	159.57	
12D	185.64	33.75	151.89	
12E	183.38	32.25	151.13	
13A	182.59	28.17	154.42	
13B	184.72	29.58	155.14	
13C	186.13	28.17	157.96	
13D	186.72	26.17	160.55	
13E	191.79	27.08	164.71	
13F	197.81	32.33	165.48	
13G	197.03	27.25	169.78	Taken out of service in 2008.
14A	196.8	43.00	153.8	
14B	197.61	43.42	154.19	
14C	197.86	41.33	156.53	
14D	198.47	44.25	154.22	
14E	198.47	43.08	155.39	

Note(s):

ICT - interception-collection trench

TOC - top of casing, measuring point for groundwater elevations

Elevations are reported as feet above mean sea level.

Total depths are reported as feet below TOC.

Sump elevation calculated by subtracting total depth from TOC elevation.

ICTs were installed in 1998.

ICT 12A was replaced on December 5, 2012, and extraction has resumed.

TOC Elevations and total depth measured in October 2003, 4th Quarter 2003, Groundwater Treatment Plant Report.

Table A-2: Extraction Equipment Maintenance Since 2011

LHAAP-18/24

Well I.D.	Replaced Parts	Date	Contractor
ICT 14E	Pump	3/15/2012	Shaw
ICT 14D	Pump, motor, level probes	3/16/2012	Shaw
ICT 14B	Pump, level probes, level probe wire	3/16/2012	Shaw
ICT 14A	Pump, motor, level probes, level probe wire	3/17/2012	Shaw
ICT 2	Pump, motor	3/17/2012	Shaw
ICT 13D	Pump	3/19/2012	Shaw
ICT 13B	Pump	3/20/2012	Shaw
ICT 14E	Pump, motor, broken piping	11/19/2012	AECOM
ICT 13C	Pump	11/20/2012	AECOM
ICT13E	Pump	11/20/2012	AECOM
ICT 12A	Pump, motor, wiring harness, level probes, level probe wire	12/5/2012	AECOM
ICT 7	Pump, motor, wiring harness, level probes	12/6/2012	AECOM
ICT2	Pump	6/10/2013	AECOM
ICT 13C	Pump	6/11/2013	AECOM
ICT 13D	Pump	6/12/2013	AECOM
ICT 14E	Pump rebuilt	6/15/2013	AECOM
ICT 14E	Replaced low level switch	6/19/2013	AECOM
ICT 13C	Pump, wiring harness, flow meter	4/15/2014	AECOM
ICT 14D	Repaired level probes	6/24/2014	AECOM
ICT 14E	Repaired level probes	6/24/2014	AECOM
ICT 14E	Pump and motor troubleshooting	6/26/2014	AECOM
ICT2, 13F, 14C, 14D, 14E	Repaired level probes	7/7/2014	AECOM
ICT 12E	Pump, motor	10/2/2014	AECOM
ICT 12E	Wiring harness, fixed leak	10/8/2014	AECOM
ICT 12E	Level probes	10/9/2014	AECOM
ICT13A	Pump, piping	10/15/2014	AECOM
ICT 12E	Repaired leaking fittings	10/16/2014	AECOM
ICT 11	1" tee and 1" elbow	1/13/2015	AECOM
ICT 12B	Flow meter	1/13/2015	AECOM
ICT 7	1" tee, repaired 1" pipe	1/13/2015	AECOM
ICT 13A	Flow meter	1/15/2015	AECOM
ICT 13B	Pump	1/15/2015	AECOM
ICT 13C	Pump	1/16/2015	AECOM
ICT 7	Low level probe	1/16/2015	AECOM
ICT 13D	Pump, level probes	1/17/2015	AECOM
ICT 14C	Low level probe	1/17/2015	AECOM
ICT 14C	Low level probe	1/29/2015	AECOM
ICT 14D	Low level probe	1/29/2015	AECOM
ICT 13D	Level probes	1/29/2015	AECOM
ICT 2	Pump	1/30/2015	AECOM
ICT 8	Fuse	3/2/2015	AECOM
ICT 8	Fuse	3/9/2015	AECOM
ICT 12E	Flow meter	3/13/2015	AECOM
ICT 13D	Union	3/13/2015	AECOM
ICT 14C	Cleaned level probes	4/1/2015	AECOM
ICT 14D	Cleaned level probes	4/1/2015	AECOM
ICT 13A	Cleaned level probes	4/21/2015	AECOM
ICT 14C	Cleaned level probes	4/21/2015	AECOM
ICT 8	Low level probe	7/24/2015	AECOM
ICT 13C	Installed New Pump	7/28/2015	AECOM

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 14C	Installed New Pump and Electric Motor	7/29/2015	AECOM
ICT 14E	Installed New Pump and Electric Motor	7/31/2015	AECOM
ICT 12E	Repaired wiring	8/12/2015	AECOM
ICT 13E	Replaced high and low level probes	8/12/2015	AECOM
ICT 2	Installed Rebuilt Pump	9/9/2015	AECOM
ICT 12 E, ICT 14E	Replaced high level probe and wiring	9/15/2015	AECOM
ICT 13A	Installed new pump	12/23/2015	AECOM
ICT 13B	Installed new pump	12/24/2015	AECOM
ICT 13D	Replaced high level probe	2/11/2016	Aerotek
ICT 14C	Replace low level probe on ICT 14C	2/15/2016	Aerotek
ICT 8	Installed new pump and electric motor	2/19/2016	Aerotek
ICT 14C	Repaired piping leak	3/10/2016	Aerotek
ICT 14E	Installed high and low level probes, level probe wire	3/22/2016	Aerotek
ICT 13D, ICT 14B	Installed high and low level probes, level probe wire	3/24/2016	Aerotek
ICT 14B	Installed new pump and electric motor	3/31/2016	Aerotek
ICT 14C	Installed new low level probe	4/20/2016	Aerotek
ICT 12B	Installed new mechanical flow meter	6/16/2016	Aerotek
ICT 13C	Installed rebuilt pump and new flow meter	8/10/2016	Aerotek
ICT 13A	Installed rebuilt pump, new flow meter, and new 1" unions	8/24/2016	Aerotek
ICT 14E	Installed new mechanical flow meter	8/26/2016	Aerotek
ICT 12C	Repair flow meter	8/30/2016	Aerotek
ICT 2	Install rebuilt pump and new flow meter	8/31/2016	Aerotek
ICT 14C	Clean and adjust level probes	9/7/2016	Aerotek
ICT 14C	Replaced level probes	9/12/2016	Aerotek
ICT 14C	Installed new level probe wire and level probes	9/21/2016	Aerotek
ICT 12C	Installed rebuilt pump, new electric motor, new wiring harness, new level probe wire, and new level probes	9/27/2016	Aerotek
ICT 14C	Cleaned and adjusted level probes	10/14/2016	Aerotek
ICT 13C	Cleaned and adjusted level probes	10/21/2016	Aerotek
ICT 13B	Installed rebuilt pump	10/25/2016	Aerotek
ICT 14D	Installed rebuilt pump	10/27/2016	Aerotek
ICT 13C	Replace low level probe	11/8/2016	Aerotek
ICT 13B	Replace relay base plate	11/8/2016	Aerotek
ICT 13E	Clean and adjust low level probe	11/15/2016	Aerotek
ICT 13B	Replace broken relay base plate and bad level probe wire	11/17/2016	Aerotek
ICT 13C	Clean & repair leaking flow meter	11/18/2016	Aerotek
ICT 13B	Clean & adjust low level probe	11/18/2016	Aerotek
ICT 13A, 13B, & 13E	Clean and adjust low level probes	12/2/2016	Aerotek
ICT 13C & 14C	Pulled piping and pumps	2/8/2017	Aerotek
ICT 14C	Installed new electric motor	2/8/2017	Aerotek
ICT 13C & 14C	Installed rebuilt grundfos pumps	2/8/2017	Aerotek
ICT 7, 13A, & 14D	Repaired sample ports	2/9/2017	Aerotek
ICT 13B & 14E	Cleaned and adjusted low level probes	3/30/2017	Aerotek
ICT 13B & 13F	Installed new flow meters	3/30/2017	Aerotek
ICT 12B	Repair flow meter	4/13/2017	Aerotek
ICT 12C	Replace broken 1" tee	5/1/2017	Aerotek
ICT 11	Installed new manual flow meter	5/5/2017	Aerotek
ICT 2	Installed new flow meter	5/9/2017	Aerotek
ICT 14C & 14D	Cleaned and adjusted low level probes	5/31/2017	Aerotek
ICT 14C	Cleaned and adjusted low level probe	6/27/2017	Aerotek
ICT 8	Clean low level probe	7/11/2017	Aerotek
ICT 2 & 14D	Cleaned and replaced level probes	7/17/2017	Aerotek
ICT 14C	Cleaned low level probe	7/24/2017	Aerotek

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 13A	Installed new pump and flow meter	8/8/2017	Aerotek
ICT 13C & 13B	Installed new pump and flow meter	8/9/2017	Aerotek
ICT 13B	Installed new low level probe	8/10/2017	Aerotek
ICT 11	Installed new pump and flow meter	8/11/2017	Aerotek
ICT 4	Replaced low level probe	8/11/2017	Aerotek
ICT 2	Installed rebuilt pump	9/19/2017	Aerotek
ICT 13D	Adjusted level probes	9/22/2017	Aerotek
ICT 14C	Cleaned level probes	10/11/2017	Bhate
ICT 13E	Clean and adjust level probes	10/24/2017	Bhate
ICT 12B	Adjust level probes	11/15/2017	Bhate
ICT 14D	Cleaned level probes	11/15/2017	Bhate
ICT 8	Clean and adjust level probes	11/28/2017	Bhate
ICT 2	Cleaned level probes	12/20/2017	Bhate
ICT 13C	Install new flow meter	1/30/2018	Bhate
ICT 14C	Cleaned level probes	1/30/2018	Bhate
ICT 13C	Cleaned & adjusted level probes	2/1/2018	Bhate
ICT 13B	Repair broken 1" union	2/1/2018	Bhate
ICT 14A	Repair 2 broken 1" elbows & lower high level probe	2/1/2018	Bhate
ICT 14B	Repair broken 1" tee & lower high level probe	2/1/2018	Bhate
ICT 14D	Install new flow meter	2/8/2018	Bhate
ICT 8	Replace broken 1" tee & clened level probes	2/8/2018	Bhate
ICT 14D	Cleaned level probes	2/28/2018	Bhate
ICT 14C	Replace low level probe	2/28/2018	Bhate
ICT 13B	Cleaned level probes	2/28/2018	Bhate
ICT 13A	Install new motor & replace leaking 1" union	3/14/2018	Bhate
ICT 13C	Cleaned & adjusted level probes	3/21/2018	Bhate
ICT 12B	Replace broken 1" elbow & install new flow meter	3/21/2018	Bhate
ICT 2	Install new pump	3/22/2018	Bhate
ICT 13B	Replaced level probes	3/30/2018	Bhate
ICT 14E	Lower high level probe	3/30/2018	Bhate
ICT 14C	Cleaned level probes	4/27/2018	Bhate
ICT 11	Install new breaker	4/27/2018	Bhate
ICT 14E	Cleaned level probes	6/7/2018	Bhate
ICT 12C	Cleaned level probes	6/7/2018	Bhate
EW 01	Cleaned level probes	6/7/2018	Bhate
ICT 14E	Replaced level probes	6/8/2018	Bhate
ICT 11	Install new electrical wire from breaker to well	6/14/2018	Bhate
ICT 12B	Replaced pump	6/25/2018	Bhate
ICT 14E	Cleaned level probes	6/26/2018	Bhate
ICT 8	Cleaned level probes	6/26/2018	Bhate
ICT 14C	Replaced pump	6/27/2018	Bhate
EW01	Replaced level probes	9/12/2018	Bhate
ICT 7	Cleaned level probes	9/12/2018	Bhate
ICT 12C	Replaced low level probe wire and probe	9/12/2018	Bhate
ICT 14D	Replaced high level probe wire & probe	9/13/2018	Bhate
ICT 12B	Replaced high and low level probe wires & probes	9/13/2018	Bhate
ICT 12B	Replaced electrical relay and relay base plate	9/13/2018	Bhate
ICT 14C	Cleaned level probes	9/13/2018	Bhate
ICT 13E	Replaced flow meter	9/14/2018	Bhate
ICT 14D	Replace low level probe	10/31/2018	Bhate
ICT 8	Cleaned level probes	10/31/2018	Bhate
ICT 14C	Cleaned level probes	10/31/2018	Bhate
ICT 13A	Replace broken 1" Tee	12/12/2018	Bhate
ICT 14C	Cleaned level probes	12/12/2018	Bhate
ICT 13A	Install new flow meters	2/14/2019	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 12D	Replace pump & motor	3/6/2019	Bhate
ICT 13C	Replace pump	3/8/2019	Bhate
ICT 2	Replace pump & flow meter	3/11/2019	Bhate
ICT 14C	Replace pump & motor	3/12/2019	Bhate
ICT 14D	Replace pump	3/12/2019	Bhate
ICT 14E	Replace pump, seal plate & level probes	3/14/2019	Bhate
ICT 14A	Replace pump and repair leaking 1" pipe	3/15/2019	Bhate
ICT 13C	Lower high level probe	3/22/2019	Bhate
ICT 14A	Lower high level probe	3/22/2019	Bhate
EW-01	Replace pump	3/29/2019	Bhate
ICT 8	Clean level probes	4/1/2019	Bhate
ICT 12C	Clean level probes	4/1/2019	Bhate
ICT 13D	Clean level probes	4/1/2019	Bhate
ICT 14E	Replaced bad relay	4/2/2019	Bhate
ICT 12A	Replace flow meter	4/3/2019	Bhate
ICT 13F	Replace flow meter	4/3/2019	Bhate
ICT 13D	Replace low level probe	4/3/2019	Bhate
ICT 13C	Clean level probes	5/8/2019	Bhate
ICT 14 C	Clean level probes	5/8/2019	Bhate
ICT 12D	Replace bad relay	5/8/2019	Bhate
ICT 13A	Replace pump	7/10/2019	Bhate
ICT 13D	Replace pump	7/17/2019	Bhate
ICT 14C	Clean level probes	9/25/2019	Bhate
ICT 14D	Clean level probes	9/25/2019	Bhate
ICT 12D	Clean level probes	10/2/2019	Bhate
ICT 13B	Clean level probes	10/2/2019	Bhate
ICT 13C	Clean level probes	10/2/2019	Bhate
ICT 14E	Clean level probes	10/2/2019	Bhate
18WW17	Install double wall pipe	10/28/2019	Bhate
ICT 14C	Clean level probes	4/16/2020	Bhate
ICT 12B	Replace coil in electrical panel	5/5/2020	Bhate
ICT 14D	Replace coil in electrical panel	5/5/2020	Bhate
ICT 11	Replace broken 1" union	5/12/2020	Bhate
ICT 13E	Replace broken 1" union	5/12/2020	Bhate
ICT 14A	Replace broken 1" tee	5/12/2020	Bhate
ICT 14C	Clean level probes	5/12/2020	Bhate
ICT 14A	Clean level probes	5/12/2020	Bhate
ICT 7	Clean level probes	5/12/2020	Bhate
ICT 13C	Replace pump	5/13/2020	Bhate
ICT 13C	Replace broken 1" union and 1" nipple	5/13/2020	Bhate
ICT 13B	Replace pump	5/19/2020	Bhate
ICT 13B	Replace flow meter	5/19/2020	Bhate
ICT 2	Replace pump	5/20/2020	Bhate
ICT 4	Replace flow meter	9/29/2020	Bhate
ICT 8	Replace flow meter	9/29/2020	Bhate
ICT 12C	Repaired flow meter	9/29/2020	Bhate
ICT 13C	Replace flow meter	9/30/2020	Bhate
ICT 14B	Replace flow meter	9/30/2020	Bhate
ICT 7	Replace flow meter	9/30/2020	Bhate
ICT 14E	Replace pump	10/6/2020	Bhate
ICT 14C	Replace pump and motor	10/7/2020	Bhate
18WW17	Replace bad coil	12/9/2020	Bhate
ICT 14A	Electrical problem repaired	12/15/2020	Bhate
ICT 13F	Electrical problem repaired	12/15/2020	Bhate
ICT 8	Clean level probes	12/16/2020	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 14C	Clean level probes	12/16/2020	Bhate
ICT 14B	Replace blown fuse	1/26/2021	Bhate
ICT 13A	Replace pump	1/27/2021	Bhate
ICT 13D	Replace Pump & motor	1/27/2021	Bhate
ICT 2	Replace pump & flowmeter	2/9/2021	Bhate
ICT 12E	Replace pump	2/9/2021	Bhate
ICT14A	Replace broken 1" tee	3/3/2021	Bhate
ICT 8	Replaced pump and repaired wiring harness	4/1/2021	Bhate
ICT 14E	Replaced pump and motor	5/1/2021	Bhate
ICT 14D	Replaced pump	5/1/2021	Bhate
ICT 14C	Replaced pump	5/1/2021	Bhate
ICT 7	Replaced blown fuse	9/7/2021	Bhate
ICT 13A	Replace breaker	10/5/2021	Bloc Design
ICT 12A	Clean level probes	10/20/2021	Bhate
ICT 8	Replace low level probe	10/20/2021	Bhate
ICT 2	Replace flow meter	2/16/2022	Bhate
ICT 7	Replace flow meter	2/16/2022	Bhate
ICT 11	Replace flow meter nipple	2/16/2022	Bhate
ICT 14E	Replace flow meter nipple	2/16/2022	Bhate
ICT 13C	Replace pump and flow meter	3/10/2022	Bhate
ICT 13A	Replacement flow meter	3/10/2022	Bhate
ICT 12B	Replace flow meter	3/15/2022	Bhate
ICT 12C	Replace flow meter	3/15/2022	Bhate
ICT 8	Replace motor and pump	3/23/2022	Bhate
ICT 14D	Replace motor and pump	3/23/2022	Bhate
ICT 14C	Replace motor	3/23/2022	Bhate
ICT 12D	Replace pump, motor, and wiring harness	3/30/2022	Bhate
ICT 7	Fix electrical issue	4/6/2022	Bhate
ICT 13E	Replace flowmeter	4/6/2022	Bhate
ICT 13B	Replace pump	6/7/2022	Bhate
	LHAAP-16		
Well I.D.	**Replaced Parts**	**Date**	**Contractor**
EW08	New pump	2/28/2011	Shaw
EW01	Rebuild pump	8/25/2011	Shaw
EW06	Rebuild pump	8/25/2011	Shaw
EW02	Rebuild pump	2/12/2012	Shaw
EW03	Rebuild pump	2/12/2012	Shaw
EW08	Rebuild pump	11/8/2012	AECOM
EW01	Rebuild pump	11/8/2012	AECOM
EW04	Repair pump	11/13/2012	AECOM
EW07	Rebuild pump	11/13/2012	AECOM
EW04	Installed New Pump	11/28/2012	AECOM
EW06	Installed New Pump	11/28/2012	AECOM
EW02	Installed New Pump	12/4/2012	AECOM
EW03	Installed New Pump	12/4/2012	AECOM
EW01	Installed New Pump	12/17/2012	AECOM
EW01	Replaced Low level probe	1/17/2015	AECOM
EW01	Cleaned and adjusted level probes	10/21/2016	Aerotek

APPENDIX B
GROUNDWATER ELEVATION CONTOUR MAPS

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01131890

TUSCON AVE
TALVER AVE
LHAAP-35C (53)
18WW05
(165.91)
166.00
Harrison Bayou
C-06
(166.47)
C-05
(166.05)
18WW20
(167.13)
18CPTMW16
(166.28)
(Not Used)
18WW07
(NM)
18WW08
(166.19)
18CPTMW15
(168.11)
169:00
18CPTMW19
(169.84)
BGPZ-6
(169.57)
18WW22
(168.29)
1824DPTMW03
(NM)
18CPTMW18
(165.22)
1824DPTMW01
(NM)
18WW25
(164.68)
165.00
AWD-4
(170.97)
170:00
125
(168.91)
169.00
BGPZ-7
(168.31)
18WW17
(NM)
MW-5
(169.42)
BGPZ-3
(168.02)
18WW24
(165.59)
18CPTMW23
(167.36)
123
(172.52)
BGPZ-5
(168.64)
MW-6
(169.68)
MW-4
(170.43)
109
(169.30)
1824DPTMW02
(NM)
MW-16
(167.30)
MW-12
(167.63)
BGPZ-4
(167.11)
MW-3
(169.66)
MW-1
(173.71)
BGPZ-8
(167.78)
LHAAP-24
18CPTMW04
(171.67)
172:00
BGPZ-11
(169.38)
1824DPTMW04
(NM)
MW-21
(169.17)
166.00
MW-11
(168.12)
AWD-2
(171.19)
BGPZ-9
(169.48)
C-08
(169.38)
C-02
(165.83)
120
(170.27)
BGPZ-12
(Plugged)
173.00
MW-2
(170.96)
AWD-1
(171.19)
172.00
167.00
18WW10
(167.23)
LHAAP-18
AWD-3
(171.76)
101
(185.55)
(Not Used)
171.00
18CPTMW24
(171.12)
MW-22
(170.49)
MW-17
(168.01)
BGPZ-2
(169.10)
MW-10
(167.45)
MW-9
(169.78)
MW-23
(171.28)
169:00
BGPZ-10
(168.09)
129
(169.28)
171.00
1824DPTMW05
(NM)
170.00
18CPTMW14
(170.28)
168.00
MW-18
(168.78)
MW-8
(170.10)
170:00
MW-7
(169.54)
LHAAP-39
Groundwater Treatment Plant
BGPZ-1
(176.07)
(Not Used)
126
(170.49)
102
(173.40)
(Not Used)
MW-19
(168.99)
18CPTMW22R
(175.51)
(Not Used)
MW-20
(176.59)
(Not Used)
130
(168.34)
Unnamed Ditch
SCUDDAY AVE
18CPTMW26
(164.08)
(Not Used)
AVE "Q"
LHAAP-17
169.00
17WW08
(168.64)
170.00
18WW14
(169.96)
C-09
(169.94)
C-07
(168.26)
169.00
BOBBY JONES RD.
HAYSTACK RD.
LHAAP-19

Legend:
- Shallow Monitoring Well Location (inside ICTs)
- Shallow Monitoring Well Location (outside ICTs)
- Shallow Piezometer Location (inside ICTs)
- Shallow Piezometer Location (outside ICTs)
- (170.49) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Shallow Zone (July 26, 2022) LHAAP-18/24

Figure B-1

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/5/2022	MRM

01131891

TUSCON AVE
TALVEY AVE
LHAAP-35C (53)
18WW05 (166.08)
166.00
C-06 (165.95)
166.00
Harrison Bayou
C-05 (166.14)
18WW20 (167.00)
18CPTMW16 (166.54) (Not Used)
18WW07 (NM)
18CPTMW19 (170.09)
18CPTMW18 (168.46)
18CPTMW15 (167.61)
BGPZ-5 (168.79)
18WW22 (168.74)
1824DPTMW01 (168.92)
18WW25 (165.40)
18WW08 (166.20)
BGPZ-6 (169.74)
1824DPTMW03 (169.18)
170.00
AWD-4 (170.47)
BGPZ-7 (168.50)
125 (170.95)
1824DPTMW02 (172.48)
18WW17 (NM)
MW-5 (169.58)
MW-4 (170.75)
169.00
109 (169.99)
MW-6 (169.12)
MW-3 (169.96)
166.00
18WW24 (166.40)
18CPTMW23 (167.70)
BGPZ-4 (167.28)
LHAAP-24
172.00
171.00
MW-16 (168.18)
MW-11 (168.28)
167.00
BGPZ-3 (168.30)
BGPZ-11 (169.56)
169.00
168
BGPZ-8 (167.99)
1824DPTMW04 (169.73)
123 (172.70)
18CPTMW04 (172.38)
MW-2 (171.43)
MW-21 (170.00)
170.00
AWD-2 (171.50)
MW-1 (172.34)
BGPZ-9 (169.65)
C-08 (170.25)
C-02 (169.00)
MW-12 (168.61)
18WW10 (167.76)
MW-10 (168.76)
120 (171.01)
BGPZ-12 (Plugged)
AWD-3 (172.42)
18CPTMW24 (169.69)
101 (185.98) (Not Used)
LHAAP-18
AWD-1 (171.73)
168.00
MW-17 (168.72)
MW-22 (171.29)
BGPZ-2 (169.19)
MW-9 (169.93)
129 (171.45)
MW-23 (172.01)
169.00
BGPZ-10 (168.23)
172.00
1824DPTMW05 (171.57)
18CPTMW14 (171.09)
MW-8 (170.18)
MW-18 (170.33)
171.00
169.00
MW-7 (170.14)
LHAAP-39
171.00
BGPZ-1 (176.30) (Not Used)
126 (170.82)
102 (173.55) (Not Used)
MW-19 (169.65)
18CPTMW22R (174.71) (Not Used)
130 (169.87)
18CPTMW26 (164.31) (Not Used)
MW-20 (173.98) (Not Used)
Unnamed Ditch
SCUDDAY AVE
LHAAP-17
17WW08 (169.93)
AVE "Q"
170.00
18WW14 (169.72)
C-09 (170.35)
169.00
C-07 (168.40)
HAYSTACK RD.
LHAAP-19
BOBBY JONES RD.
Groundwater Treatment Plant

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

Legend:

- Shallow Monitoring Well Location (inside ICTs)
- Shallow Monitoring Well Location (outside ICTs)
- Shallow Piezometer Location (inside ICTs)
- Shallow Piezometer Location (outside ICTs)
- (170.35) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Shallow Zone (August 31, 2022) LHAAP-18/24

Figure B-2

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/5/2022	MRM

01131892

TUSCON AVE
TALVEP AVE
LHAAP-35C (53)
Harrison Bayou
Unnamed Ditch
SCUDDAY AVE
AVE "Q"
BOBBY JONES RD.
HAYSTACK RD.
LHAAP-17
LHAAP-18
LHAAP-19
LHAAP-24
LHAAP-39

18WW05 (165.72)
C-06 (165.57)
166.00
C-05 (165.76)
18WW20 (166.62)
18CPTMW16 (166.21) (Not Used)
18WW07 (NM)
18CPTMW19 (169.73)
18WW22 (168.40)
1824DPTMW03 (NM)
18CPTMW18 (168.12)
1824DPTMW01 (NM)
BGPZ-6 (169.37)
125 (170.58)
18WW08 (165.95)
18WW17 (NM)
AWD-4 (170.12)
170.00
MW-5 (169.23)
MW-4 (170.42)
BGPZ-7 (168.14)
BGPZ-5 (168.45)
18WW25 (165.13)
18CPTMW15 (167.24)
169.00
MW-6 (168.78)
1824DPTMW02 (NM)
MW-3 (169.65)
BGPZ-4 (166.95)
18WW24 (166.07)
166.00
18CPTMW23 (167.43)
109 (169.61)
168.00
BGPZ-8 (167.57)
1824DPTMW04 (NM)
167.00
MW-11 (167.92)
BGPZ-11 (169.14)
BGPZ-3 (167.92)
MW-16 (167.80)
172
123 (172.31)
18CPTMW04 (172.00)
MW-2 (171.02)
MW-21 (169.68)
C-08 (169.97)
120 (170.74)
AWD-2 (171.23)
MW-1 (172.03)
BGPZ-9 (169.28)
MW-12 (168.30)
18WW10 (167.42)
C-02 (168.58)
BGPZ-12 (Plugged)
AWD-3 (172.07)
18CPTMW24 (169.32)
AWD-1 (171.38)
101 (185.63) (Not Used)
MW-10 (168.42)
172.00
MW-22 (171.02)
168.00
MW-17 (168.31)
BGPZ-2 (168.80)
MW-9 (169.58)
MW-23 (171.72)
169.00
BGPZ-10 (167.93)
129 (171.21)
1824DPTMW05 (NM)
18CPTMW14 (170.73)
MW-18 (170.01)
170.00
MW-8 (169.80)
171.00
LHAAP-39
MW-7 (169.76)
126 (170.45)
Groundwater Treatment Plant
102 (173.19) (Not Used)
BGPZ-1 (175.96) (Not Used)
169.00
18CPTMW22R (174.36) (Not Used)
MW-19 (169.24)
130 (169.61)
MW-20 (173.67) (Not Used)
18CPTMW26 (163.95) (Not Used)
17WW08 (169.63)
18WW14 (169.40)
C-09 (170.04)
170.00
169.00
C-07 (168.03)

Legend:
- Shallow Monitoring Well Location (inside ICTs)
- Shallow Monitoring Well Location (outside ICTs)
- Shallow Piezometer Location (inside ICTs)
- Shallow Piezometer Location (outside ICTs)
- (170.04) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

Notes:
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0 75 150 300 Feet

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Shallow Zone (September 28, 2022) LHAAP-18/24

Figure B-3

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/5/2022	MRM

01131893

TUSCON AVE

TALVEP AVE

LHAAP-35C (53)

Harrison Bayou

18WW04
(165.77)

166.00

166.50

18WW19
(166.83)

18WW21
(167.66)

18CPTMW19SW
(168.92)

C-04A
(169.09)
(Not Used)

C-04
(168.81)

18WW09
(167.00)

18CPTMW08SW
(168.79)

18CPTMW08DW
(168.22)
(Not Used)

18WW18
(168.27)

C-03
(168.92)

18CPTMW23SW
(167.38)

18CPTMW01SW
(172.17)

18CPTMW01DW
(168.91)
(Not Used)

LHAAP-24

167.00

1824DPTMW06
(NM)

18CPTMW04SW
(168.58)

18WW06
(168.72)

18CPTMW07
(170.14)

172.00

171.50

171.00

170.50

170.00

18WW02
(168.87)

MW-13
(167.41)

LHAAP-18

MW-14
(171.79)

18WW03
(170.08)

18WW11
(167.04)

167.50

18CPTMW06
(169.13)

18CPTMW03SW
(169.45)

169.50

BOBBY JONES RD.

18CPTMW10DW
(168.41)
(Not Used)

168.00

18CPTMW10SW
(169.33)

18CPTMW12SW
(169.02)

18CPTMW12DW
(168.71)

Groundwater Treatment Plant

LHAAP-39

168.50

Unnamed Ditch

18CPTMW26SW
(167.89)

18CPTMW22DW
(168.29)

168:00

18CPTMW22SW
(168.89)

169.00

SCUDDAY AVE

LHAAP-17

169.50

AVE "Q"

C-01
(170.24)

170.00

18WW15
(170.32)

169.00

C-10
(168.99)

HAYSTACK RD.

LHAAP-19

Legend:

- Wilcox Formation Monitoring Well Location
- (168.99) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

Notes:
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0 75 150 300 Feet

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (July 26, 2022) LHAAP-18/24

Figure B-4

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/1/2022	MRM

01131894

TUSCON AVE

LHAAP-35C (53)

TALYER AVE

Harrison Bayou

18WW04
(165.94)

166.00

166.50

18WW19
(166.94)

167.00

18WW21
(167.89)

167.50

18CPTMW19SW
(167.45)

C-04A
(169.16)
(Not Used)

C-04
(168.81)

18WW09
(168.11)

C-03
(169.31)

18WW18
(169.12)

18CPTMW08DW
(168.49)
(Not Used)

18CPTMW08SW
(169.16)

18CPTMW01DW
(169.34)
(Not Used)

18CPTMW01SW
(170.36)

LHAAP-24

1824DPTMW06
(168.82)

168.00

18CPTMW23SW
(168.30)

18CPTMW07
(169.04)

18WW06
(168.70)

18CPTMW04SW
(169.00)

18WW02
(169.27)
(Not Used)

170.00

18WW03
(169.30)

18WW11
(167.51)

MW-13
(168.66)

MW-14
(171.26)

171.00

170.50

LHAAP-18

169.50

18CPTMW06
(169.23)

168.00

170.00

18CPTMW03SW
(169.22)

169.50

18CPTMW10DW
(168.96)
(Not Used)

18CPTMW10SW
(169.43)

168.50

18CPTMW12SW
(169.28)

18CPTMW12DW
(169.25)

LHAAP-39

169.00

Groundwater Treatment Plant

Unnamed Ditch

18CPTMW22SW
(169.27)

18CPTMW22DW
(169.63)

18CPTMW26SW
(169.53)

SCUDDAY AVE

AVE "O"

169.50

LHAAP-17

C-01
(170.34)

170.00

18WW15
(170.22)

C-10
(169.35)

BOBBY JONES RD.

HAYSTACK RD.

LHAAP-19

Legend:

- Wilcox Formation Monitoring Well Location
- (169.35) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE — High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

Notes:
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0 75 150 300 Feet

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (August 31, 2022) LHAAP-18/24

Figure B-5

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/1/2022	MRM

01131895

TUSCON AVE

TALVEP AVE

LHAAP-35C (53)

Harrison Bayou

18WW04
(165.58)

166.00

166.50

18WW19
(166.58)

167.00

18WW21
(167.50)

18CPTMW19SW
(167.11)

C-04
(168.44)

167.50

18WW09
(167.75)

18CPTMW08SW
(169.01)

C-04A
(168.80)
(Not Used)

18WW18
(168.77)

C-03
(168.93)

18CPTMW08DW
(168.13)
(Not Used)

18CPTMW01SW
(170.09)

18CPTMW01DW
(169.02)
(Not Used)

18CPTMW23SW
(168.04)

1824DPTMW06
(NM)

LHAAP-24

18WW06
(168.35)

18CPTMW04SW
(168.66)

18CPTMW07
(168.69)

18WW02
(168.90)
(Not Used)

170.00

MW-14
(170.92)

MW-13
(168.27)

18WW03
(168.95)

18WW11
(167.22)

169:50

170.50

170.00

LHAAP-18

167.50

169.50

18CPTMW06
(168.95)

18CPTMW03SW
(168.85)

168.00

18CPTMW10DW
(168.60)
(Not Used)

169.00

18CPTMW10SW
(169.14)

18CPTMW12SW
(168.91)

BOBBY JONES RD.

168.50

18CPTMW12DW
(168.86)

LHAAP-39

Groundwater Treatment Plant

18CPTMW22SW
(168.89)

Unnamed Ditch

169.00

18CPTMW26SW
(169.16)

18CPTMW22DW
(169.25)

SCUDDAY AVE

LHAAP-17

AVE "Q"

C-01
(170.01)

170.00

169.50

18WW15
(169.84)

C-10
(169.06)

HAYSTACK RD.

LHAAP-19

Notes:
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0 75 150 300 Feet

Legend:

- Wilcox Formation Monitoring Well Location
- (170.01) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (September 28, 2022) LHAAP-18/24

Figure B-6

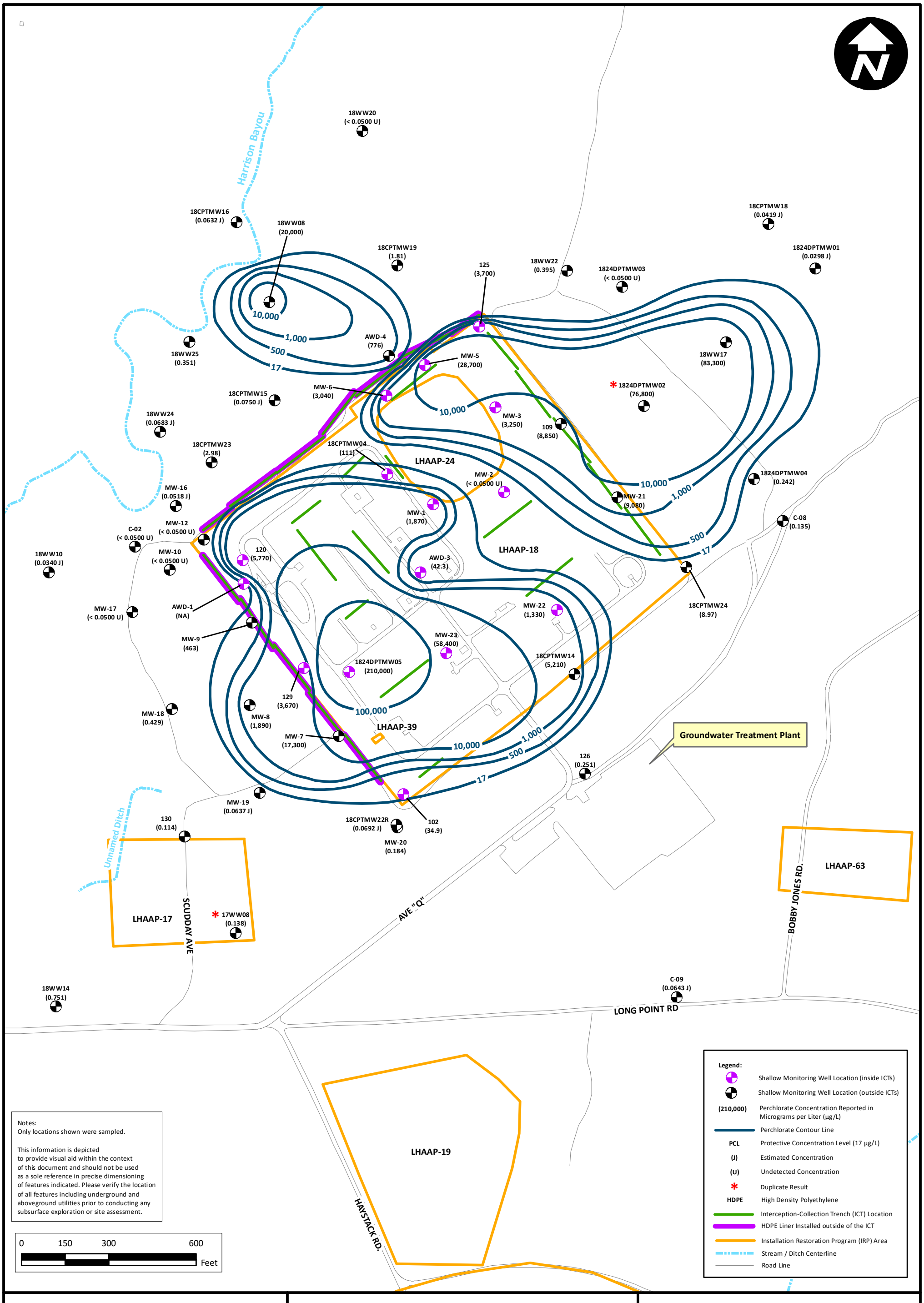
PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/1/2022	MRM

APPENDIX C
LABORATORY ANALYTICAL RESULTS FOR LHAAP-18/24
(PROVIDED ELECTRONICALLY AS A SEPARATE FILE)

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APPENDIX D
ISOPLETH CONTOUR MAPS

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bhate

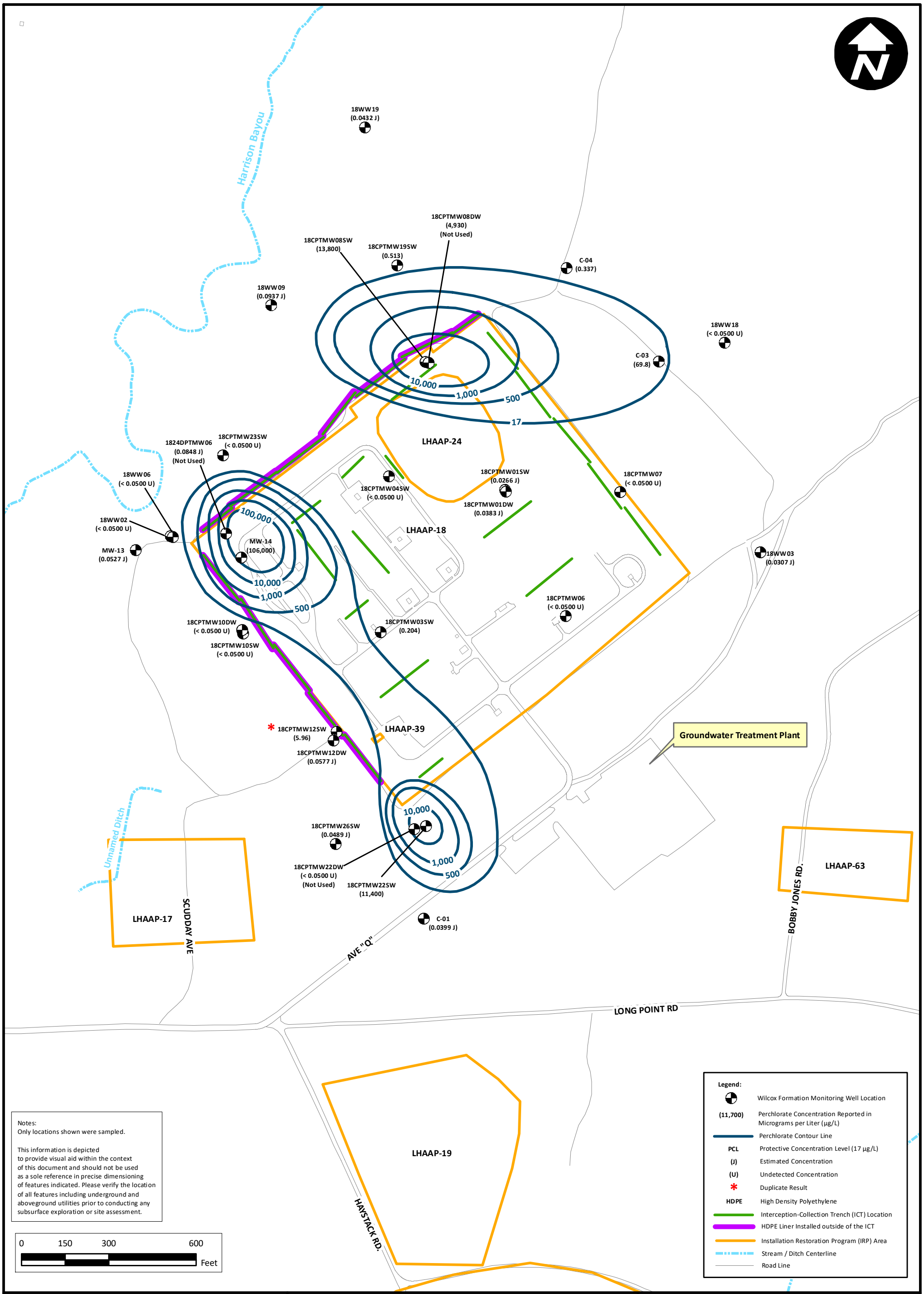
www.bhate.com

Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/5/2022	MRM

Perchlorate Isopleth Contours in Shallow Zone (August 2022)

Figure D-1



bhate

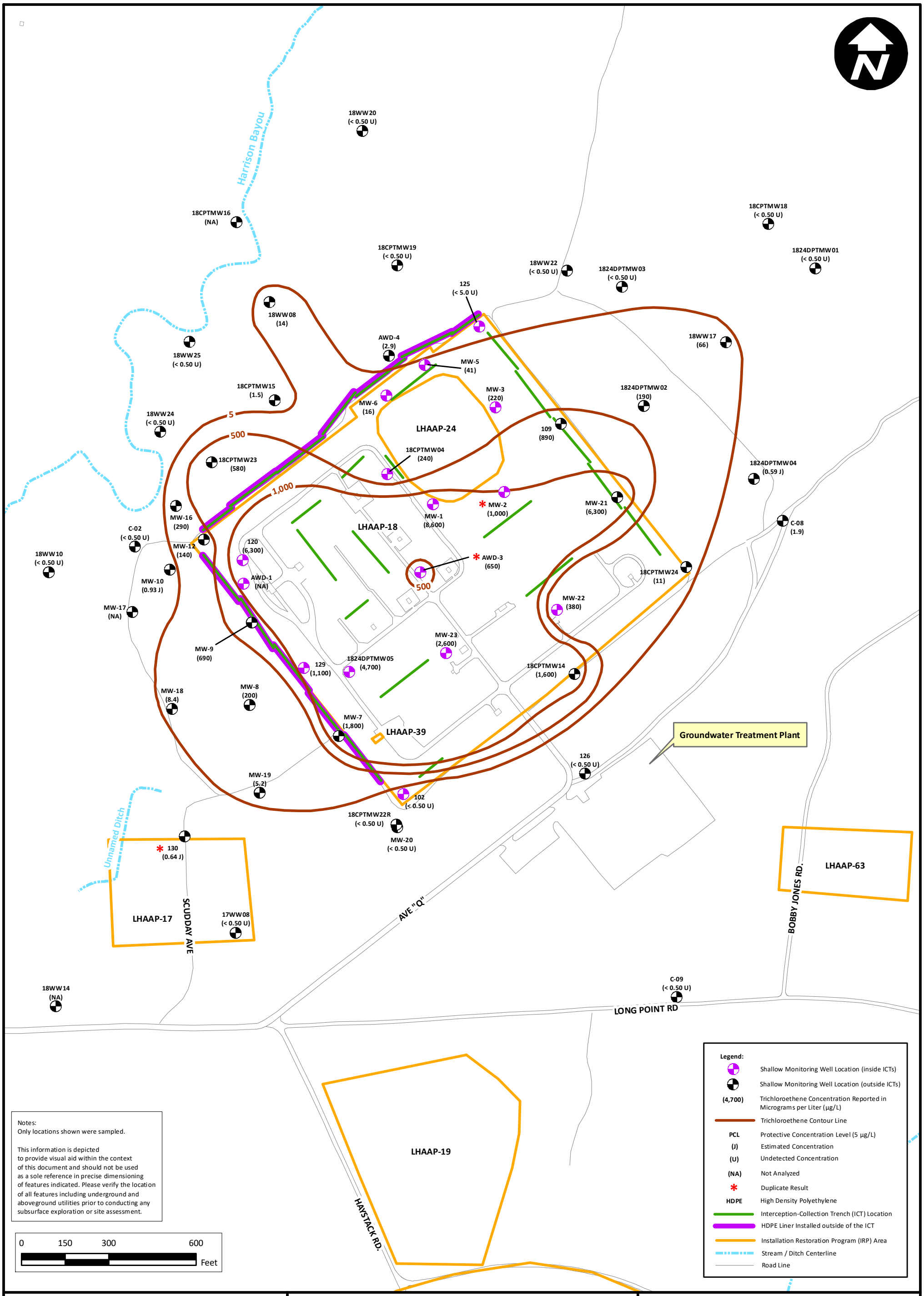
www.bhate.com

Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	11/21/2022	MRM

Perchlorate Isopleth Contours in Wilcox Formation (August 2022)

Figure D-2



bhate

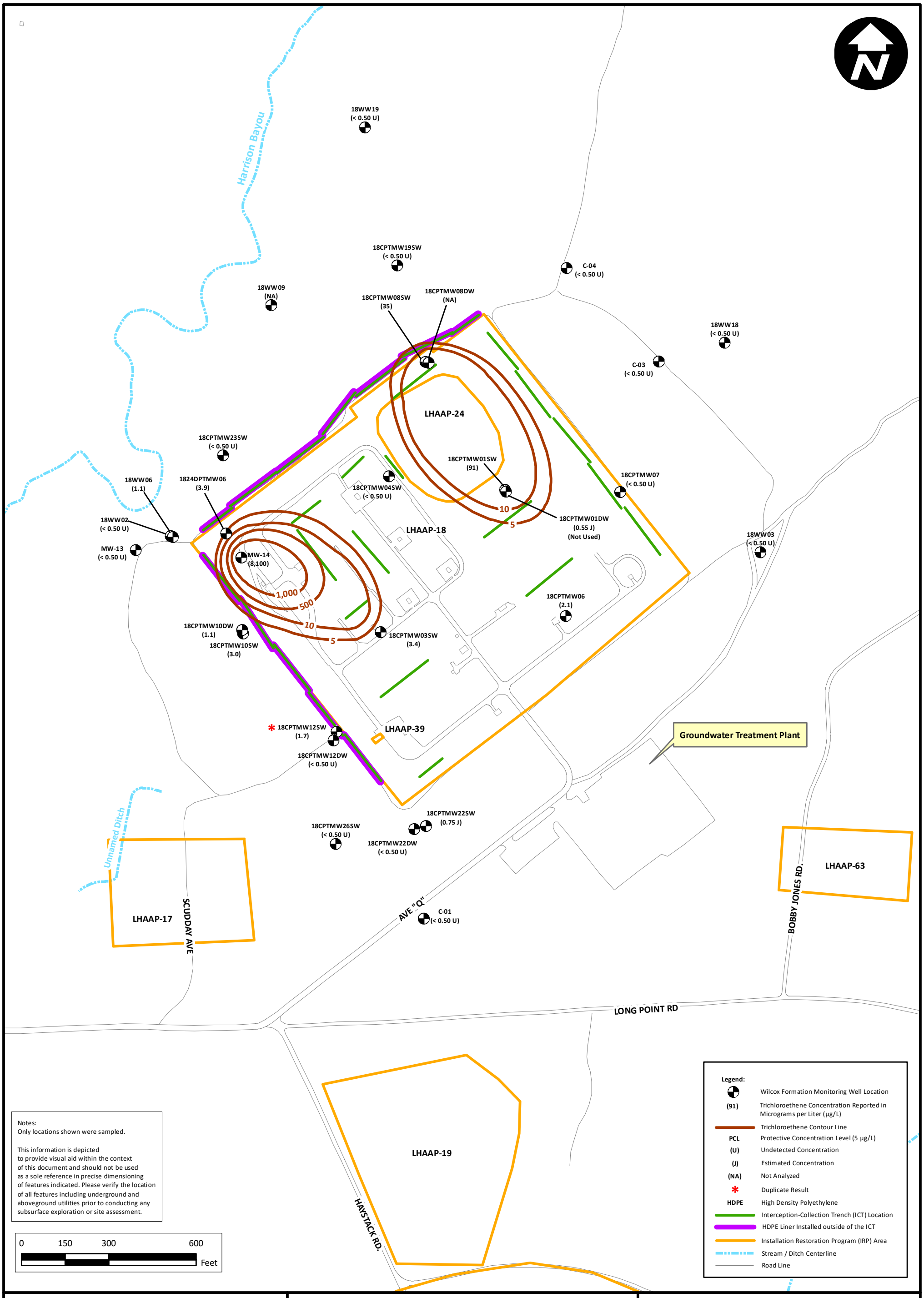
www.bhate.com

Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	11/21/2022	MRM

Trichloroethene Isopleth Contours in Shallow Zone (August 2022)

Figure D-3



bhate

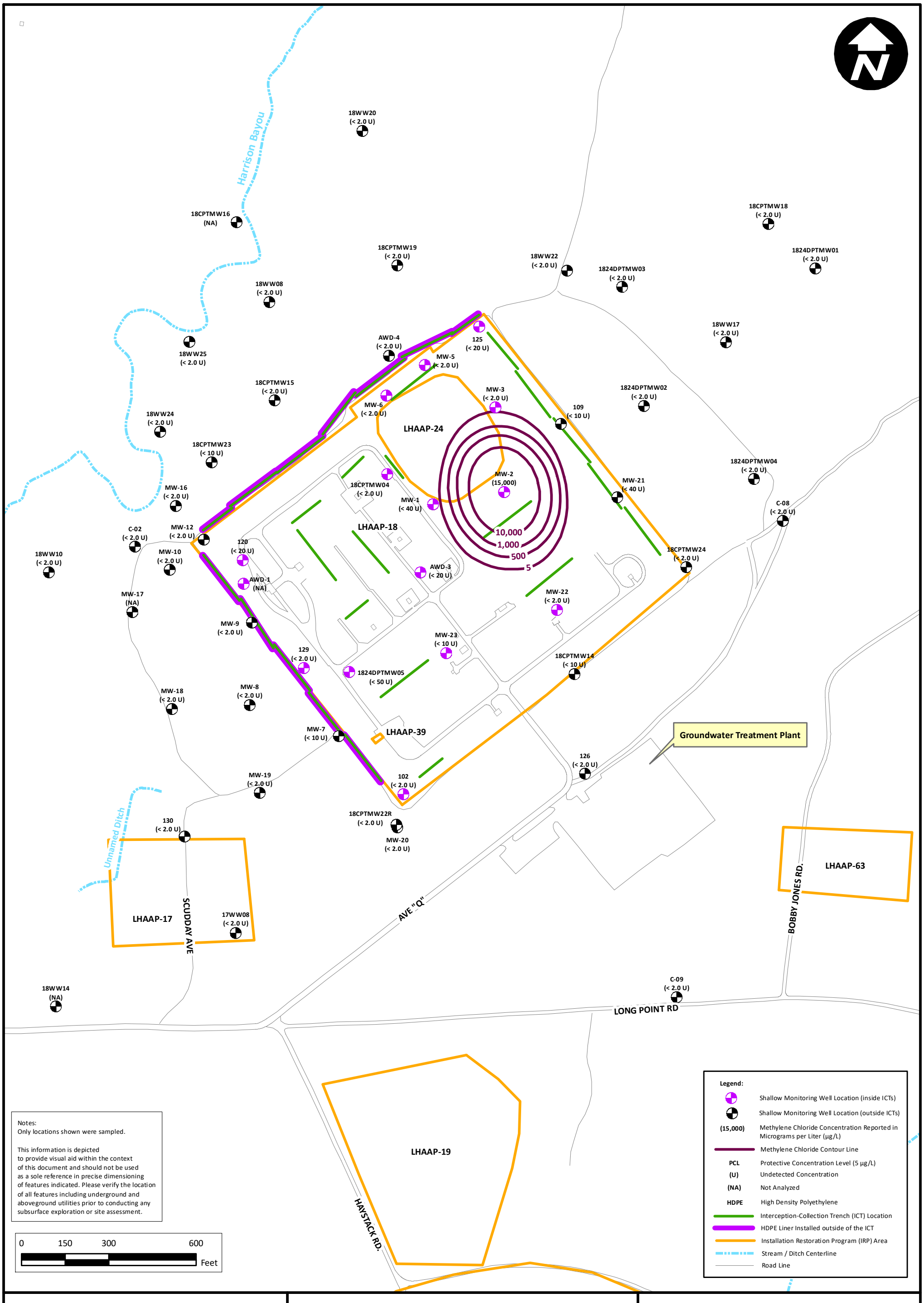
www.bhate.com

Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	11/21/2022	MRM

Trichloroethene Isopleth Contours in Wilcox Formation (August 2022)

Figure D-4



bhate

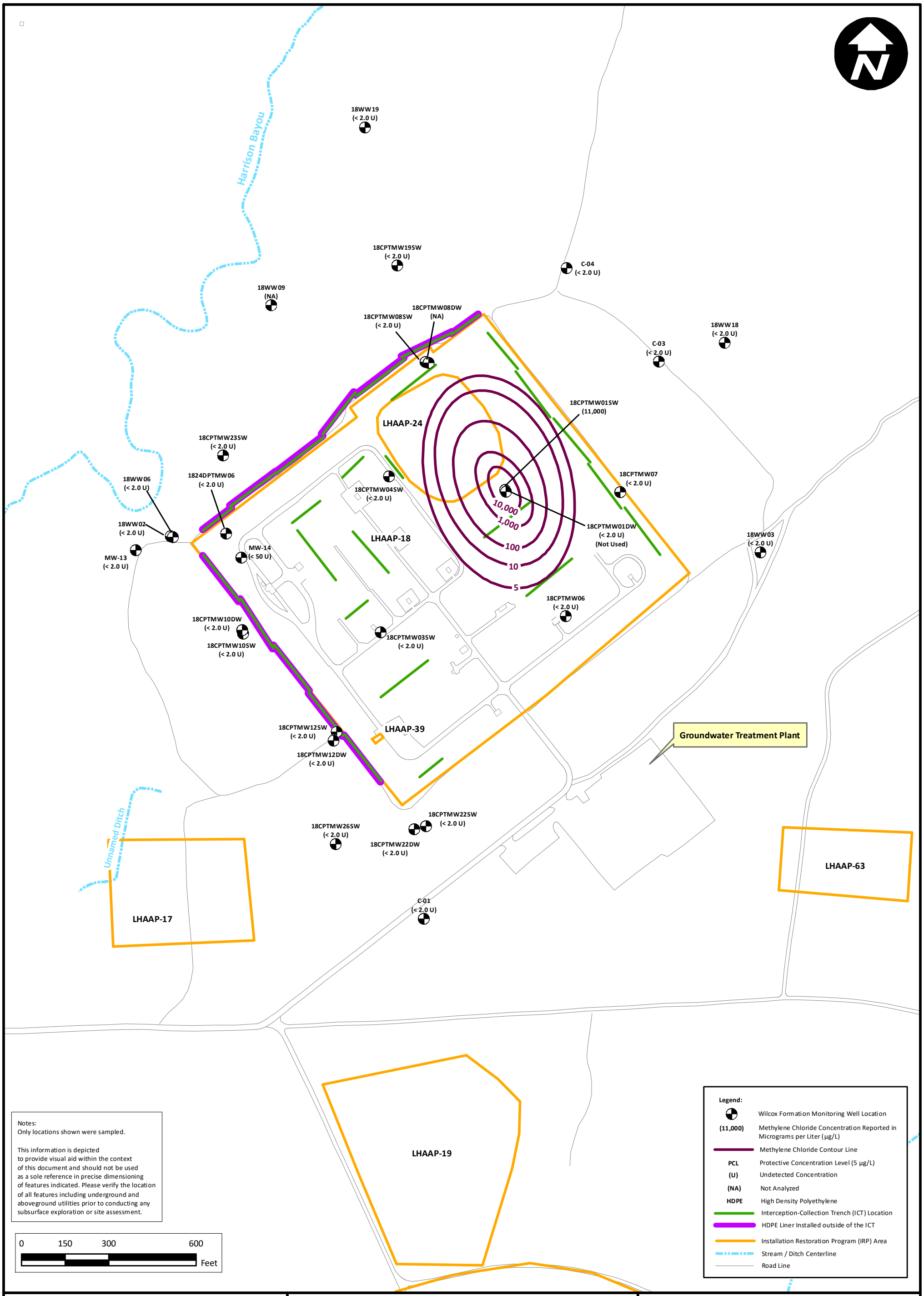
www.bhate.com

Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	12/5/2022	MRM

Methylene Chloride Isopleth Contours in Shallow Zone (August 2022)

Figure D-5



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Quarterly Evaluation Report 3rd Quarter (July – September) 2022
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	11/21/2022	MRM

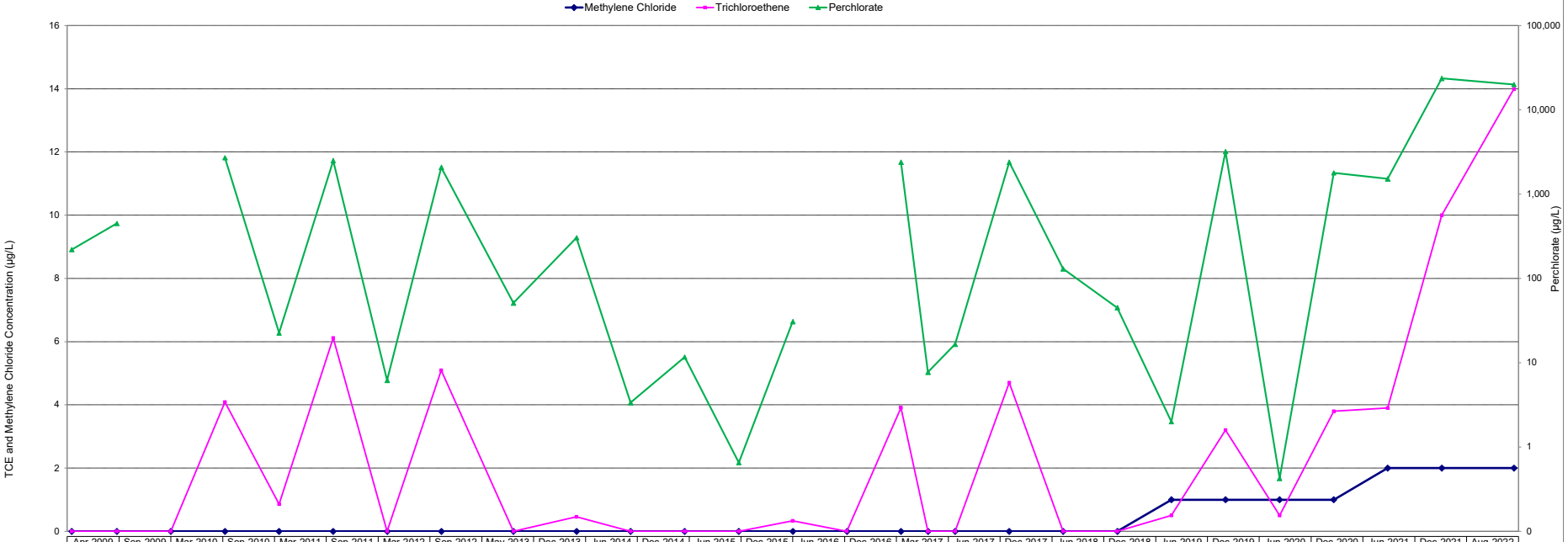
Methylene Chloride Isopleth Contours in Wilcox Formation (August 2022)

Figure D-6

APPENDIX E
MONITORING WELL TREND CHARTS

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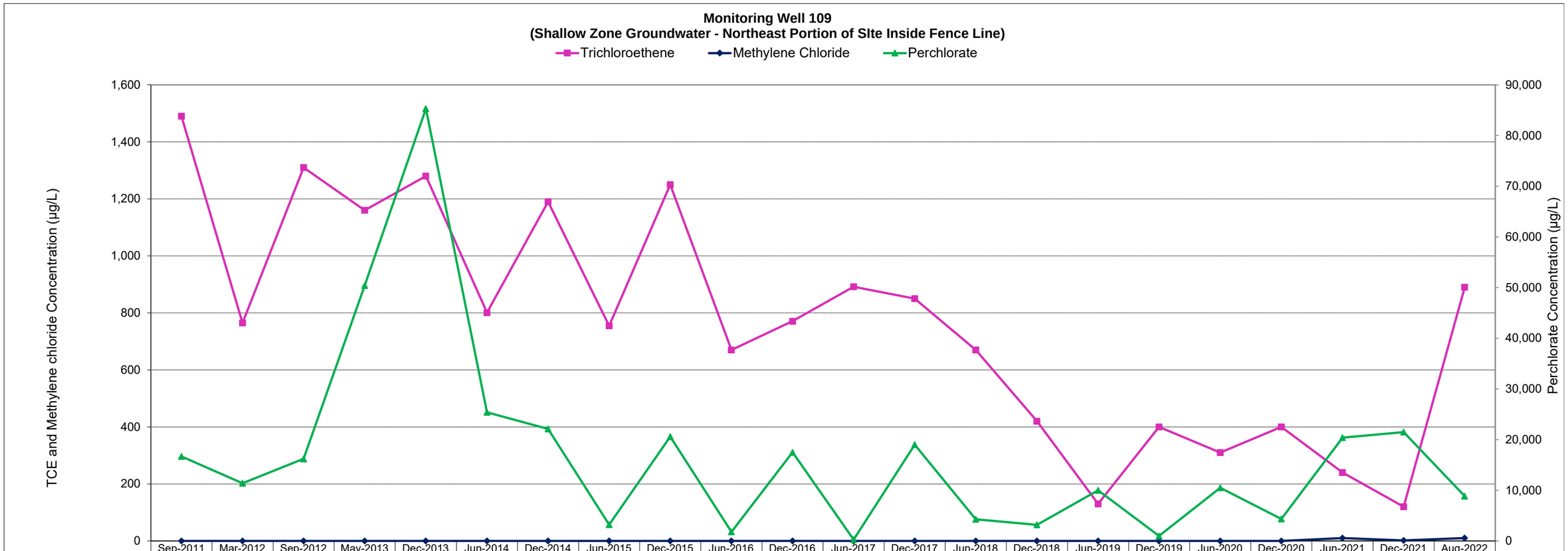
Monitoring Well 18WW08
(Shallow Zone Groundwater - North-Northwest of Site Outside the Fence Line)



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
Trichloroethene	0	0	0	4.09	0.858	6.12	0	5.09	0	0.459	0	0	0	0.331	0	3.91	0	0	4.7	0	0	0.5	3.2	0.5	3.8	3.9	10	14
Perchlorate	220	450	0	2700	22.6	2500	6.19	2080	51.2	304	3.36	11.7	0.655	30.8	0	2390	7.72	16.6	2400	130	45	2.0	3200	0.425	1790	1520	23600	20000

Sample Date

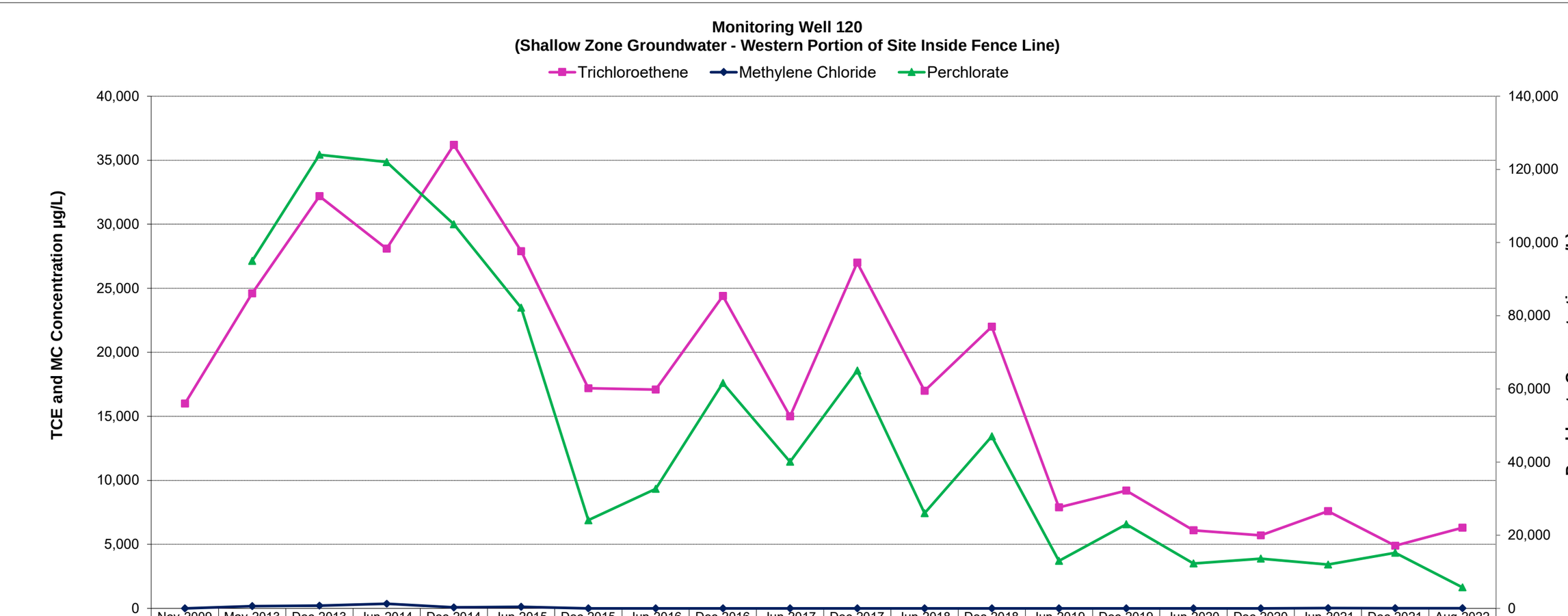
Monitoring Well 109
(Shallow Zone Groundwater - Northeast Portion of SIte Inside Fence Line)



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Trichloroethene	1490	765	1310	1160	1280	801	1190	755	1250	670	771	892	850	670	420	130	400	310	400	240	120	890
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2.0	10.0
Perchlorate	16700	11400	16200	50400	85300	25400	22100	3220	20600	1810	17500	265	19000	4300	3200	10000	1000	10500	4350	20400	21500	8850

Sample Date

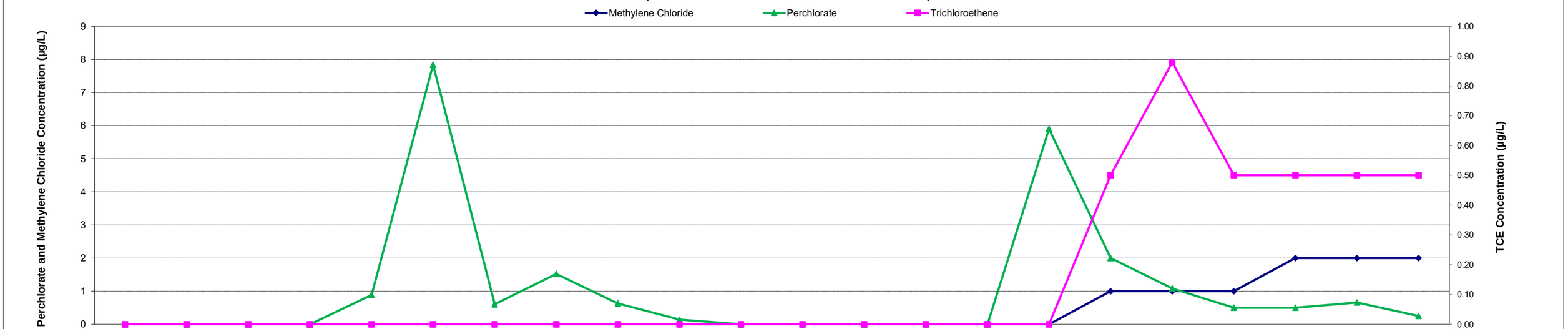
Monitoring Well 120
(Shallow Zone Groundwater - Western Portion of Site Inside Fence Line)



	Nov-2009	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Trichloroethene	16000	24600	32200	28100	36200	27900	17200	17100	24400	15000	27000	17000	22000	7900	9200	6100	5700	7600	4900	6300
Methylene Chloride	0	170	214	363	71.1	125	0	0	0	0	0	0	0	0	0	0	0	20	10	10
Perchlorate		95000	124000	122000	105000	82200	24100	32700	61600	40100	65000	26000	47000	13000	23000	12300	13600	12000	15200	5770

Sample Date

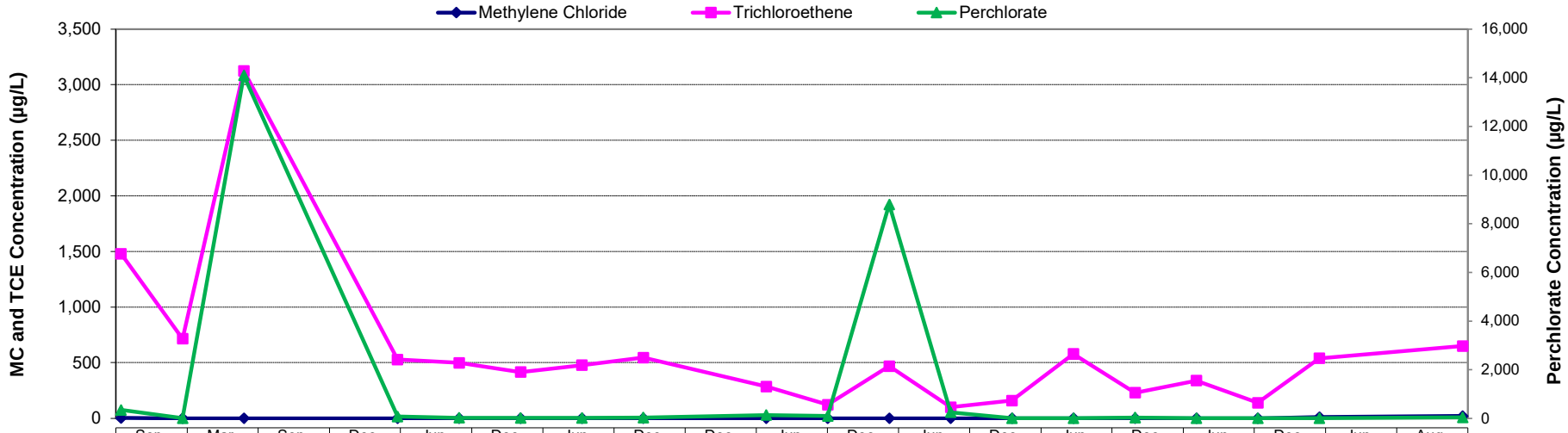
Monitoring Well 126
(Shallow Zone Groundwater - Northwest of GWTP)



	Mar-2011	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	2.0	2.0	2.0
Perchlorate	0	0	0	0	0.887	7.84	0.602	1.52	0.629	0.14	0	0	0	0	0	5.9	2.0	1.08	0.5	0.5	0.658	0.251
Trichloroethene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.88	0.5	0.5	0.5	0.5

Sample Date

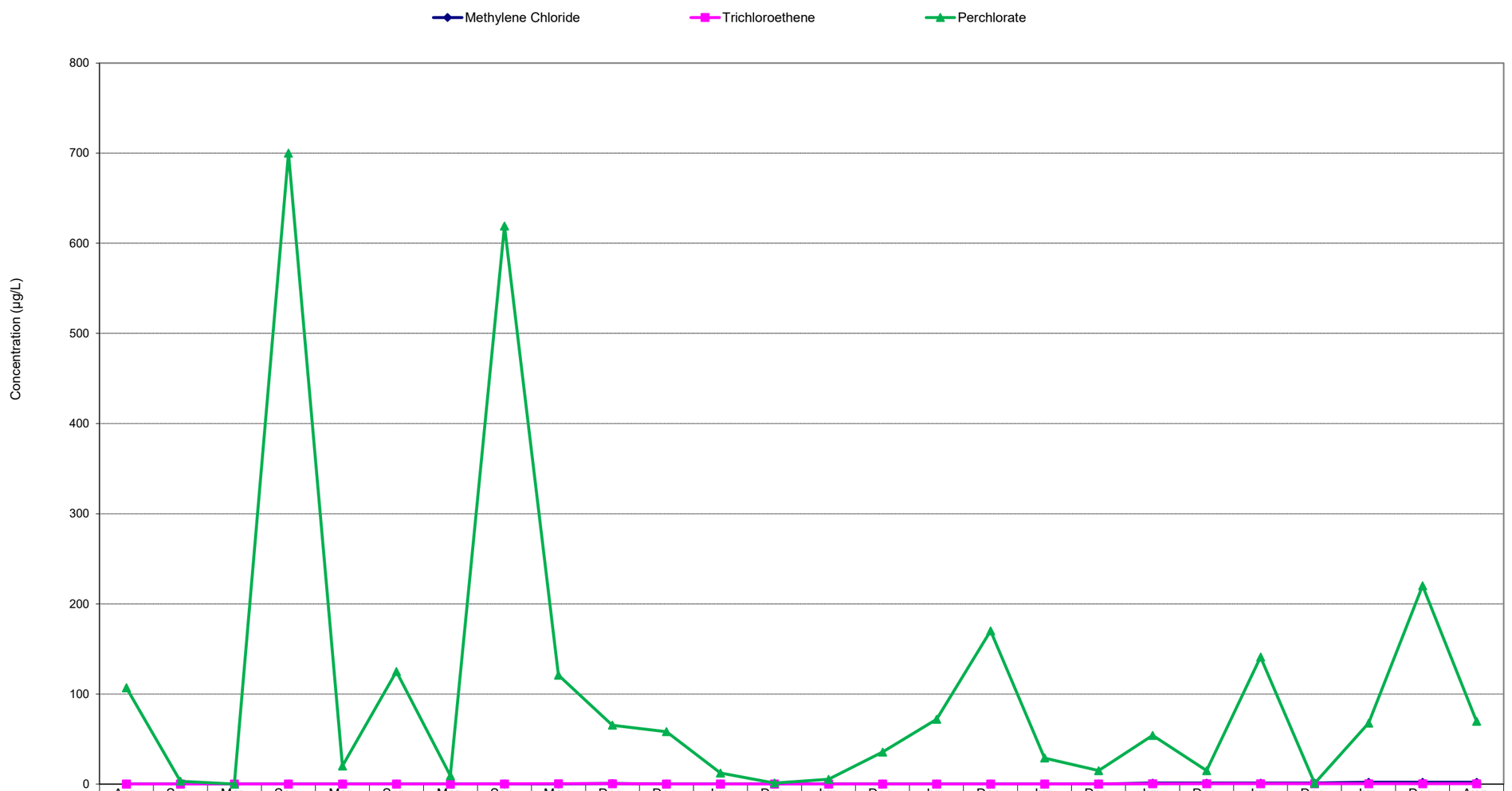
Monitoring Well AWD-3
(Shallow Zone Groundwater - Inside CT Perimeter)



	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Aug-2022
Methylene Chloride	2.92J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20
Trichloroethene	1480	716	3125	530	499	417	477	547	285	122	470	100	160	580	230	340	140	540	650
Perchlorate	342	3.88	14100	67.2	25	13.6	8.33	33.8	140	95.4	8800	250	6.9	1.8	32	4.07	7.56	1.94	42.3

Sample Date

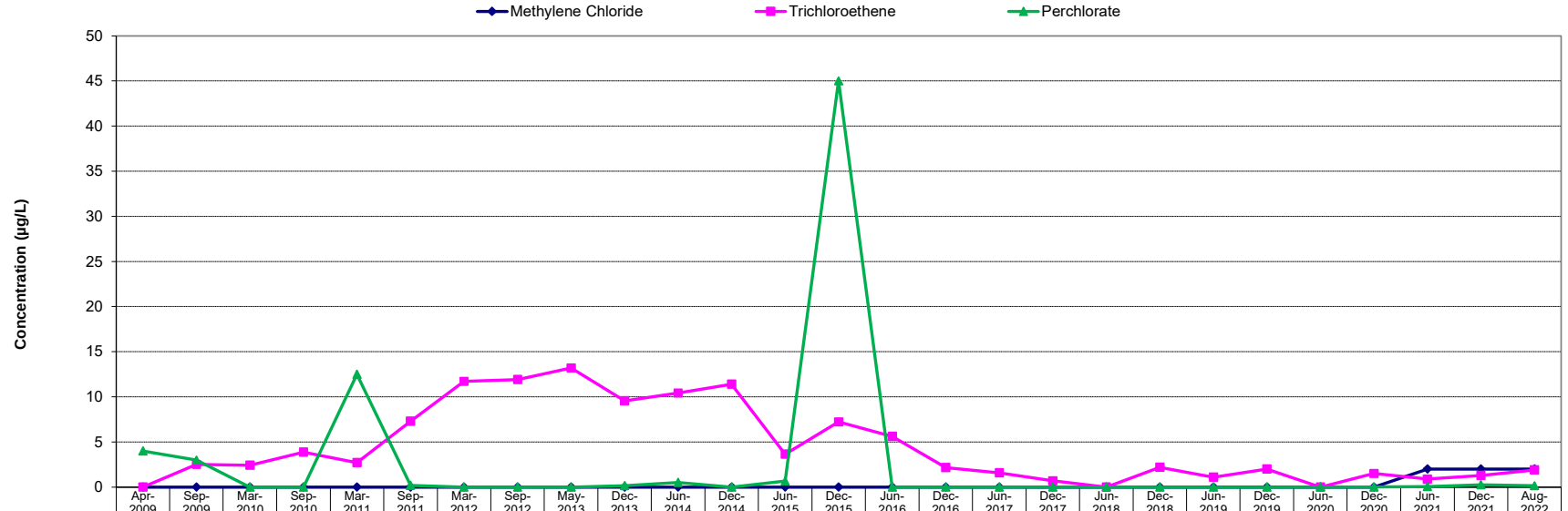
Monitoring Well C-03
(Wilcox Formation - Northest of Site Outside the Fence Line)



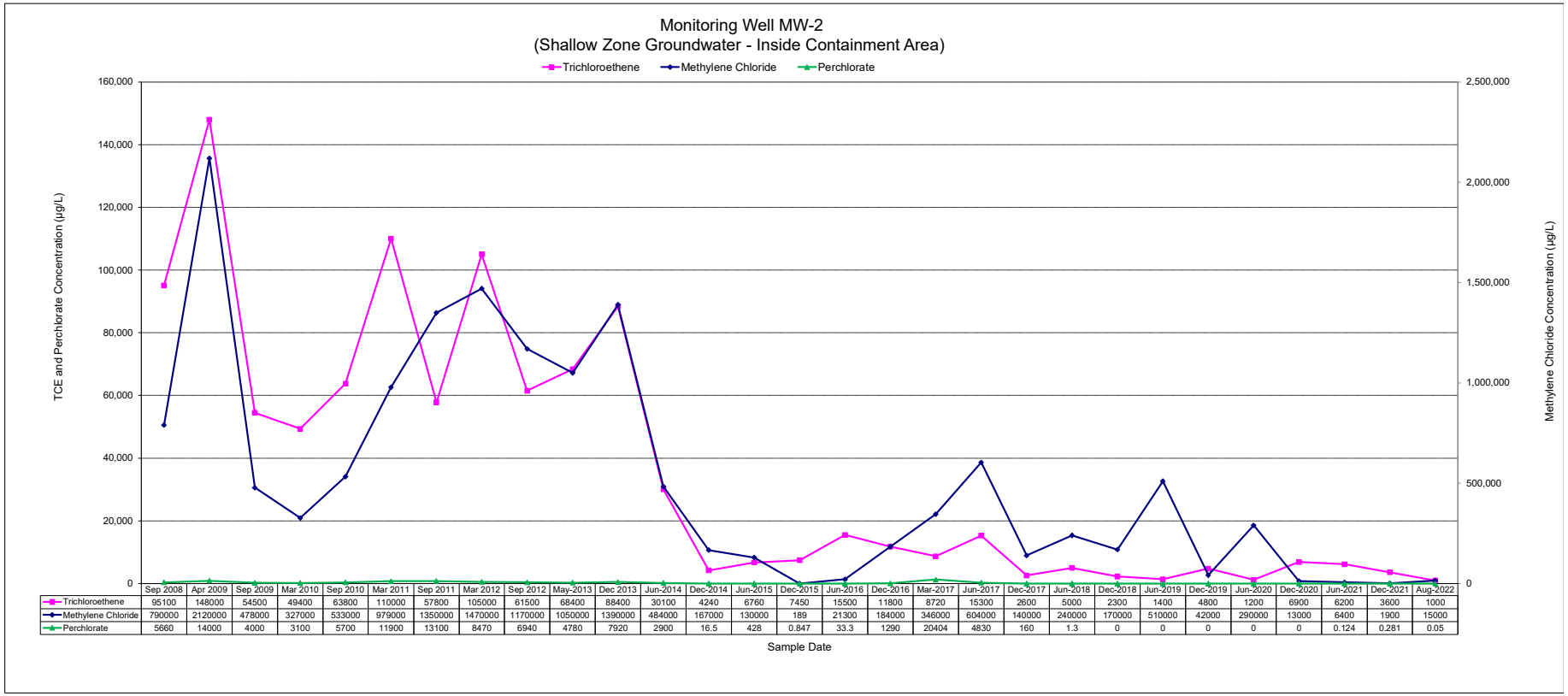
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2019	Dec-2019	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0.336	0.738	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
Trichloroethene	0	0	0	0	0	0	0	0.267	0.476	0.491	0	0	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Perchlorate	107	3.2	0	700	20	125	9.45	619	121	65.3	58.3	12.3	1.35	5.48	35.6	72	170	29	15	54	15	141	0.97	67.7	220	69.8

Sample Date

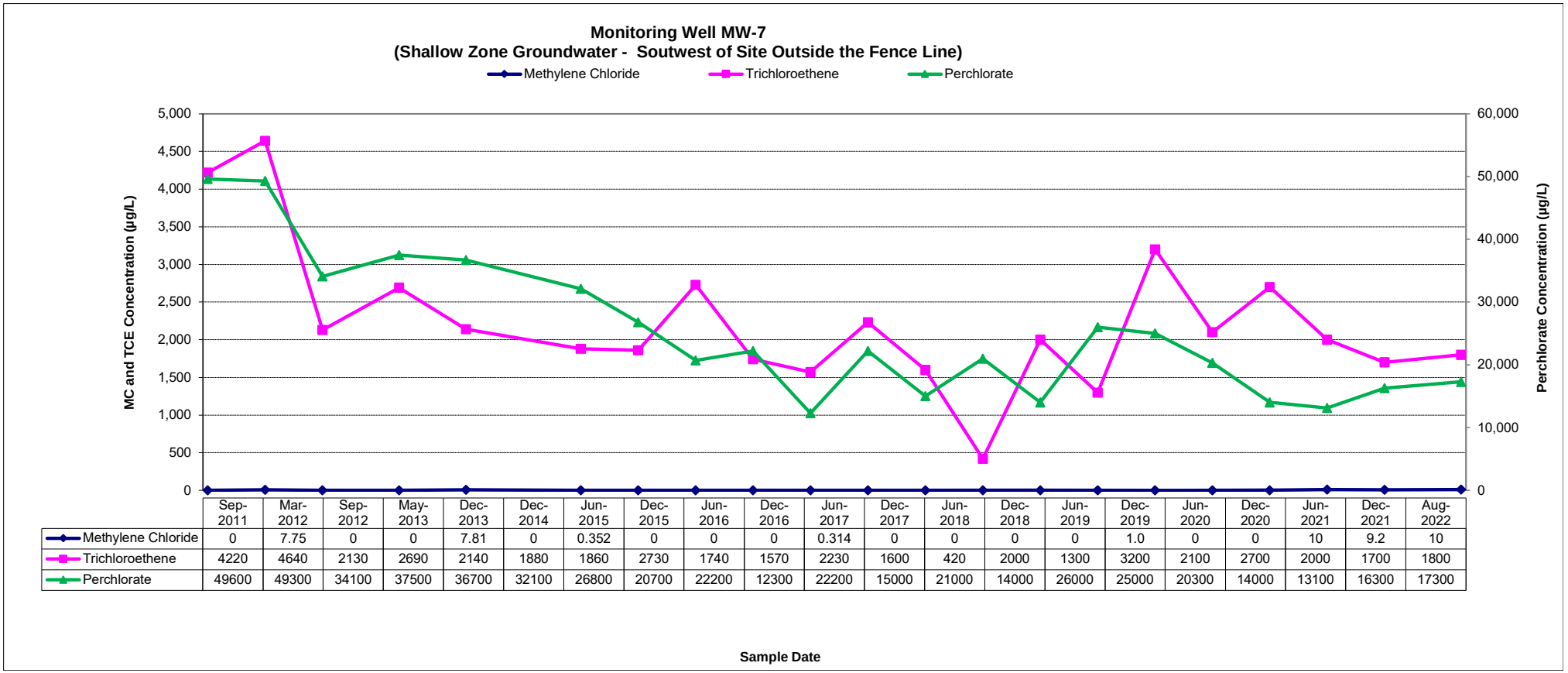
Monitoring Well C-08
(Shallow Zone Groundwater - East of Site Outside the Fence Line)



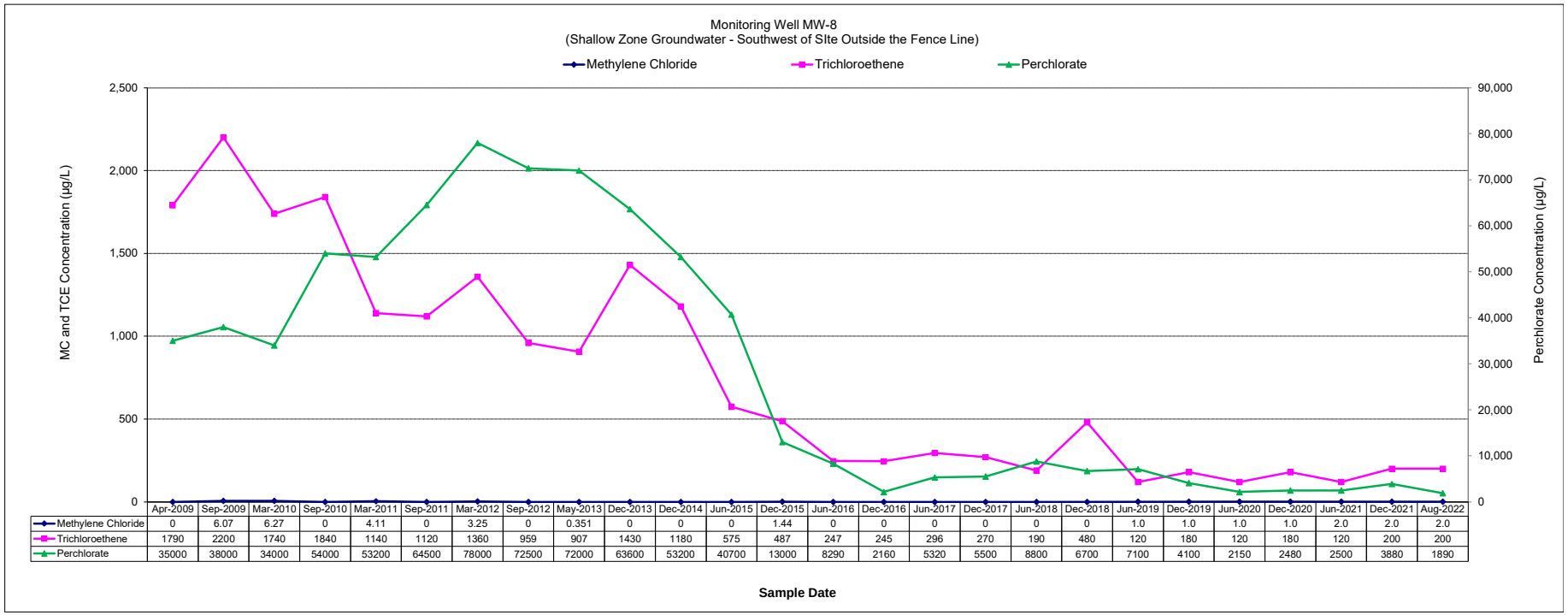
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	2.0	2.0
Trichloroethene	0	2.49	2.41	3.87	2.7	7.3	11.7	11.9	13.2	9.54	10.4	11.4	3.64	7.21	5.61	2.18	1.57	0.7	0	2.2	1.1	2	0	1.5	0.87	1.3	1.9
Perchlorate	4	3	0	0	12.5	0.179J	0	0	0	0.17	0.501	0	0.648	45	0	0	0	0	0	0	0	0	0	0	0.05	0.273	0.135



	Sep 2008	Apr 2009	Sep 2009	Mar 2010	Sep 2010	Mar 2011	Sep 2011	Mar 2012	Sep 2012	May-2013	Dec 2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Trichloroethene	95100	148000	54500	49400	63800	110000	57800	105000	61500	68400	88400	30100	4240	6760	7450	15500	11800	8720	15300	2600	5000	2300	1400	4800	1200	6900	6200	3600	1000
Methylene Chloride	790000	2120000	478000	327000	533000	979000	1350000	1470000	1170000	1050000	1390000	484000	167000	130000	189	21300	184000	346000	604000	140000	240000	170000	510000	42000	290000	13000	6400	1900	15000
Perchlorate	5660	14000	4000	3100	5700	11900	13100	8470	6940	4780	7920	2900	16.5	428	0.847	33.3	1290	20404	4830	160	1.3	0	0	0	0	0	0.124	0.281	0.05

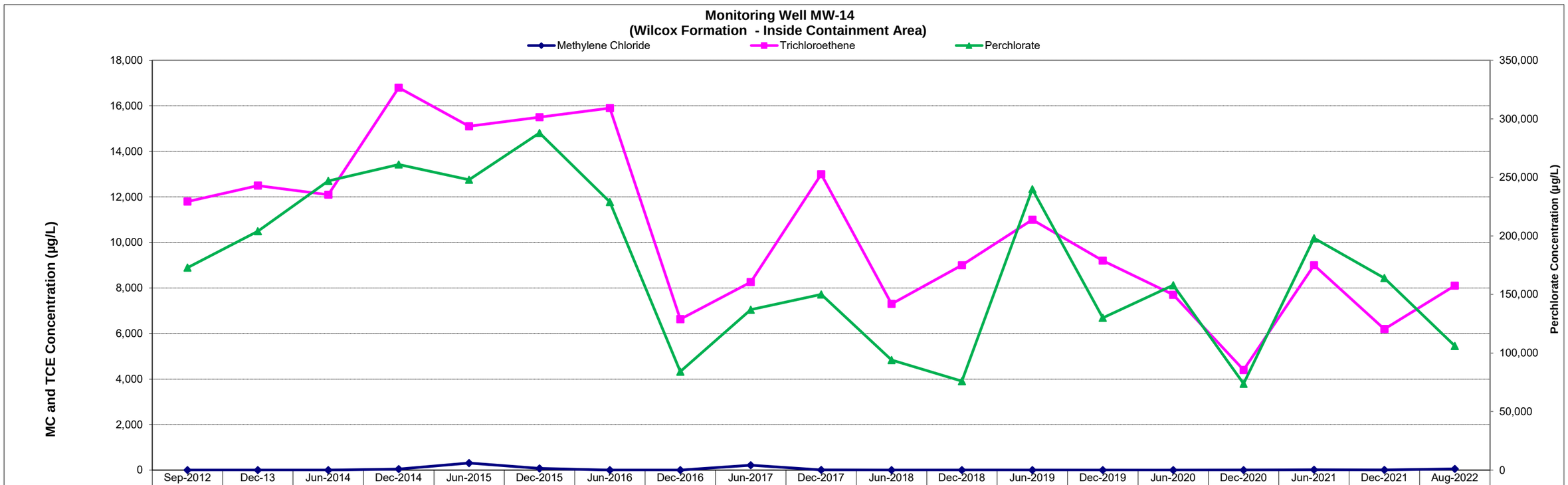


	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	7.75	0	0	7.81	0	0.352	0	0	0	0.314	0	0	0	0	1.0	0	0	10	9.2	10
Trichloroethene	4220	4640	2130	2690	2140	1880	1860	2730	1740	1570	2230	1600	420	2000	1300	3200	2100	2700	2000	1700	1800
Perchlorate	49600	49300	34100	37500	36700	32100	26800	20700	22200	12300	22200	15000	21000	14000	26000	25000	20300	14000	13100	16300	17300



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	6.07	6.27	0	4.11	0	3.25	0	0.351	0	0	0	1.44	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
Trichloroethene	1790	2200	1740	1840	1140	1120	1360	959	907	1430	1180	575	487	247	245	296	270	190	480	120	180	120	180	120	200	200
Perchlorate	35000	38000	34000	54000	53200	64500	78000	72500	72000	63600	53200	40700	13000	8290	2160	5320	5500	8800	6700	7100	4100	2150	2480	2500	3880	1890

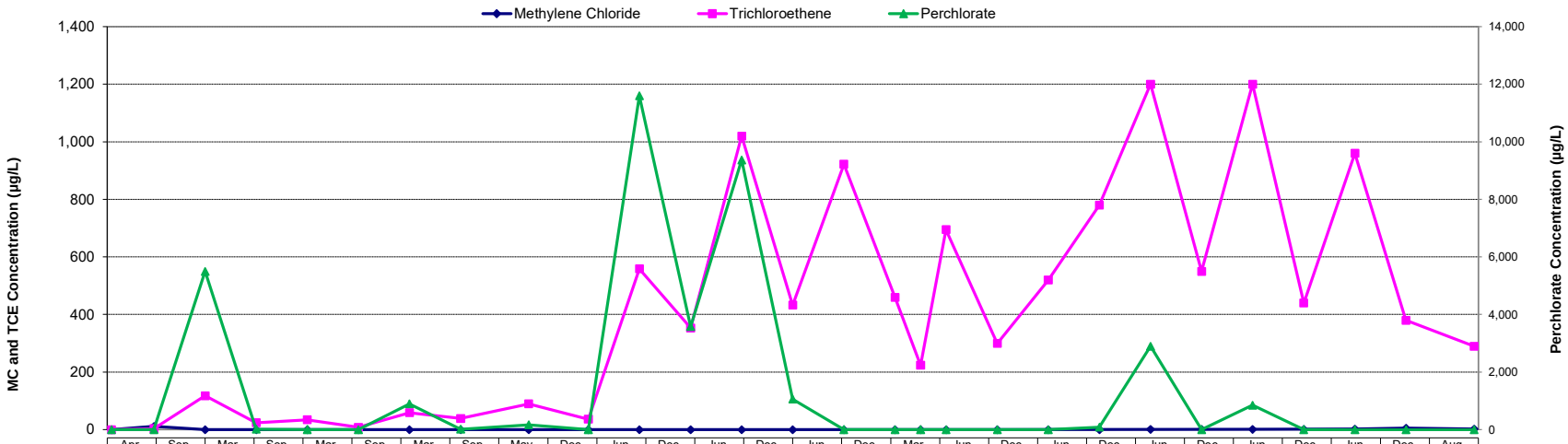
Monitoring Well MW-14
(Wilcox Formation - Inside Containment Area)



	Sep-2012	Dec-13	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	1.6	0.689	5.65	42.5	312	76.8	0	0	216	11	0	0	0	0	0	0	20	10	50
Trichloroethene	11800	12500	12100	16800	15100	15500	15900	6630	8260	13000	7300	9000	11000	9200	7700	4400	9000	6200	8100
Perchlorate	173000	204000	247000	261000	248000	288000	229000	84200	137000	150000	94000	76000	240000	130000	158000	73800	198000	164000	106000

Sample Date

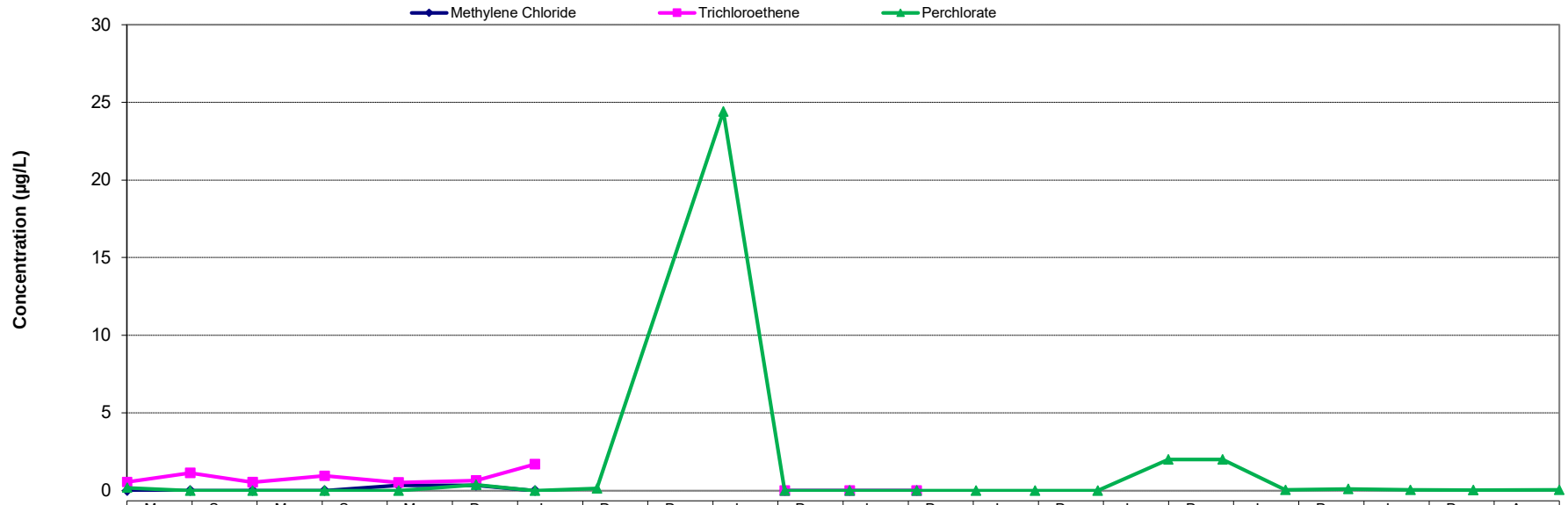
Monitoring Well MW-16
(Shallow Zone Groundwater - West of Site Outside of the Fence Line)



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	11.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	5.0	2.0
Trichloroethene	0	3.49	118	24.3	34.5	8.52	59.1	38.7	89.9	36.6	559	353	1020	433	922	460	224	695	300	520	780	1200	550	1200	440	960	380	290
Perchlorate	0	0	5500	17	5.24	0	896	16.5	166	1.25	11600	3580	9370	1060	0.615	0	1.3	0	0	0	90	2900	1.8	848	1.07	0.05	0.0269	0.0518

Sample Date

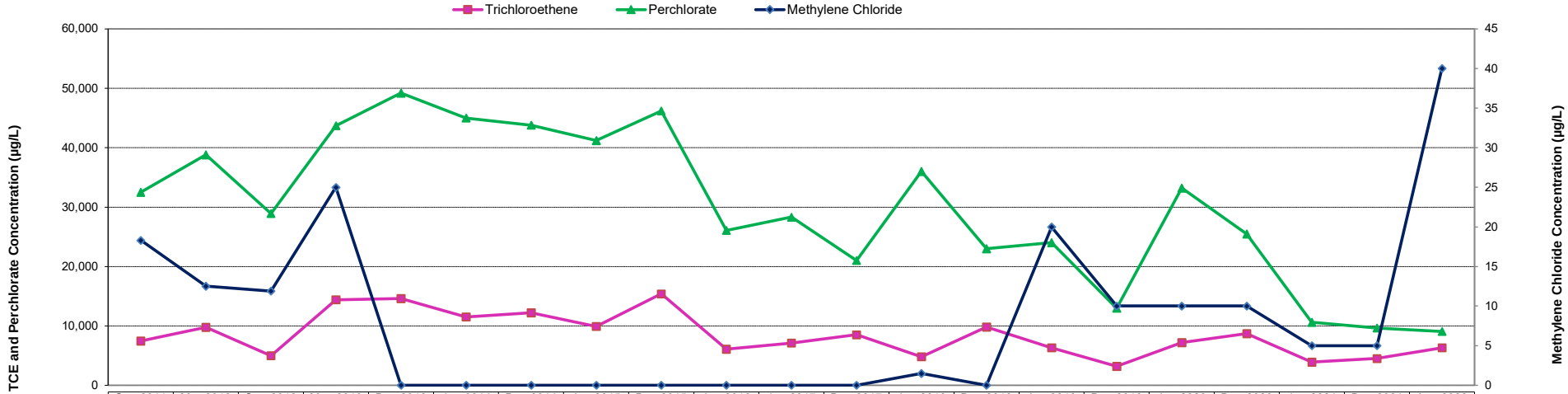
Monitoring Well MW-17
(Shallow Zone Groundwater - West of Site Outside of the Fence Line)



	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	0	0	0.335	0.346	0			0	0	0										
Trichloroethene	0.551	1.14	0.537	0.943	0.519	0.656	1.69			0	0	0										
Perchlorate	0.179	0	0	0	0	0.376	0	0.143	24.4	0	0	0	0	0	0	2.0	2.0	0.05	0.1	0.05	0.0282	0.05

Sample Date

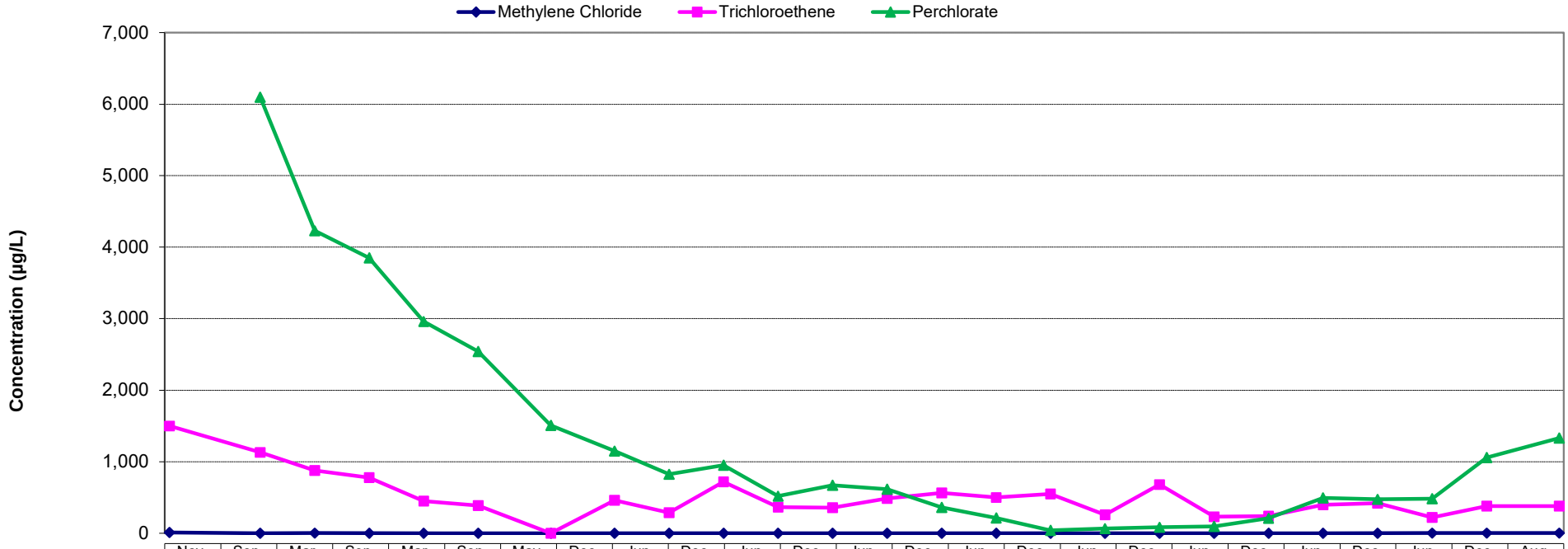
Monitoring Well MW-21
(Shallow Zone Groundwater - Eastern Portion of Site Along the Fence Line)



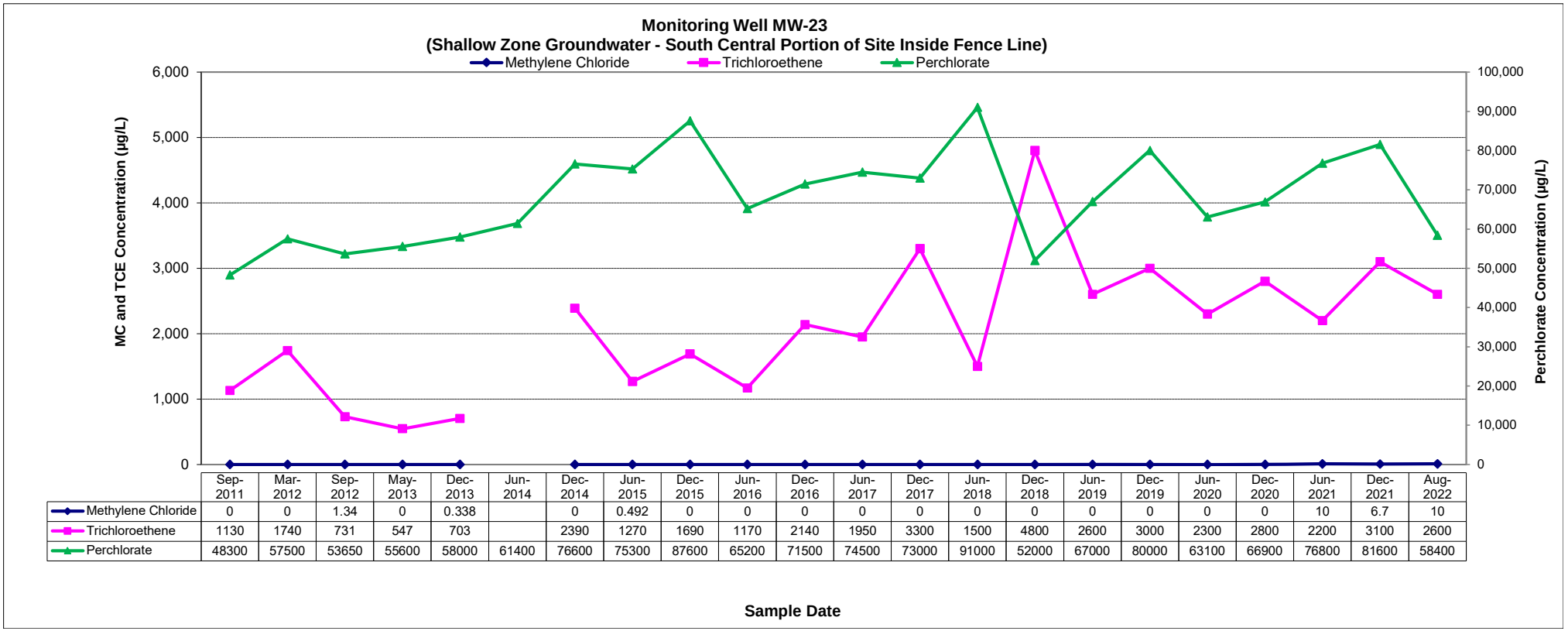
	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Trichloroethene	7470	9760	4980	14400	14600	11500	12200	9910	15400	6080	7140	8500	4800	9800	6300	3200	7200	8700	3900	4500	6300
Perchlorate	32500	38800	28900	43700	49200	45000	43800	41200	46200	26100	28300	21000	36000	23000	24000	13000	33200	25500	10600	9660	9080
Methylene Chloride	18.3J	12.5	11.9	25	0	0	0	0	0	0	0	0	1.5	0	20	10	10	10	5.0	5.0	40.0

Sample Date

Monitoring Well MW-22
(Shallow Zone Groundwater - East-Southeast Portion of SIte Inside Fence Line)



	Nov-2009	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	12	0	3.04	0	0	0	0.531	0	0	0	0.601	0	0	0	0	0	0	0	0	0	0	0	2.0	1.0	2.0
Trichloroethene	1500	1130	877	779	450	388	0	463	288	719	364	359	488	566	500	550	260	680	230	240	400	420	220	380	380
Perchlorate		6100	4230	3850	2960	2540	1510	1150	824	953	519	671	615	363	214	40	66	84	95	210	493	474	484	1060	1330



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022
Methylene Chloride	0	0	1.34	0	0.338		0	0.492	0	0	0	0	0	0	0	0	0	0	0	10	6.7	10
Trichloroethene	1130	1740	731	547	703		2390	1270	1690	1170	2140	1950	3300	1500	4800	2600	3000	2300	2800	2200	3100	2600
Perchlorate	48300	57500	53650	55600	58000	61400	76600	75300	87600	65200	71500	74500	73000	91000	52000	67000	80000	63100	66900	76800	81600	58400

APPENDIX F
GWTP WATER SAMPLING LABORATORY ANALYTICAL RESULTS
(PROVIDED ELECTRONICALLY AS A SEPARATE FILE)

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APPENDIX G
QUALITY CONTROL SUMMARY REPORT

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QUARTERLY CONTROL SUMMARY REPORT
3rd QUARTER (July-September) 2022
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

January 2023

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Contract Number: W9128F-13-D-0012
Task Order Number: W912BV17F0150

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1 INTRODUCTION

Bhate reviewed 42 data packages from ALS Environmental, Houston, Texas. Groundwater samples were collected July 6, 2022 through September 27, 2022 at the Groundwater Treatment Plant (GWTP) and August 8, 2022 to August 24, 2022 at Site LHAAP 18/24 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: *USEPA Contract Laboratory Program* [CLP] *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, November 2020), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, November 2020) and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

The objective of sampling at the GWTP is to monitor effluent streams to confirm compliance with discharge limits. The LHAAP 18/24 sampling is part of the annual interim action sampling event.

Analyses performed include:

- SW6850 – Perchlorate
- E350.3 – Nitrogen, Ammonia
- E365.3 – Orthophosphate
- E415.1 – Total Organic Carbon
- SW8260C – Volatile Organic Compounds
- SW8270 SIM - 1,4-Dioxane
- SW6020A/7470A – Metals
- SW9056A – Chloride (Cl) and Sulfate (SO_4)
- SW7196A – Hexavalent Chromium
- E410.4 – Chemical Oxygen Demand
- E1664A – Oil and Grease
- TO-15 – Volatiles in Air

Table 1 lists the sample identification numbers (IDs) and their associated laboratory package.

Table 2 lists qualified results with the qualification flag and reason code.

The following narrative is a brief synopsis of data that required qualification due to quality control discrepancies.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and within the required hold time with the following exception:

- Sample container 8CPTMW26SW_081822 for 1,4-dioxane was received broken and the analysis could not be performed.

1.3 Calibrations

All analytes reported must be present in the initial and continuing calibration. The calibrations must meet the acceptance criteria specified in Worksheet 24 (Analytical Instrument Calibration) of the QAPP. All results reported must be within the calibration range. Samples were diluted, if necessary, to bring analyte responses within the calibration range

1.3.1 Continuing Calibration Verifications

The calibrations must meet the following criteria otherwise the compound is qualified J or UJ: The continuing calibration verification (CCV) criteria are 20 percent difference (%D) for VOCs and SVOCs and 50% for closing CCVs. Metals and general chemistry - 10%D; perchlorate - 15%D; and volatiles in air - 30%D.

The following ICT samples were outside calibration limits:

- The CCV in samples ICT12C_082522, ICT13A_082522, ICT13B_082522, ICT13C_082522, and ICT14C_082522 for acetone and n-butylbenzene.

The associated sample compounds were qualified estimated non-detected “UJ”.

1.4 Blanks

If the analyte result for an associated sample was less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, that result was qualified “UB” and considered an artifact of blank contamination. Where the sample result for the affected analyte was non-detect or greater than 5X the amount in the blank, no qualifier was applied.

1.4.1 Metals - SW6020A

The following samples reported metals <5x the method blank concentration:

- LH18/24-SP140_082422 and 18CPTMW22DW_081822 for chromium.
- LH18/24-SP650_082422 and MW3_081822 for aluminum and chromium.
- 18CPTMW01SW_080822, MW22_081122, 18WW17_081222, 18CPTMW18_081222, ICT11_082522, ICT11_082522_a, ICT12A_082522, ICT12D_082522, ICT12D_082522_a, ICT13D_082522, ICT13A_082522, ICT13B_082522, ICT14B_082522, ICT14C_082522 and 18CPTMW12DW_081922 for aluminum.
- 129_081722 for copper.
- MW1_081722 and MW6_081722 for aluminum, copper and zinc.
- 18WW22_081722 for zinc.

These compounds were considered artifacts of blank contamination and flagged "UB".

1.5 Surrogates

Surrogates were evaluated using limits defined by each method in the project-specific QAPP Worksheet 28.

All surrogate recoveries were within control limits.

1.6 Laboratory Control Sample/Laboratory Control Sample Duplicate

Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS)/(LCSD) recoveries were evaluated using limits defined in the project-specific QAPP Worksheet 15.

1.6.1 Volatiles – SW8260C

Samples LH18/24-Air_080122_STRIPPER and LH18/24-Air_080122_GWTP reported the LCS/LCSD recoveries above control limits for trichloroethene (TCE). TCE was considered estimated and flagged "J" in both samples.

1.7 Matrix Spike/Matrix Spike Duplicate Sample

Matrix Spike/Matrix Spike Duplicate (MS)/(MSD) recoveries were evaluated using limits defined in Worksheet 15 of the project-specific QAPP. When sample results were greater than 4x the spike amount, control limits were not applicable and require no qualification. Furthermore, if a MS/MSD analyses was performed on a batched (unrelated) sample no qualification was made to the sample data. Otherwise, only the sample used for spiking requires qualification.

1.7.1 Volatiles - SW8260C

Sample CO9_082422 reported chloromethane, dichlorodifluoromethane and vinyl chloride below MS/MSD recovery limits. These non-detect compounds were qualified estimated non-detect "UJ".

1.7.2 Metals - SW6020A

The spike sample LH18/24-SP650_080922 reported silver and sample LH18/24-SP650_090722 reported selenium below MS/MSD recovery limits. These non-detected metals were qualified estimated "UJ". Sample AWD3_081622 reported the MS/MSD recoveries of chromium above control limits and the MS recovery above control limits for iron. Sample ICT14D_082522 reported the MS and/or MSD recoveries outside control limits for arsenic, potassium, silver and zinc. These detected metals were qualified estimated "J".

1.7.3 Hexavalent Chromium – 7196A

The LHAAP 18/24 spike sample LH18/24-SP650_080922 reported hexavalent chromium below MS/MSD recovery limits. This non-detect compound was qualified estimated "UJ".

1.8 Internal Standards

If the %R for an internal standard in a sample is not within the limit, the associated sample is qualified for those analytes associated with the internal standard(s) outside of the limit.

Internal standards were within acceptance criteria for the associated compounds.

1.9 Precision

Precision is the measure of variability of individual sample measurements. Evaluation of laboratory and/or field duplicates for precision was done using the relative percent difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater and air matrices. Laboratory duplicate RPD limits were set at <25% for air matrices.

1.9.1 Field Duplicate

The following sample and duplicate were outside RPD limits:

- MW2_080822 for 1,4-dioxane.
- 17WW08_080822 for zinc.
- AWD3_081622 for aluminum.
- 102_081622 for aluminum, barium, beryllium, chromium, copper, iron, nickel, potassium, vanadium and zinc.
- 18WW22_081722 for nickel.
- 18CPTMW12SW_081922 for 1,4-dioxane and aluminum.
- ICT11_082522 for copper, iron, vanadium and zinc.
- ICT12D_082522 for 1,2-dichloroethane, cis-1,2-dichloroethene, methylene chloride, vinyl chloride and copper.

These compounds were qualified estimated “J” in both parent sample and associated duplicate sample.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	E415.1	SW8270 SIM	SW8260C	SW6020A	SW9056A	SW7196A	E410.4	1664A	TO-15
GWTP Samples													
LH18/24-SP650_070622_AIX/BIX	HS22070252	X	X	X	X								
LH18/24-SP650_070622	HS22070255						X		X				
LH18/24-SP650_071222_AIX	HS22070567	X				X	X	X		X			
LH18/24-SP140_071222	HS22070568	X						X		X			
LH18/24-SP650_071222_AIX/BIX	HS22070566	X	X	X	X								
LH18/24-SP650_071922	HS22070992						X		X				
LH18/24-SP650_071922_AIX/BIX	HS22070986	X	X	X	X								
LH18/24-SP650_072622_AIX/BIX	HS22071367	X	X	X	X								
LH18/24-SP650_080222_AIX/BIX	HS22080124	X	X	X	X								
LH18/24-SP650_080222	HS22080125						X		X				
LH18/24-SP650_080922_AIX/BIX	HS22080474	X	X	X	X								
LH18/24-SP140_080922	HS22080473	X						X		X			
LH18/24-SP650_080922_AIX	HS22080472	X				X	X	X		X			
LH18/24-SP650_081622_AIX/BIX	HS22080872	X	X	X	X								
LH18/24-SP650_081622	HS22080897						X		X				
LH18/24-SP650_082422_AIX/BIX	HS22081350	X	X	X	X								
LH18/24-SP650_082422	HS22081354	X				X	X	X	X		X	X	
LH18/24-SP140_082422	HS22081352	X				X	X	X	X		X	X	
LH18/24-SP650_083022_AIX/BIX	HS22081683	X	X	X	X								
LH18/24-SP650_083022	HS22081685						X		X				
LH18/24-SP650_090822_AIX/BIX	HS22090344	X	X	X	X								
LH18/24-SP650_090722_AIX	HS22090337	X				X	X	X		X			
LH18/24-SP140_090722	HS22090343	X						X		X			
LH18/24-SP650_091422_AIX/BIX	HS22090729	X	X	X	X								
LH18/24-SP650_091422	HS22090731						X		X				
LH18/24-SP650_092122_AIX/BIX	HS22091050	X	X	X	X								
LH18/24-SP650_092722_AIX/BIX	HS22091362	X	X	X	X								
LH18/24-SP650_092722	HS22091367						X		X				
Air Samples													
LH18/24-Air_080122_STRIPPER	P2203433												X
LH18/24-Air_080122_STRIPPER_a	P2203433												X
LH18/24-Air_080122_GWTP	P2203433												X
LH18/24-Air_080122_Downwind_North	P2203433												X
Site 18/24													
AWD1_080922	HS22080499					X							
AWD3_081622	HS22080927	X					X	X					
AWD3_081622_a	HS22080927	X					X	X					
AWD4_081722	HS22081026	X				X	X	X					
18CPTMW01DW_080822	HS22080522	X				X	X	X					
18CPTMW01SW_080822	HS22080522	X				X	X	X					
18CPTMW03SW_081522	HS22080933	X				X	X	X					
18CPTMW04_081022	HS22080611	X				X	X						
18CPTMW04SW_081022	HS22080611	X				X	X	X					
18CPTMW06_081122	HS22080695	X				X	X						
18CPTMW07_081822	HS22081097	X				X	X						
18CPTMW08SW_080922	HS22080499	X				X	X						
18CPTMW08DW_080922	HS22080499	X				X							
18CPTMW10SW_082322	HS22081311	X				X	X						
18CPTMW10DW_082322	HS22081311	X					X	X					
18CPTMW12SW_081922	HS22081120	X				X	X	X					
18CPTMW12SW_081922_a	HS22081120	X				X	X	X					
18CPTMW12DW_081922	HS22081120	X				X	X	X					
18CPTMW14_081922	HS22081120	X				X	X	X					

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	E415.1	SW8270 SIM	SW8260C	SW6020A	SW9056A	SW7196A	E410.4	1664A	TO-15
18CPTMW15_081522	HS22080933	X				X	X						
18CPTMW16_081922	HS22081120	X				X							
18CPTMW18_081222	HS22080752	X				X	X	X					
18CPTMW19_081122	HS22080695	X				X	X						
18CPTMW19SW_081122	HS22080695	X				X	X	X					
18CPTMW22R_081822	HS22081097	X				X	X	X					
18CPTMW22SW_081822	HS22081097	X				X	X	X					
18CPTMW22DW_081822	HS22081097	X				X	X	X					
18CPTMW23_080822	HS22080522	X				X	X						
18CPTMW23SW_080822	HS22080522	X				X	X						
18CPTMW24_081822	HS22081097	X				X	X						
8CPTMW26SW_081822	HS22081097	X					X						
17WW08_080822	HS22080522	X					X	X					
17WW08_080822_a	HS22080522	X					X	X					
18WW02_081022	HS22080611	X				X	X	X					
18WW03_081622	HS22080927	X				X	X	X					
18WW06_081022	HS22080611	X				X	X						
18WW08_081122	HS22080695	X				X	X						
18WW09_081122	HS22080695	X				X		X					
18WW10 _080922	HS22080499	X				X	X						
18WW14_081722	HS22080499	X						X					
18WW16	abandoned												
18WW17_081222	HS22080752	X					X	X					
18WW18_081622	HS22080927	X				X	X	X					
18WW19_082322	HS22081311	X					X	X					
18WW19_082322_a	HS22081311	X					X	X					
18WW20_082322	HS22081311	X					X	X					
18WW22_081722	HS22081026	X				X	X	X					
18WW22_081722_a	HS22081026	X				X	X	X					
18WW24_080822	HS22080522	X					X	X					
18WW25_081522	HS22080933	X				X	X	X					
CO1_082422	HS22081409	X					X						
CO2_081022	HS22080611	X					X						
CO3_081622	HS22080927	X				X	X	X					
CO4_081722	HS22081026	X					X						
CO6_081522	HS22080933	X					X	X					
CO8_081622	HS22080927	X				X	X						
CO9_082422	HS22081409	X					X	X					
MW1_081722	HS22081026	X					X	X					
MW2_080822	HS22080522	X				X	X						
MW2_080822_a	HS22080522	X				X	X						
MW3_081822	HS22081097	X					X	X					
MW5_080922	HS22080499	X				X	X						
MW6_081722	HS22081026	X					X	X					
MW7_081922	HS22081120	X				X	X						
MW8_080822	HS22080522	X				X	X						
MW9_082322	HS22081311	X				X	X	X					
MW10_080922	HS22080499	X				X	X						
MW12_081122	HS22080695	X					X						
MW13_081022	HS22080611	X					X	X					
MW14_081522	HS22080933	X				X	X	X					
MW16_081622	HS22080927	X				X	X						
MW17_080922	HS22080499	X				X							
MW18_081522	HS22080933	X					X						

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package	SW6850	E350.3	E365.3	E415.1	SW8270 SIM	SW8260C	SW6020A	SW9056A	SW7196A	E410.4	1664A	TO-15
MW19_080922	HS22080499	X					X	X					
MW20_081822	HS22081097	X					X	X					
MW21_081022	HS22080611	X				X	X	X					
MW22_081122	HS22080695	X					X	X					
MW23_080822	HS22080522	X					X						
102_081622	HS22080927	X					X	X					
102_081622_a	HS22080927	X					X	X					
109_081022	HS22080611	X				X	X						
120_081522	HS22080933	X				X	X						
125_082422	HS22081409	X					X	X					
126_081722	HS22081026	X				X	X	X					
129_081722	HS22081026	X				X	X	X					
130_082422	HS22081409	X					X	X					
130_082422_a	HS22081409												
ICT2_082522	HS22081514	X					X	X					
ICT4_082522	HS22081514	X					X	X					
ICT7_082522	HS22081514	X					X	X					
ICT8_082522	HS22081514	X					X	X					
ICT11_082522	HS22081514	X					X	X					
ICT11_082522_a	HS22081514	X					X	X					
ICT12A_082522	HS22081514	X					X	X					
ICT12B_082522	HS22081514	X					X	X					
ICT12C_082522	HS22081514	X					X	X					
ICT12D_082522	HS22081514	X					X	X					
ICT12D_082522_a	HS22081514	X					X	X					
ICT12E_082522	HS22081514	X					X	X					
ICT13A_082522	HS22081514	X					X	X					
ICT13B_082522	HS22081514	X					X	X					
ICT13C_082522	HS22081514	X					X	X					
ICT13D_082522	HS22081514	X					X	X					
ICT13E_082522	HS22081514	X					X	X					
ICT13F_082522	HS22081514	X					X	X					
ICT14A_082522	HS22081514	X					X	X					
ICT14B_082522	HS22081514	X					X	X					
ICT14C_082522	HS22081514	X					X	X					
ICT14D_082522	HS22081514	X					X	X					
ICT14E_082522	HS22081514	X					X	X					
1824DPTMW01_081222	HS22080752	X				X	X						
1824DPTMW02_081222	HS22080752	X				X	X						
1824DPTMW02_081222_a	HS22080752	X				X	X						
1824DPTMW03_081222	HS22080752	X				X	X						
1824DPTMW04_081622	HS22080927	X				X	X						
1824DPTMW05_081522	HS22080933	X				X	X						
1824DPTMW06_081122	HS22080695	X				X	X						

GWTP – Groundwater Treatment Plant
ID – Identification
MW – Monitoring Well
SM – Standard Method
SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.
E – U.S. Environmental Protection Agency Method
HS – Houston
ICT – Interceptor Collection Trench

Table 2: Qualified Analytical Data

Client Sample Identification	Laboratory Package	Analyte Name	Data Validation Qualifier (VOCs and perchlorate in µg/L/metals in mg/L)	Reason for Qualification
GWTP				
LH18/24-SP650_080922	HS22080472	Silver Hexavalent Chromium	< 0.000500 UJ < 0.00600 UJ	MS/MSD <
LH18/24-SP650_090722	HS22090337	Selenium	< 0.00250 UJ	MS/MSD <
LH18/24-SP140_082422	HS22081352	Chromium	0.00214 UB	MB
LH18/24-SP650_082422	HS22081354	Aluminum Chromium	0.0139 UB 0.000882 UB	MB
LH18/24-Air_080122_STRIPPER	P2203433	Trichloroethene	7,300 J	LCS/LCSD >
LH18/24-Air_080122_GWTP	P2203433	Trichloroethene	3.8 J	LCS/LCSD >
LHAAP 18/24				
MW2_080822	HS22080522	1,4-Dioxane	11 J	Dup RPD
MW2_080822_a	HS22080522	1,4-Dioxane	17 J	Dup RPD
17WW08_080822	HS22080522	Zinc	0.0122 J	Dup RPD
17WW08_080822_a	HS22080522	Zinc	0.00842 J	Dup RPD
18CPTMW01SW_080822	HS22080522	Aluminum	0.0242 UB	MB
MW22_081122	HS22080695	Aluminum	0.0182 UB	MB
18WW17_081222	HS22080752	Aluminum	0.00858 UB	MB
18CPTMW18_081222	HS22080752	Aluminum	0.0270 UB	MB
AWD3_081622	HS22080927	Aluminum Chromium Iron	0.107 J 0.117 J 0.503 J	Dup RPD MS/MSD > MS >
AWD3_081622_a	HS22080927	Aluminum Chromium Iron	0.0486 J 0.0833 J 0.349 J	Dup RPD MS/MSD > MS >
102_081622	HS22080927	Aluminum Barium Beryllium Chromium Copper Iron Nickel Potassium Vanadium Zinc	0.365 J 0.0340 J 0.000200 J 0.00112 J 0.00288 J 0.390 J 0.00314 J 0.303 J 0.00150 J 0.0135 J	Dup RPD
102_081622_a	HS22080927	Aluminum Barium Beryllium Chromium Copper Iron Nickel Potassium Vanadium Zinc	0.942 J 0.0524 J 0.000496 J 0.00285 J 0.00490 J 1.43 J 0.00870 J 0.540 J 0.00273 J 0.0193 J	Dup RPD
18WW22_081722	HS22081026	Nickel	0.00128 J	Dup RPD
18WW22_081722_a	HS22081026	Nickel	0.000892 J	Dup RPD
129_081722	HS22081026	Copper	0.00293 UB	MB
MW6_081722	HS22081026	Aluminum Copper Zinc	0.0155 UB 0.00882 UB 0.00882 UB	MB
MW1_081722	HS22081026	Aluminum Copper Zinc	0.0153 UB 0.00699 UB 0.00284 UB	MB
18WW22_081722	HS22081026	Zinc	0.00228 UB	MB
18CPTMW22DW_081822	HS22081097	Chromium	0.000790 UB	MB
MW3_081822	HS22081097	Aluminum Chromium	0.00712 UB 0.00164 UB	MB

Table 2: Qualified Analytical Data

Client Sample Identification	Laboratory Package	Analyte Name	Data Validation Qualifier (VOCs and perchlorate in µg/L/metals in mg/L)	Reason for Qualification
18CPTMW12DW_081922	HS22081120	Aluminum	0.0128 UB	MB
18CPTMW12SW_081922	HS22081120	1,4-Dioxane Aluminum	0.13 J 0.0627 J	Dup RPD
18CPTMW12SW_081922_a	HS22081120	1,4-Dioxane Aluminum	0.28 J 0.0443 J	Dup RPD
CO9_082422	HS22081514	Chloromethane Dichlorodifluoromethane Vinyl chloride	< 0.50 UJ < 1.0 UJ < 0.50 UJ	MS/MSD <
ICT11_082522	HS22081514	Aluminum Copper Iron Vanadium Zinc	0.00838 UB 0.00613 J 0.465 J 0.00151 J 0.0149 J	MB Dup RPD Dup RPD Dup RPD Dup RPD
ICT11_082522_a	HS22081514	Aluminum Copper Iron Vanadium Zinc	0.00731 UB 0.00154 J 0.0706 J 0.000943 J 0.00874 J	MB Dup RPD Dup RPD Dup RPD Dup RPD
ICT12A_082522	HS22081514	Aluminum	0.0186 UB	MB
ICT12C_082522	HS22081514	Acetone n-Butylbenzene	< 2.0 UJ < 1.0 UJ	CCV
ICT12D_082522	HS22081514	1,2-Dichloroethane cis-1,2-Dichloroethene Methylene chloride Vinyl chloride Copper Aluminum	410 J 40,000 J 2,100 J 930 J 0.0102 J 0.0205 UB	Dup RPD Dup RPD Dup RPD Dup RPD Dup RPD MB
ICT12D_082522_a	HS22081514	1,2-Dichloroethane cis-1,2-Dichloroethene Methylene chloride Vinyl chloride Copper Aluminum	290 J 24,000 J 630 J 490 J 0.00792 J 0.0191 UB	Dup RPD Dup RPD Dup RPD Dup RPD Dup RPD MB
ICT13A_082522	HS22081514	Aluminum Acetone n-Butylbenzene	0.0182 UB < 20 UJ < 10 UJ	MB CCV CCV
ICT13B_082522	HS22081514	Aluminum Acetone n-Butylbenzene	0.00739 UB < 2.0 UJ < 1.0 UJ	MB CCV CCV
ICT13C_082522	HS22081514	Acetone n-Butylbenzene	< 20 UJ < 10 UJ	CCV
ICT13D_082522	HS22081514	Aluminum	0.0113 UB	MB
ICT14B_082522	HS22081514	Aluminum	0.0145 UB	MB
ICT14C_082522	HS22081514	Aluminum Acetone n-Butylbenzene	0.0111 UB < 20 UJ < 10 UJ	MB CCV CCV
ICT14D_082522	HS22081514	Arsenic Potassium Silver Zinc	0.0446 J 1.12 J 0.000540 J 0.124 J	MS > MS > MS/MSD < MS/MSD >

J – Estimated: The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
UJ – Estimated not detected; The analyte was not detected but considered estimated due to discrepancies in meeting quality control criteria and reported to the limit of detection.
UB – considered an artifact of blank contamination
FD RPD – Field Duplicate Relative Percent Difference outside control limits
HS – Houston
MB – Method Blank contamination
CCV – Continuing calibration verification percent recovery outside control limits
MS/MSD <>– Matrix spike/Matrix spike duplicate below/above control limits, LCS/LCSD > - Laboratory Control Sample/Duplicate above control limits

Table 3: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW6850	0	100
E350.3	0	100
E365.3	0	100
E415.1	0	100
SW8270 SIM	0	100
SW8260C	0	100
SW6020A/7470A	0	100
SW9056A	0	100
SW7196A	0	100
E410.4	0	100
E1664A	0	100
TO-15	0	100
E – U.S. Environmental Protection Agency method. SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods		

APPENDIX H
AIR MONITORING ANALYTICAL LABORATORY REPORT

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ALS Environmental
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LABORATORY REPORT

August 22, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd., Suite 129
Lakewood, CO 80228

RE: LHAAP GWTP / NW01312.0150

Dear Marcia:

Enclosed are the results of the samples submitted to our laboratory on August 8, 2022. For your reference, these analyses have been assigned our service request number P2203433.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

ALS | Environmental

By Sue Anderson at 4:57 pm, Aug 22, 2022

Sue Anderson
Project Manager

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Client: Bhate Environmental Associates, Inc. Service Request No: P2203433
Project: LHAAP GWTP / NW01312.0150

CASE NARRATIVE

The samples were received intact under chain of custody on August 8, 2022 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph/mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The upper control criterion was exceeded for naphthalene in the Continuing Calibration Verification (CCV) analyzed on August 12 and 15, 2022. Since the apparent problem equates to a potential high bias and the field samples analyzed in this sequence did not contain the analyte in question, the data quality has not been affected. No corrective action was required.

The spike recoveries of trichloroethene for the Laboratory Control Samples (LCS/LCSD) analyzed on August 12 and 15, 2022 were outside the lsaboratory generated control criterion. The recovery error equate to a potential high bias. In addition, the spike recovery for 1,4-dioxane exceeded the laboratory generated control criterion. However, the spike recoveries of the analytes in question were within the method criteria; therefore, the data quality has not been significantly affected. No corrective action was taken.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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 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.

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CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Bhate Environmental Associates, Inc. Service Request: P2203433
Project ID: LHAAP GWTP / NW01312.0150

Date Received: 8/8/2022
Time Received: 10:33

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	TO-15 - VOC Cans
LH18/24-Air_080122_STRIPPER	P2203433-001	Air	8/1/2022	14:00	AS00372	-1.06	4.00	X
LH18/24-Air_080122_STRIPPER_a	P2203433-002	Air	8/1/2022	14:00	AC02298	-0.59	3.70	X
LH18/24-Air_080122_GWTP	P2203433-003	Air	8/1/2022	14:30	AC02305	-3.57	3.69	X
LH18/24-Air_080122_Downwind_North	P2203433-004	Air	8/1/2022	07:00	AC02398	-0.96	3.51	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

Page 1 of 1

P2203433

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No.

Company Name & Address (Reporting Information)	BHATE ENVIRONMENTAL 445 UNION BLVD., STE 129 LAKEWOOD, CO. 80228
Project Name	LHAAP - GWTP
Project Number	NW01312.0150
Project Manager	Kim Nemmers
P.O. # / Billing Information	
Phone	205-918-4000
Fax	
Email Address for Result Reporting	molive@bhate.com
Sampler (Print & Sign)	Scott Beesinger Scott Beesinger
ALS Contact:	

Analysis Method

	Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		Comments e.g. Actual Preservative or specific instructions
1	LH18/24-AIR_080122_STRipper		8/1/22	1400	AS00372		-30	0	6L	X		
2	LH18/24-AIR_080122_STRipper_a		8/1/22	1400	AC02298		-30	0	6L	X		
3	LH18/24-AIR_080122_GWTP		8/1/22	1430	AC02305	FCR00381	-28	-4	6L	X		
4	LH18/24-AIR_080122_DOWNWIND_NORTH		8/2/22	0700	AC02398	FCR00343	-29	-3	6L	X		

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____ Tier III (Results + QC & Calibration Summaries) _____
Tier II (Results + QC Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

	Date	Time		Date	Time
Relinquished by: (Signature) Scott Beesinger	8/2/22	07:30	Received by: (Signature)	8-08	1033
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Bhate Environmental Associates, Inc. Work order: P2203433

Project: LHAAP GWTPNW01312.0150

Sample(s) received on: 8/8/22 Date opened: 8/8/22 by: KYLE.WOODIN

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2203433-001.01	6.0 L Silonite Can					
P2203433-002.01	6.0 L Ambient Can					
P2203433-003.01	6.0 L Ambient Can					
P2203433-004.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-001

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00372

Initial Pressure (psig): -1.06 Final Pressure (psig): 4.00

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	36	ND	21	
75-71-8	Dichlorodifluoromethane (CFC 12)	**44**	36	**9.0**	7.3	
74-87-3	Chloromethane	ND	35	ND	17	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	37	ND	5.3	
75-01-4	Vinyl Chloride	**540**	36	**210**	14	
106-99-0	1,3-Butadiene	ND	36	ND	16	
74-83-9	Bromomethane	ND	35	ND	9.0	
75-00-3	Chloroethane	ND	35	ND	13	
64-17-5	Ethanol	ND	340	ND	180	
75-05-8	Acetonitrile	ND	69	ND	41	
107-02-8	Acrolein	ND	69	ND	30	
67-64-1	Acetone	ND	360	ND	150	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	36	ND	6.3	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	69	ND	28	
107-13-1	Acrylonitrile	ND	69	ND	32	
75-35-4	1,1-Dichloroethene	**110**	37	**28**	9.3	
75-09-2	Methylene Chloride	**43**	36	**12**	10	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	36	ND	12	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**7,100**	37	**920**	4.8	
75-15-0	Carbon Disulfide	ND	75	ND	24	
156-60-5	trans-1,2-Dichloroethene	ND	36	ND	9.2	
75-34-3	1,1-Dichloroethane	ND	36	ND	9.0	
1634-04-4	Methyl tert-Butyl Ether	ND	36	ND	10	
108-05-4	Vinyl Acetate	ND	340	ND	97	
78-93-3	2-Butanone (MEK)	ND	69	ND	23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-001

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00372

Initial Pressure (psig): -1.06 Final Pressure (psig): 4.00

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**7,100**	36	**1,800**	9.0	
141-78-6	Ethyl Acetate	ND	140	ND	40	
110-54-3	n-Hexane	ND	36	ND	10	
67-66-3	Chloroform	ND	37	ND	7.6	
109-99-9	Tetrahydrofuran (THF)	ND	69	ND	23	
107-06-2	1,2-Dichloroethane	**87**	36	**22**	9.0	
71-55-6	1,1,1-Trichloroethane	ND	36	ND	6.5	
71-43-2	Benzene	ND	34	ND	11	
56-23-5	Carbon Tetrachloride	ND	34	ND	5.4	
110-82-7	Cyclohexane	ND	75	ND	22	
78-87-5	1,2-Dichloropropane	ND	34	ND	7.4	
75-27-4	Bromodichloromethane	ND	36	ND	5.4	
79-01-6	Trichloroethene	**7,300**	140	**1,400**	27	**D**
123-91-1	1,4-Dioxane	ND	36	ND	9.9	
80-62-6	Methyl Methacrylate	ND	75	ND	18	
142-82-5	n-Heptane	ND	36	ND	8.9	
10061-01-5	cis-1,3-Dichloropropene	ND	34	ND	7.5	
108-10-1	4-Methyl-2-pentanone	ND	75	ND	18	
10061-02-6	trans-1,3-Dichloropropene	ND	35	ND	7.7	
79-00-5	1,1,2-Trichloroethane	ND	36	ND	6.5	
108-88-3	Toluene	ND	36	ND	9.5	
591-78-6	2-Hexanone	ND	75	ND	18	
124-48-1	Dibromochloromethane	ND	36	ND	4.3	
106-93-4	1,2-Dibromoethane	ND	36	ND	4.6	
123-86-4	n-Butyl Acetate	ND	75	ND	16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-001

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00372

Initial Pressure (psig): -1.06 Final Pressure (psig): 4.00

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	36	ND	7.8	
127-18-4	Tetrachloroethene	**88**	36	**13**	5.3	
108-90-7	Chlorobenzene	ND	36	ND	7.7	
100-41-4	Ethylbenzene	ND	36	ND	8.2	
179601-23-1	m,p-Xylenes	ND	75	ND	17	
75-25-2	Bromoform	ND	36	ND	3.4	
100-42-5	Styrene	ND	34	ND	8.0	
95-47-6	o-Xylene	ND	36	ND	8.2	
111-84-2	n-Nonane	ND	36	ND	6.8	
79-34-5	1,1,2,2-Tetrachloroethane	ND	36	ND	5.2	
98-82-8	Cumene	ND	36	ND	7.2	
80-56-8	alpha-Pinene	ND	37	ND	6.6	
103-65-1	n-Propylbenzene	ND	36	ND	7.4	
622-96-8	4-Ethyltoluene	ND	36	ND	7.4	
108-67-8	1,3,5-Trimethylbenzene	ND	36	ND	7.2	
95-63-6	1,2,4-Trimethylbenzene	ND	36	ND	7.2	
100-44-7	Benzyl Chloride	ND	75	ND	15	
541-73-1	1,3-Dichlorobenzene	ND	36	ND	5.9	
106-46-7	1,4-Dichlorobenzene	ND	36	ND	5.9	
95-50-1	1,2-Dichlorobenzene	ND	36	ND	6.0	
5989-27-5	d-Limonene	ND	34	ND	6.1	
96-12-8	1,2-Dibromo-3-chloropropane	ND	69	ND	7.1	
120-82-1	1,2,4-Trichlorobenzene	ND	75	ND	10	
91-20-3	Naphthalene	ND	36	ND	6.8	
87-68-3	Hexachlorobutadiene	ND	36	ND	3.3	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER_a** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-002

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AC02298

Initial Pressure (psig): -0.59 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	34	ND	20	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	34	ND	7.0	
74-87-3	Chloromethane	ND	33	ND	16	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	35	ND	5.0	
75-01-4	Vinyl Chloride	**470**	34	**180**	13	
106-99-0	1,3-Butadiene	ND	34	ND	15	
74-83-9	Bromomethane	ND	33	ND	8.5	
75-00-3	Chloroethane	ND	33	ND	13	
64-17-5	Ethanol	ND	330	ND	170	
75-05-8	Acetonitrile	ND	65	ND	39	
107-02-8	Acrolein	ND	65	ND	28	
67-64-1	Acetone	ND	340	ND	140	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	34	ND	6.0	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	65	ND	26	
107-13-1	Acrylonitrile	ND	65	ND	30	
75-35-4	1,1-Dichloroethene	**94**	35	**24**	8.9	
75-09-2	Methylene Chloride	**38**	34	**11**	9.7	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	34	ND	11	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**6,200**	35	**810**	4.6	
75-15-0	Carbon Disulfide	ND	72	ND	23	
156-60-5	trans-1,2-Dichloroethene	ND	34	ND	8.7	
75-34-3	1,1-Dichloroethane	ND	34	ND	8.5	
1634-04-4	Methyl tert-Butyl Ether	ND	34	ND	9.6	
108-05-4	Vinyl Acetate	ND	330	ND	92	
78-93-3	2-Butanone (MEK)	ND	65	ND	22	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER_a** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-002

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AC02298

Initial Pressure (psig): -0.59 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**6,100**	34	**1,500**	8.5	
141-78-6	Ethyl Acetate	ND	140	ND	38	
110-54-3	n-Hexane	ND	34	ND	9.8	
67-66-3	Chloroform	ND	35	ND	7.2	
109-99-9	Tetrahydrofuran (THF)	ND	65	ND	22	
107-06-2	1,2-Dichloroethane	**77**	34	**19**	8.5	
71-55-6	1,1,1-Trichloroethane	ND	34	ND	6.2	
71-43-2	Benzene	ND	33	ND	10	
56-23-5	Carbon Tetrachloride	ND	33	ND	5.2	
110-82-7	Cyclohexane	ND	72	ND	21	
78-87-5	1,2-Dichloropropane	ND	33	ND	7.0	
75-27-4	Bromodichloromethane	ND	34	ND	5.1	
79-01-6	Trichloroethene	**6,900**	140	**1,300**	25	**D**
123-91-1	1,4-Dioxane	ND	34	ND	9.4	
80-62-6	Methyl Methacrylate	ND	72	ND	17	
142-82-5	n-Heptane	ND	34	ND	8.4	
10061-01-5	cis-1,3-Dichloropropene	ND	33	ND	7.2	
108-10-1	4-Methyl-2-pentanone	ND	72	ND	17	
10061-02-6	trans-1,3-Dichloropropene	ND	33	ND	7.3	
79-00-5	1,1,2-Trichloroethane	ND	34	ND	6.2	
108-88-3	Toluene	ND	34	ND	9.0	
591-78-6	2-Hexanone	ND	72	ND	17	
124-48-1	Dibromochloromethane	ND	34	ND	4.0	
106-93-4	1,2-Dibromoethane	ND	34	ND	4.4	
123-86-4	n-Butyl Acetate	ND	72	ND	15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_STRIPPER_a** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-002

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22 & 8/15/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.020 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AC02298

Initial Pressure (psig): -0.59 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.30

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	34	ND	7.4	
127-18-4	Tetrachloroethene	**76**	34	**11**	5.0	
108-90-7	Chlorobenzene	ND	34	ND	7.3	
100-41-4	Ethylbenzene	ND	34	ND	7.8	
179601-23-1	m,p-Xylenes	ND	72	ND	16	
75-25-2	Bromoform	ND	34	ND	3.3	
100-42-5	Styrene	ND	33	ND	7.6	
95-47-6	o-Xylene	ND	34	ND	7.8	
111-84-2	n-Nonane	ND	34	ND	6.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	34	ND	4.9	
98-82-8	Cumene	ND	34	ND	6.9	
80-56-8	alpha-Pinene	ND	35	ND	6.3	
103-65-1	n-Propylbenzene	ND	34	ND	7.0	
622-96-8	4-Ethyltoluene	ND	34	ND	7.0	
108-67-8	1,3,5-Trimethylbenzene	ND	34	ND	6.9	
95-63-6	1,2,4-Trimethylbenzene	ND	34	ND	6.9	
100-44-7	Benzyl Chloride	ND	72	ND	14	
541-73-1	1,3-Dichlorobenzene	ND	34	ND	5.6	
106-46-7	1,4-Dichlorobenzene	ND	34	ND	5.6	
95-50-1	1,2-Dichlorobenzene	ND	34	ND	5.7	
5989-27-5	d-Limonene	ND	33	ND	5.8	
96-12-8	1,2-Dibromo-3-chloropropane	ND	65	ND	6.7	
120-82-1	1,2,4-Trichlorobenzene	ND	72	ND	9.6	
91-20-3	Naphthalene	ND	34	ND	6.5	
87-68-3	Hexachlorobutadiene	ND	34	ND	3.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_GWTP** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-003

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02305

Initial Pressure (psig): -3.57 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**4.1**	0.86	**2.4**	0.50	
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.7**	0.87	**0.96**	0.18	
74-87-3	Chloromethane	ND	0.84	ND	0.41	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.89	ND	0.13	
75-01-4	Vinyl Chloride	ND	0.86	ND	0.34	
106-99-0	1,3-Butadiene	ND	0.86	ND	0.39	
74-83-9	Bromomethane	ND	0.84	ND	0.22	
75-00-3	Chloroethane	ND	0.84	ND	0.32	
64-17-5	Ethanol	**41**	8.3	**22**	4.4	
75-05-8	Acetonitrile	ND	1.7	ND	0.98	
107-02-8	Acrolein	ND	1.7	ND	0.72	
67-64-1	Acetone	**25**	8.6	**11**	3.6	
75-69-4	Trichlorofluoromethane (CFC 11)	**15**	0.86	**2.7**	0.15	
67-63-0	2-Propanol (Isopropyl Alcohol)	**64**	1.7	**26**	0.67	
107-13-1	Acrylonitrile	ND	1.7	ND	0.76	
75-35-4	1,1-Dichloroethene	ND	0.89	ND	0.22	
75-09-2	Methylene Chloride	**1.1**	0.86	**0.31**	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.87	ND	0.28	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**2.6**	0.89	**0.34**	0.12	
75-15-0	Carbon Disulfide	ND	1.8	ND	0.58	
156-60-5	trans-1,2-Dichloroethene	ND	0.87	ND	0.22	
75-34-3	1,1-Dichloroethane	ND	0.87	ND	0.22	
1634-04-4	Methyl tert-Butyl Ether	ND	0.87	ND	0.24	
108-05-4	Vinyl Acetate	ND	8.3	ND	2.3	
78-93-3	2-Butanone (MEK)	**7.8**	1.7	**2.6**	0.56	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_GWTP** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-003

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02305

Initial Pressure (psig): -3.57 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**2.2**	0.86	**0.55**	0.22	
141-78-6	Ethyl Acetate	**38**	3.5	**11**	0.96	
110-54-3	n-Hexane	**41**	0.87	**12**	0.25	
67-66-3	Chloroform	ND	0.89	ND	0.18	
109-99-9	Tetrahydrofuran (THF)	**11**	1.7	**3.8**	0.56	
107-06-2	1,2-Dichloroethane	ND	0.87	ND	0.22	
71-55-6	1,1,1-Trichloroethane	ND	0.86	ND	0.16	
71-43-2	Benzene	**1.3**	0.83	**0.41**	0.26	
56-23-5	Carbon Tetrachloride	ND	0.83	ND	0.13	
110-82-7	Cyclohexane	ND	1.8	ND	0.53	
78-87-5	1,2-Dichloropropane	ND	0.83	ND	0.18	
75-27-4	Bromodichloromethane	ND	0.87	ND	0.13	
79-01-6	Trichloroethene	**3.8**	0.86	**0.71**	0.16	
123-91-1	1,4-Dioxane	ND	0.86	ND	0.24	
80-62-6	Methyl Methacrylate	ND	1.8	ND	0.44	
142-82-5	n-Heptane	**2.0**	0.87	**0.50**	0.21	
10061-01-5	cis-1,3-Dichloropropene	ND	0.83	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	1.8	ND	0.44	
10061-02-6	trans-1,3-Dichloropropene	ND	0.84	ND	0.19	
79-00-5	1,1,2-Trichloroethane	ND	0.86	ND	0.16	
108-88-3	Toluene	**14**	0.86	**3.7**	0.23	
591-78-6	2-Hexanone	ND	1.8	ND	0.44	
124-48-1	Dibromochloromethane	ND	0.87	ND	0.10	
106-93-4	1,2-Dibromoethane	ND	0.86	ND	0.11	
123-86-4	n-Butyl Acetate	ND	1.8	ND	0.38	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_GWTP** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-003

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02305

Initial Pressure (psig): -3.57 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	**0.94**	0.87	**0.20**	0.19	
127-18-4	Tetrachloroethene	ND	0.86	ND	0.13	
108-90-7	Chlorobenzene	ND	0.86	ND	0.19	
100-41-4	Ethylbenzene	**1.9**	0.86	**0.44**	0.20	
179601-23-1	m,p-Xylenes	**6.6**	1.8	**1.5**	0.42	
75-25-2	Bromoform	ND	0.86	ND	0.083	
100-42-5	Styrene	ND	0.83	ND	0.19	
95-47-6	o-Xylene	**2.4**	0.86	**0.55**	0.20	
111-84-2	n-Nonane	**1.4**	0.86	**0.27**	0.16	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.86	ND	0.12	
98-82-8	Cumene	ND	0.86	ND	0.17	
80-56-8	alpha-Pinene	**1.4**	0.89	**0.26**	0.16	
103-65-1	n-Propylbenzene	ND	0.87	ND	0.18	
622-96-8	4-Ethyltoluene	ND	0.87	ND	0.18	
108-67-8	1,3,5-Trimethylbenzene	ND	0.86	ND	0.17	
95-63-6	1,2,4-Trimethylbenzene	**2.5**	0.86	**0.50**	0.17	
100-44-7	Benzyl Chloride	ND	1.8	ND	0.35	
541-73-1	1,3-Dichlorobenzene	ND	0.86	ND	0.14	
106-46-7	1,4-Dichlorobenzene	ND	0.86	ND	0.14	
95-50-1	1,2-Dichlorobenzene	ND	0.87	ND	0.15	
5989-27-5	d-Limonene	**2.2**	0.83	**0.40**	0.15	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	ND	0.24	
91-20-3	Naphthalene	ND	0.86	ND	0.16	
87-68-3	Hexachlorobutadiene	ND	0.86	ND	0.080	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.69	ND	0.40	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.70	**0.37**	0.14	
74-87-3	Chloromethane	ND	0.68	ND	0.33	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.72	ND	0.10	
75-01-4	Vinyl Chloride	ND	0.69	ND	0.27	
106-99-0	1,3-Butadiene	ND	0.69	ND	0.31	
74-83-9	Bromomethane	ND	0.68	ND	0.17	
75-00-3	Chloroethane	ND	0.68	ND	0.26	
64-17-5	Ethanol	ND	6.7	ND	3.5	
75-05-8	Acetonitrile	ND	1.3	ND	0.79	
107-02-8	Acrolein	ND	1.3	ND	0.58	
67-64-1	Acetone	ND	6.9	ND	2.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**2.4**	0.69	**0.42**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	**12**	1.3	**4.7**	0.54	
107-13-1	Acrylonitrile	ND	1.3	ND	0.61	
75-35-4	1,1-Dichloroethene	ND	0.72	ND	0.18	
75-09-2	Methylene Chloride	ND	0.69	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.70	ND	0.23	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**1.7**	0.72	**0.22**	0.094	
75-15-0	Carbon Disulfide	ND	1.5	ND	0.47	
156-60-5	trans-1,2-Dichloroethene	ND	0.70	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.70	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.70	ND	0.20	
108-05-4	Vinyl Acetate	ND	6.7	ND	1.9	
78-93-3	2-Butanone (MEK)	ND	1.3	ND	0.45	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.69	ND	0.17	
141-78-6	Ethyl Acetate	ND	2.8	ND	0.78	
110-54-3	n-Hexane	**5.0**	0.70	**1.4**	0.20	
67-66-3	Chloroform	ND	0.72	ND	0.15	
109-99-9	Tetrahydrofuran (THF)	ND	1.3	ND	0.45	
107-06-2	1,2-Dichloroethane	ND	0.70	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.69	ND	0.13	
71-43-2	Benzene	ND	0.67	ND	0.21	
56-23-5	Carbon Tetrachloride	ND	0.67	ND	0.11	
110-82-7	Cyclohexane	ND	1.5	ND	0.43	
78-87-5	1,2-Dichloropropane	ND	0.67	ND	0.14	
75-27-4	Bromodichloromethane	ND	0.70	ND	0.11	
79-01-6	Trichloroethene	ND	0.69	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.69	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.5	ND	0.36	
142-82-5	n-Heptane	ND	0.70	ND	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.67	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	1.5	ND	0.36	
10061-02-6	trans-1,3-Dichloropropene	ND	0.68	ND	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.69	ND	0.13	
108-88-3	Toluene	**1.5**	0.69	**0.40**	0.18	
591-78-6	2-Hexanone	ND	1.5	ND	0.36	
124-48-1	Dibromochloromethane	ND	0.70	ND	0.083	
106-93-4	1,2-Dibromoethane	ND	0.69	ND	0.090	
123-86-4	n-Butyl Acetate	ND	1.5	ND	0.31	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.70	ND	0.15	
127-18-4	Tetrachloroethene	ND	0.69	ND	0.10	
108-90-7	Chlorobenzene	ND	0.69	ND	0.15	
100-41-4	Ethylbenzene	ND	0.69	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.5	ND	0.34	
75-25-2	Bromoform	ND	0.69	ND	0.067	
100-42-5	Styrene	ND	0.67	ND	0.16	
95-47-6	o-Xylene	ND	0.69	ND	0.16	
111-84-2	n-Nonane	ND	0.69	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.69	ND	0.10	
98-82-8	Cumene	ND	0.69	ND	0.14	
80-56-8	alpha-Pinene	**2.3**	0.72	**0.40**	0.13	
103-65-1	n-Propylbenzene	ND	0.70	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.70	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.69	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.69	ND	0.14	
100-44-7	Benzyl Chloride	ND	1.5	ND	0.28	
541-73-1	1,3-Dichlorobenzene	ND	0.69	ND	0.12	
106-46-7	1,4-Dichlorobenzene	ND	0.69	ND	0.12	
95-50-1	1,2-Dichlorobenzene	ND	0.70	ND	0.12	
5989-27-5	d-Limonene	ND	0.67	ND	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.3	ND	0.14	
120-82-1	1,2,4-Trichlorobenzene	ND	1.5	ND	0.20	
91-20-3	Naphthalene	ND	0.69	ND	0.13	
87-68-3	Hexachlorobutadiene	ND	0.69	ND	0.065	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	ND	0.30	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.53	ND	0.11	
74-87-3	Chloromethane	ND	0.51	ND	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.54	ND	0.077	
75-01-4	Vinyl Chloride	ND	0.52	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.52	ND	0.24	
74-83-9	Bromomethane	ND	0.51	ND	0.13	
75-00-3	Chloroethane	ND	0.51	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	1.0	ND	0.60	
107-02-8	Acrolein	ND	1.0	ND	0.44	
67-64-1	Acetone	ND	5.2	ND	2.2	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.52	ND	0.093	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	1.0	ND	0.46	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
75-09-2	Methylene Chloride	ND	0.52	ND	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	ND	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.54	ND	0.070	
75-15-0	Carbon Disulfide	ND	1.1	ND	0.35	
156-60-5	trans-1,2-Dichloroethene	ND	0.53	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.53	ND	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	0.53	ND	0.15	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	1.0	ND	0.34	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.52	ND	0.13	
141-78-6	Ethyl Acetate	ND	2.1	ND	0.58	
110-54-3	n-Hexane	ND	0.53	ND	0.15	
67-66-3	Chloroform	ND	0.54	ND	0.11	
109-99-9	Tetrahydrofuran (THF)	ND	1.0	ND	0.34	
107-06-2	1,2-Dichloroethane	ND	0.53	ND	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.52	ND	0.095	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.1	ND	0.32	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.53	ND	0.079	
79-01-6	Trichloroethene	ND	0.52	ND	0.097	
123-91-1	1,4-Dioxane	ND	0.52	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.1	ND	0.27	
142-82-5	n-Heptane	ND	0.53	ND	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	1.1	ND	0.27	
10061-02-6	trans-1,3-Dichloropropene	ND	0.51	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.52	ND	0.095	
108-88-3	Toluene	ND	0.52	ND	0.14	
591-78-6	2-Hexanone	ND	1.1	ND	0.27	
124-48-1	Dibromochloromethane	ND	0.53	ND	0.062	
106-93-4	1,2-Dibromoethane	ND	0.52	ND	0.068	
123-86-4	n-Butyl Acetate	ND	1.1	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.52	ND	0.077	
108-90-7	Chlorobenzene	ND	0.52	ND	0.11	
100-41-4	Ethylbenzene	ND	0.52	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.1	ND	0.25	
75-25-2	Bromoform	ND	0.52	ND	0.050	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.52	ND	0.12	
111-84-2	n-Nonane	ND	0.52	ND	0.099	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.52	ND	0.076	
98-82-8	Cumene	ND	0.52	ND	0.11	
80-56-8	alpha-Pinene	ND	0.54	ND	0.097	
103-65-1	n-Propylbenzene	ND	0.53	ND	0.11	
622-96-8	4-Ethyltoluene	ND	0.53	ND	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	ND	0.11	
95-63-6	1,2,4-Trimethylbenzene	ND	0.52	ND	0.11	
100-44-7	Benzyl Chloride	ND	1.1	ND	0.21	
541-73-1	1,3-Dichlorobenzene	ND	0.52	ND	0.087	
106-46-7	1,4-Dichlorobenzene	ND	0.52	ND	0.087	
95-50-1	1,2-Dichlorobenzene	ND	0.53	ND	0.088	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	1.1	ND	0.15	
91-20-3	Naphthalene	ND	0.52	ND	0.099	
87-68-3	Hexachlorobutadiene	ND	0.52	ND	0.049	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	ND	0.30	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.53	ND	0.11	
74-87-3	Chloromethane	ND	0.51	ND	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.54	ND	0.077	
75-01-4	Vinyl Chloride	ND	0.52	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.52	ND	0.24	
74-83-9	Bromomethane	ND	0.51	ND	0.13	
75-00-3	Chloroethane	ND	0.51	ND	0.19	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	1.0	ND	0.60	
107-02-8	Acrolein	ND	1.0	ND	0.44	
67-64-1	Acetone	ND	5.2	ND	2.2	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.52	ND	0.093	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.41	
107-13-1	Acrylonitrile	ND	1.0	ND	0.46	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
75-09-2	Methylene Chloride	ND	0.52	ND	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	ND	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.54	ND	0.070	
75-15-0	Carbon Disulfide	ND	1.1	ND	0.35	
156-60-5	trans-1,2-Dichloroethene	ND	0.53	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.53	ND	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	0.53	ND	0.15	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	1.0	ND	0.34	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.52	ND	0.13	
141-78-6	Ethyl Acetate	ND	2.1	ND	0.58	
110-54-3	n-Hexane	ND	0.53	ND	0.15	
67-66-3	Chloroform	ND	0.54	ND	0.11	
109-99-9	Tetrahydrofuran (THF)	ND	1.0	ND	0.34	
107-06-2	1,2-Dichloroethane	ND	0.53	ND	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.52	ND	0.095	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
110-82-7	Cyclohexane	ND	1.1	ND	0.32	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.53	ND	0.079	
79-01-6	Trichloroethene	ND	0.52	ND	0.097	
123-91-1	1,4-Dioxane	ND	0.52	ND	0.14	
80-62-6	Methyl Methacrylate	ND	1.1	ND	0.27	
142-82-5	n-Heptane	ND	0.53	ND	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ND	0.11	
108-10-1	4-Methyl-2-pentanone	ND	1.1	ND	0.27	
10061-02-6	trans-1,3-Dichloropropene	ND	0.51	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.52	ND	0.095	
108-88-3	Toluene	ND	0.52	ND	0.14	
591-78-6	2-Hexanone	ND	1.1	ND	0.27	
124-48-1	Dibromochloromethane	ND	0.53	ND	0.062	
106-93-4	1,2-Dibromoethane	ND	0.52	ND	0.068	
123-86-4	n-Butyl Acetate	ND	1.1	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.53	ND	0.11	
127-18-4	Tetrachloroethene	ND	0.52	ND	0.077	
108-90-7	Chlorobenzene	ND	0.52	ND	0.11	
100-41-4	Ethylbenzene	ND	0.52	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.1	ND	0.25	
75-25-2	Bromoform	ND	0.52	ND	0.050	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.52	ND	0.12	
111-84-2	n-Nonane	ND	0.52	ND	0.099	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.52	ND	0.076	
98-82-8	Cumene	ND	0.52	ND	0.11	
80-56-8	alpha-Pinene	ND	0.54	ND	0.097	
103-65-1	n-Propylbenzene	ND	0.53	ND	0.11	
622-96-8	4-Ethyltoluene	ND	0.53	ND	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	ND	0.11	
95-63-6	1,2,4-Trimethylbenzene	ND	0.52	ND	0.11	
100-44-7	Benzyl Chloride	ND	1.1	ND	0.21	
541-73-1	1,3-Dichlorobenzene	ND	0.52	ND	0.087	
106-46-7	1,4-Dichlorobenzene	ND	0.52	ND	0.087	
95-50-1	1,2-Dichlorobenzene	ND	0.53	ND	0.088	
5989-27-5	d-Limonene	ND	0.50	ND	0.090	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ND	0.10	
120-82-1	1,2,4-Trichlorobenzene	ND	1.1	ND	0.15	
91-20-3	Naphthalene	ND	0.52	ND	0.099	
87-68-3	Hexachlorobutadiene	ND	0.52	ND	0.049	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Project ID: P2203433

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 8/1/22
Analyst: Simon Cao Date(s) Received: 8/8/22
Sample Type: 6.0 L Silonite Canister(s) / 6.0 L Summa Canister(s) Date(s) Analyzed: 8/12 - 8/15/22
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P220812-MB	**91**	**101**	**112**	70-130	
Method Blank	P220815-MB	**94**	**99**	**110**	70-130	
Lab Control Sample	P220812-LCS	**90**	**101**	**114**	70-130	
Lab Control Sample	P220815-LCS	**93**	**100**	**111**	70-130	
Duplicate Lab Control Sample	P220812-DLCS	**90**	**101**	**114**	70-130	
Duplicate Lab Control Sample	P220815-DLCS	**93**	**102**	**111**	70-130	
LH18/24-Air_080122_STRIPPER	P2203433-001	**89**	**103**	**110**	70-130	
LH18/24-Air_080122_STRIPPER_a	P2203433-002	**90**	**102**	**109**	70-130	
LH18/24-Air_080122_GWTP	P2203433-003	**90**	**102**	**110**	70-130	
LH18/24-Air_080122_Downwind_North	P2203433-004	**90**	**103**	**110**	70-130	
LH18/24-Air_080122_Downwind_North	P2203433-004DUP	**90**	**102**	**109**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
115-07-1	Propene	41.2	35.3	34.0	**86**	**83**	56-128	4	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	41.6	42.1	41.8	**101**	**100**	71-112	1	25	
74-87-3	Chloromethane	41.2	37.9	37.7	**92**	**92**	53-126	0	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	41.6	47.9	47.3	**115**	**114**	62-121	0.9	25	
75-01-4	Vinyl Chloride	41.6	47.2	46.5	**113**	**112**	63-123	0.9	25	
106-99-0	1,3-Butadiene	41.2	51.9	52.4	**126**	**127**	63-135	0.8	25	
74-83-9	Bromomethane	41.2	40.6	40.0	**99**	**97**	71-112	2	25	
75-00-3	Chloroethane	41.2	35.6	35.2	**86**	**85**	66-117	1	25	
64-17-5	Ethanol	166	165	164	**99**	**99**	57-117	0	25	
75-05-8	Acetonitrile	40.4	29.8	29.7	**74**	**74**	59-131	0	25	
107-02-8	Acrolein	83.2	73.0	72.9	**88**	**88**	71-123	0	25	
67-64-1	Acetone	205	178	178	**87**	**87**	60-117	0	25	
75-69-4	Trichlorofluoromethane (CFC 11)	40.4	41.8	41.0	**103**	**101**	71-114	2	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	80.0	81.3	82.5	**102**	**103**	61-124	1	25	
107-13-1	Acrylonitrile	80.4	74.4	74.3	**93**	**92**	65-130	1	25	
75-35-4	1,1-Dichloroethene	42.0	44.8	44.1	**107**	**105**	74-114	2	25	
75-09-2	Methylene Chloride	41.6	39.4	39.1	**95**	**94**	75-112	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	40.8	33.7	34.4	**83**	**84**	57-127	1	25	
76-13-1	Trichlorotrifluoroethane (CFC 113)	43.2	46.6	46.3	**108**	**107**	73-114	0.9	25	
75-15-0	Carbon Disulfide	82.8	74.6	74.1	**90**	**89**	70-113	1	25	
156-60-5	trans-1,2-Dichloroethene	41.6	40.1	39.8	**96**	**96**	76-119	0	25	
75-34-3	1,1-Dichloroethane	42.8	39.6	39.0	**93**	**91**	70-114	2	25	
1634-04-4	Methyl tert-Butyl Ether	41.2	42.2	41.8	**102**	**101**	72-118	1	25	
108-05-4	Vinyl Acetate	188	226	234	**120**	**124**	56-137	3	25	
78-93-3	2-Butanone (MEK)	81.6	76.1	77.2	**93**	**95**	74-121	2	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	41.2	39.2	39.1	**95**	**95**	73-117	0	25	
141-78-6	Ethyl Acetate	116	104	105	**90**	**91**	59-161	1	25	
110-54-3	n-Hexane	41.6	38.8	38.2	**93**	**92**	55-130	1	25	
67-66-3	Chloroform	42.0	41.5	41.1	**99**	**98**	71-114	1	25	
109-99-9	Tetrahydrofuran (THF)	80.8	77.5	77.0	**96**	**95**	73-114	1	25	
107-06-2	1,2-Dichloroethane	42.0	43.3	43.3	**103**	**103**	71-119	0	25	
71-55-6	1,1,1-Trichloroethane	41.6	45.0	44.6	**108**	**107**	73-119	0.9	25	
71-43-2	Benzene	41.6	41.6	41.7	**100**	**100**	72-113	0	25	
56-23-5	Carbon Tetrachloride	40.4	45.6	45.7	**113**	**113**	67-123	0	25	
110-82-7	Cyclohexane	82.4	86.7	86.3	**105**	**105**	70-119	0	25	
78-87-5	1,2-Dichloropropane	41.2	38.1	37.3	**92**	**91**	70-118	1	25	
75-27-4	Bromodichloromethane	41.6	43.4	43.4	**104**	**104**	74-119	0	25	
79-01-6	Trichloroethene	40.8	51.5	51.4	**126**	**126**	74-115	0	25	**L**
123-91-1	1,4-Dioxane	41.2	50.8	50.7	**123**	**123**	77-124	0	25	
80-62-6	Methyl Methacrylate	82.0	98.9	98.3	**121**	**120**	78-126	0.8	25	
142-82-5	n-Heptane	41.2	41.2	40.5	**100**	**98**	70-119	2	25	
10061-01-5	cis-1,3-Dichloropropene	41.6	44.1	43.9	**106**	**106**	81-126	0	25	
108-10-1	4-Methyl-2-pentanone	82.4	83.8	83.5	**102**	**101**	73-129	1	25	
10061-02-6	trans-1,3-Dichloropropene	40.0	42.4	42.2	**106**	**106**	80-127	0	25	
79-00-5	1,1,2-Trichloroethane	41.6	43.4	43.1	**104**	**104**	78-117	0	25	
108-88-3	Toluene	41.2	45.1	44.8	**109**	**109**	70-118	0	25	
591-78-6	2-Hexanone	81.2	83.6	84.1	**103**	**104**	74-132	1	25	
124-48-1	Dibromochloromethane	42.0	50.6	50.8	**120**	**121**	69-137	0.8	25	
106-93-4	1,2-Dibromoethane	41.6	44.6	44.8	**107**	**108**	76-128	0.9	25	
123-86-4	n-Butyl Acetate	81.2	83.6	84.1	**103**	**104**	75-134	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220812-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
111-65-9	n-Octane	41.6	42.5	42.3	**102**	**102**	68-120	0	25	
127-18-4	Tetrachloroethene	42.4	48.4	48.1	**114**	**113**	63-130	0.9	25	
108-90-7	Chlorobenzene	41.2	45.8	45.9	**111**	**111**	70-118	0	25	
100-41-4	Ethylbenzene	41.2	46.2	46.3	**112**	**112**	71-123	0	25	
179601-23-1	m,p-Xylenes	83.2	93.2	93.0	**112**	**112**	67-127	0	25	
75-25-2	Bromoform	42.0	50.2	49.9	**120**	**119**	65-149	0.8	25	
100-42-5	Styrene	40.4	46.2	46.1	**114**	**114**	76-132	0	25	
95-47-6	o-Xylene	41.6	48.0	47.7	**115**	**115**	69-124	0	25	
111-84-2	n-Nonane	41.6	40.8	40.5	**98**	**97**	64-127	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	41.6	40.8	40.4	**98**	**97**	69-128	1	25	
98-82-8	Cumene	41.2	47.7	47.7	**116**	**116**	69-125	0	25	
80-56-8	alpha-Pinene	42.0	46.9	47.9	**112**	**114**	68-129	2	25	
103-65-1	n-Propylbenzene	41.6	46.4	46.3	**112**	**111**	70-127	0.9	25	
622-96-8	4-Ethyltoluene	41.6	47.9	48.7	**115**	**117**	69-127	2	25	
108-67-8	1,3,5-Trimethylbenzene	41.6	49.6	49.2	**119**	**118**	66-129	0.8	25	
95-63-6	1,2,4-Trimethylbenzene	41.2	49.2	49.0	**119**	**119**	63-142	0	25	
100-44-7	Benzyl Chloride	83.2	88.6	90.9	**106**	**109**	73-145	3	25	
541-73-1	1,3-Dichlorobenzene	41.6	46.4	45.7	**112**	**110**	67-136	2	25	
106-46-7	1,4-Dichlorobenzene	42.0	43.0	43.3	**102**	**103**	63-134	1	25	
95-50-1	1,2-Dichlorobenzene	42.0	47.5	47.4	**113**	**113**	64-139	0	25	
5989-27-5	d-Limonene	41.2	41.9	42.7	**102**	**104**	63-137	2	25	
96-12-8	1,2-Dibromo-3-chloropropane	80.8	97.8	97.4	**121**	**121**	72-145	0	25	
120-82-1	1,2,4-Trichlorobenzene	84.0	79.7	79.6	**95**	**95**	62-154	0	25	
91-20-3	Naphthalene	42.0	38.0	38.1	**90**	**91**	62-156	1	25	
87-68-3	Hexachlorobutadiene	42.4	47.9	47.9	**113**	**113**	55-142	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
115-07-1	Propene	41.2	33.9	34.6	**82**	**84**	56-128	2	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	41.6	44.4	44.4	**107**	**107**	71-112	0	25	
74-87-3	Chloromethane	41.2	38.6	39.1	**94**	**95**	53-126	1	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	41.6	49.5	50.2	**119**	**121**	62-121	2	25	
75-01-4	Vinyl Chloride	41.6	46.3	47.7	**111**	**115**	63-123	4	25	
106-99-0	1,3-Butadiene	41.2	53.0	54.4	**129**	**132**	63-135	2	25	
74-83-9	Bromomethane	41.2	40.5	41.1	**98**	**100**	71-112	2	25	
75-00-3	Chloroethane	41.2	35.8	36.8	**87**	**89**	66-117	2	25	
64-17-5	Ethanol	166	167	169	**101**	**102**	57-117	1	25	
75-05-8	Acetonitrile	40.4	29.6	30.3	**73**	**75**	59-131	3	25	
107-02-8	Acrolein	83.2	70.8	73.1	**85**	**88**	71-123	3	25	
67-64-1	Acetone	205	180	184	**88**	**90**	60-117	2	25	
75-69-4	Trichlorofluoromethane (CFC 11)	40.4	44.0	44.2	**109**	**109**	71-114	0	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	80.0	84.0	86.2	**105**	**108**	61-124	3	25	
107-13-1	Acrylonitrile	80.4	74.7	75.1	**93**	**93**	65-130	0	25	
75-35-4	1,1-Dichloroethene	42.0	45.2	45.6	**108**	**109**	74-114	0.9	25	
75-09-2	Methylene Chloride	41.6	39.5	40.4	**95**	**97**	75-112	2	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	40.8	34.2	34.9	**84**	**86**	57-127	2	25	
76-13-1	Trichlorotrifluoroethane (CFC 113)	43.2	48.7	49.0	**113**	**113**	73-114	0	25	
75-15-0	Carbon Disulfide	82.8	74.9	76.2	**90**	**92**	70-113	2	25	
156-60-5	trans-1,2-Dichloroethene	41.6	40.6	41.5	**98**	**100**	76-119	2	25	
75-34-3	1,1-Dichloroethane	42.8	40.1	41.0	**94**	**96**	70-114	2	25	
1634-04-4	Methyl tert-Butyl Ether	41.2	43.3	44.0	**105**	**107**	72-118	2	25	
108-05-4	Vinyl Acetate	188	228	238	**121**	**127**	56-137	5	25	
78-93-3	2-Butanone (MEK)	81.6	75.9	79.2	**93**	**97**	74-121	4	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	41.2	39.9	40.9	**97**	**99**	73-117	2	25	
141-78-6	Ethyl Acetate	116	103	107	**89**	**92**	59-161	3	25	
110-54-3	n-Hexane	41.6	38.5	39.6	**93**	**95**	55-130	2	25	
67-66-3	Chloroform	42.0	42.9	43.2	**102**	**103**	71-114	1	25	
109-99-9	Tetrahydrofuran (THF)	80.8	78.1	80.1	**97**	**99**	73-114	2	25	
107-06-2	1,2-Dichloroethane	42.0	45.4	46.3	**108**	**110**	71-119	2	25	
71-55-6	1,1,1-Trichloroethane	41.6	47.1	47.2	**113**	**113**	73-119	0	25	
71-43-2	Benzene	41.6	41.7	42.3	**100**	**102**	72-113	2	25	
56-23-5	Carbon Tetrachloride	40.4	48.5	49.1	**120**	**122**	67-123	2	25	
110-82-7	Cyclohexane	82.4	86.7	88.6	**105**	**108**	70-119	3	25	
78-87-5	1,2-Dichloropropane	41.2	37.5	38.7	**91**	**94**	70-118	3	25	
75-27-4	Bromodichloromethane	41.6	44.7	45.6	**107**	**110**	74-119	3	25	
79-01-6	Trichloroethene	40.8	52.4	53.4	**128**	**131**	74-115	2	25	**L**
123-91-1	1,4-Dioxane	41.2	51.5	51.8	**125**	**126**	77-124	0.8	25	**L**
80-62-6	Methyl Methacrylate	82.0	99.6	102	**121**	**124**	78-126	2	25	
142-82-5	n-Heptane	41.2	40.5	40.9	**98**	**99**	70-119	1	25	
10061-01-5	cis-1,3-Dichloropropene	41.6	43.6	44.8	**105**	**108**	81-126	3	25	
108-10-1	4-Methyl-2-pentanone	82.4	83.7	84.3	**102**	**102**	73-129	0	25	
10061-02-6	trans-1,3-Dichloropropene	40.0	42.0	43.1	**105**	**108**	80-127	3	25	
79-00-5	1,1,2-Trichloroethane	41.6	43.9	44.5	**106**	**107**	78-117	0.9	25	
108-88-3	Toluene	41.2	46.0	47.5	**112**	**115**	70-118	3	25	
591-78-6	2-Hexanone	81.2	86.9	90.6	**107**	**112**	74-132	5	25	
124-48-1	Dibromochloromethane	42.0	53.0	54.5	**126**	**130**	69-137	3	25	
106-93-4	1,2-Dibromoethane	41.6	46.4	47.4	**112**	**114**	76-128	2	25	
123-86-4	n-Butyl Acetate	81.2	85.4	89.2	**105**	**110**	75-134	5	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P220815-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
111-65-9	n-Octane	41.6	42.6	44.4	**102**	**107**	68-120	5	25	
127-18-4	Tetrachloroethene	42.4	50.8	52.2	**120**	**123**	63-130	2	25	
108-90-7	Chlorobenzene	41.2	47.1	48.5	**114**	**118**	70-118	3	25	
100-41-4	Ethylbenzene	41.2	47.6	49.3	**116**	**120**	71-123	3	25	
179601-23-1	m,p-Xylenes	83.2	96.6	99.2	**116**	**119**	67-127	3	25	
75-25-2	Bromoform	42.0	53.0	54.1	**126**	**129**	65-149	2	25	
100-42-5	Styrene	40.4	46.7	48.6	**116**	**120**	76-132	3	25	
95-47-6	o-Xylene	41.6	49.3	51.1	**119**	**123**	69-124	3	25	
111-84-2	n-Nonane	41.6	41.1	43.1	**99**	**104**	64-127	5	25	
79-34-5	1,1,2,2-Tetrachloroethane	41.6	41.3	42.4	**99**	**102**	69-128	3	25	
98-82-8	Cumene	41.2	49.5	50.8	**120**	**123**	69-125	2	25	
80-56-8	alpha-Pinene	42.0	48.9	51.1	**116**	**122**	68-129	5	25	
103-65-1	n-Propylbenzene	41.6	48.2	49.5	**116**	**119**	70-127	3	25	
622-96-8	4-Ethyltoluene	41.6	49.5	51.7	**119**	**124**	69-127	4	25	
108-67-8	1,3,5-Trimethylbenzene	41.6	51.0	52.4	**123**	**126**	66-129	2	25	
95-63-6	1,2,4-Trimethylbenzene	41.2	50.4	51.9	**122**	**126**	63-142	3	25	
100-44-7	Benzyl Chloride	83.2	89.2	94.3	**107**	**113**	73-145	5	25	
541-73-1	1,3-Dichlorobenzene	41.6	47.1	48.7	**113**	**117**	67-136	3	25	
106-46-7	1,4-Dichlorobenzene	42.0	43.8	45.4	**104**	**108**	63-134	4	25	
95-50-1	1,2-Dichlorobenzene	42.0	48.5	49.6	**115**	**118**	64-139	3	25	
5989-27-5	d-Limonene	41.2	42.5	44.5	**103**	**108**	63-137	5	25	
96-12-8	1,2-Dibromo-3-chloropropane	80.8	97.8	100	**121**	**124**	72-145	2	25	
120-82-1	1,2,4-Trichlorobenzene	84.0	80.0	80.5	**95**	**96**	62-154	1	25	
91-20-3	Naphthalene	42.0	36.9	37.8	**88**	**90**	62-156	2	25	
87-68-3	Hexachlorobutadiene	42.4	49.5	49.7	**117**	**117**	55-142	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004DUP

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Propene	ND	ND	ND	ND	-	-	25	
Dichlorodifluoromethane (CFC 12)	1.82	0.369	1.96	0.396	1.89	**7**	25	
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	ND	ND	ND	ND	-	-	25	
Acetonitrile	ND	ND	ND	ND	-	-	25	
Acrolein	ND	ND	ND	ND	-	-	25	
Acetone	ND	ND	7.37	3.10	-	-	25	
Trichlorofluoromethane	2.39	0.425	2.51	0.447	2.45	**5**	25	
2-Propanol (Isopropyl Alcohol)	11.6	4.72	11.3	4.61	11.45	**3**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	1.67	0.217	1.73	0.226	1.7	**4**	25	
Carbon Disulfide	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004DUP

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	ND	ND	ND	ND	-	-	25	
n-Hexane	5.03	1.43	5.24	1.49	5.135	**4**	25	
Chloroform	ND	ND	ND	ND	-	-	25	
Tetrahydrofuran (THF)	ND	ND	1.36	0.462	-	-	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	ND	ND	ND	ND	-	-	25	
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
1,4-Dioxane	ND	ND	ND	ND	-	-	25	
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	ND	ND	ND	ND	-	-	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	1.53	0.405	1.59	0.423	1.56	**4**	25	
2-Hexanone	ND	ND	ND	ND	-	-	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-Air_080122_Downwind_North** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150** ALS Sample ID: P2203433-004DUP

Test Code: EPA TO-15 Date Collected: 8/1/22
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 8/8/22
Analyst: Simon Cao Date Analyzed: 8/12/22
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02398

Initial Pressure (psig): -0.96 Final Pressure (psig): 3.51

Canister Dilution Factor: 1.33

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result **ppbV**	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
n-Octane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	ND	ND	ND	ND	-	-	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	ND	ND	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	ND	ND	-	-	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	ND	ND	ND	ND	-	-	25	
n-Nonane	ND	ND	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	ND	ND	ND	ND	-	-	25	
alpha-Pinene	2.25	0.404	2.36	0.424	2.305	**5**	25	
n-Propylbenzene	ND	ND	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	ND	ND	ND	ND	-	-	25	
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 08122202.D
Analyst: Simon Cao Date Analyzed: 8/11/22
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 23:06
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	157177	7.21	634141	9.28	129041	14.81
	Upper Limit	220048	7.54	887797	9.61	180657	15.14
	Lower Limit	94306	6.88	380485	8.95	77425	14.48
	Client Sample ID						
01	Method Blank	138243	7.19	569433	9.26	116930	14.81
02	Lab Control Sample	145025	7.21	587185	9.28	120135	14.81
03	Duplicate Lab Control Sample	145408	7.21	589591	9.28	119930	14.81
04	LH18/24-Air_080122_STRIPPER	143922	7.21	577886	9.28	114004	14.81
05	LH18/24-Air_080122_STRIPPER_a	141195	7.21	566124	9.28	111910	14.81
06	LH18/24-Air_080122_GWTP	149258	7.21	599540	9.27	118476	14.81
07	LH18/24-Air_080122_Downwind_North	149792	7.20	616292	9.26	121810	14.81
08	LH18/24-Air_080122_Downwind_North (Lab Du	142922	7.20	587925	9.26	117914	14.81
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.** ALS Project ID: P2203433
Client Project ID: **LHAAP GWTP / NW01312.0150**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 08152202.D
Analyst: Simon Cao Date Analyzed: 8/15/22
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 05:08
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	139669	7.22	567568	9.28	118074	14.81
	Upper Limit	195537	7.55	794595	9.61	165304	15.14
	Lower Limit	83801	6.89	340541	8.95	70844	14.48
	Client Sample ID						
01	Method Blank	126773	7.20	516879	9.26	105961	14.81
02	Lab Control Sample	133071	7.22	543507	9.28	109356	14.81
03	Duplicate Lab Control Sample	133426	7.22	546458	9.28	108131	14.81
04	LH18/24-Air_080122_STRIPPER (Dilution)	137873	7.20	563721	9.26	112421	14.81
05	LH18/24-Air_080122_STRIPPER_a (Dilution)	137834	7.20	559010	9.27	113466	14.81
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122225.D Vial: 11
Acq On : 12 Aug 2022 15:13 Operator: SC
Sample : P2203433-001 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 15:35:58 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	143922	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	577886	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	114004	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	269587	11.164	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.28%				
57) Toluene-d8 (SS2)	12.40	98	614240	12.838	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%				
73) Bromofluorobenzene (SS3)	16.79	174	265034	13.712	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.68%				
Target Compounds							Qvalue
2) Propene	3.28	42	115	N.D.			
3) Dichlorodifluoromethan...	3.28	85	22002	0.647	ng	#	92
4) Chloromethane	3.48	50	126	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	3.66	62	114074	7.834	ng		99
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.32	45	52	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.			
13) Acetone	4.65	58	1722	N.D.			
14) Trichlorofluoromethane	4.74	101	946	N.D.			
15) 2-Propanol (Isopropanol)	4.86	45	1619	N.D.			
16) Acrylonitrile	5.10	53	2558	N.D.			
17) 1,1-Dichloroethene	5.24	96	19473	1.614	ng		87
18) 2-Methyl-2-Propanol (t...	5.24	59	1422	N.D.			
19) Methylene Chloride	5.33	84	8245	0.627	ng		94
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.56	151	1447123	103.441	ng		95
22) Carbon Disulfide	5.59	76	3801	N.D.			
23) trans-1,2-Dichloroethene	6.12	61	5579	N.D.			
24) 1,1-Dichloroethane	6.30	63	5604	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.69	72	138	N.D.			
28) cis-1,2-Dichloroethene	7.06	61	1959928	103.110	ng		93
29) Diisopropyl Ether	7.34	87	731	N.D.			
30) Ethyl Acetate	7.40	61	110	N.D.			
31) n-Hexane	7.27	57	686	N.D.			
32) Chloroform	7.33	83	8790	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.09	62	29989	1.274	ng		97
38) 1,1,1-Trichloroethane	8.38	97	741	N.D.			
39) Isopropyl Acetate	9.28	61	18482	No Calib			
40) 1-Butanol	9.19	56	1715	No Calib			
41) Benzene	8.87	78	2296	N.D.			
42) Carbon Tetrachloride	9.04	117	2577	N.D.			
43) Cyclohexane	9.20	84	1682	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	10.12	130	2370464	172.920	ng		99
48) 1,4-Dioxane	10.13	88	687	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122225.D Vial: 11
Acq On : 12 Aug 2022 15:13 Operator: SC
Sample : P2203433-001 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 15:35:58 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

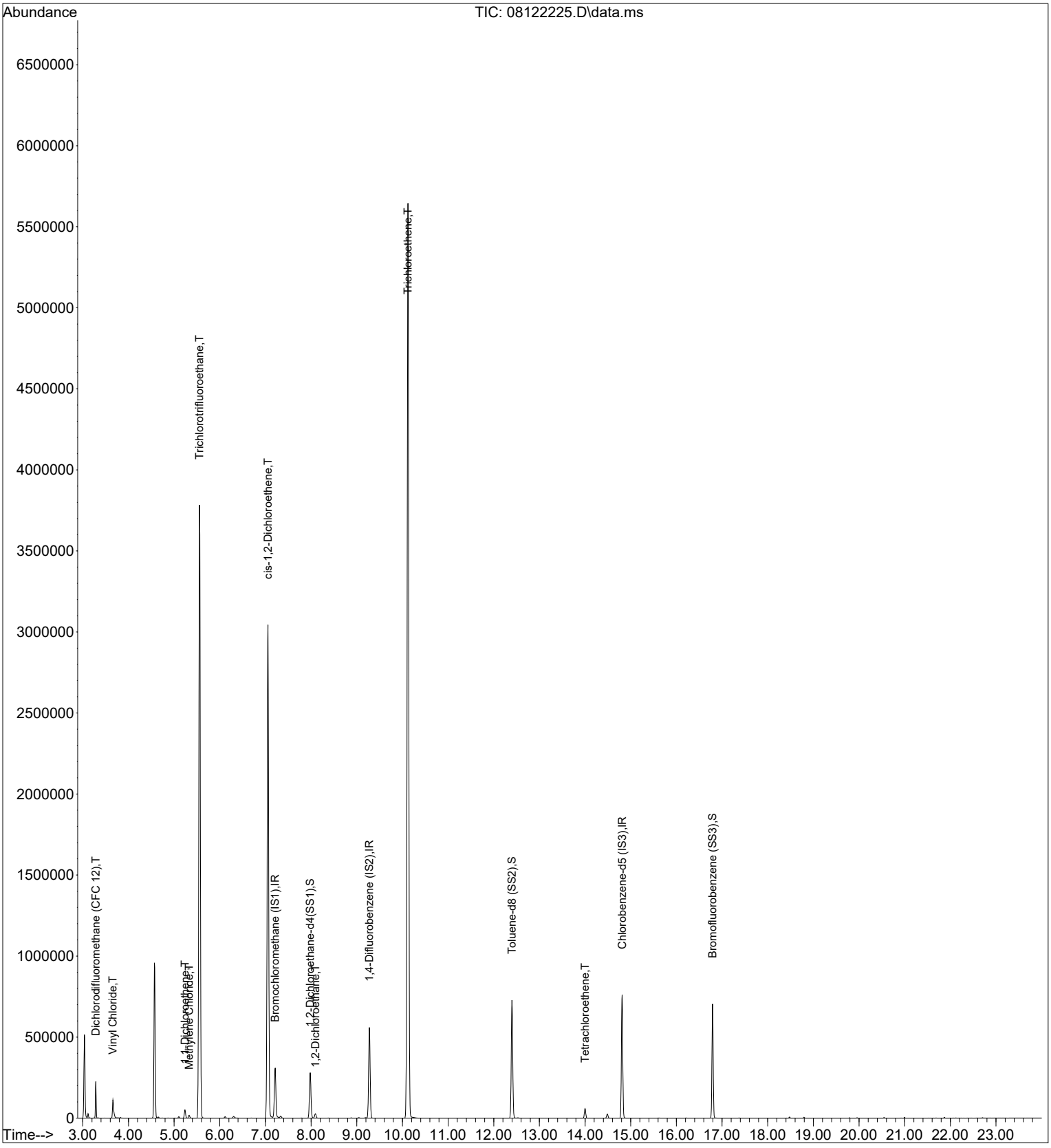
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	12.14	97	109	N.D.		
58) Toluene	12.53	91	2310	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	14.00	166	21537	1.289	ng	97
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.38	91	618	N.D.		
67) m- & p-Xylenes	15.61	91	1875	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.08	104	501	N.D.		
70) o-Xylene	16.21	91	1532	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	16.79	105	268	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	16.79	105	268	No Calib	#	
78) 4-Ethyltoluene	17.80	105	196	N.D.		
79) 1,3,5-Trimethylbenzene	17.80	105	196	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.41	105	607	N.D.		
83) n-Decane	16.78	58	119	No Calib	#	
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.91	119	110	N.D.		
89) 1,2,3-Trimethylbenzene	18.41	105	607	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.93	128	443	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122225.D Vial: 11
Acq On : 12 Aug 2022 15:13 Operator: SC
Sample : P2203433-001 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 15:35:58 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122225.D Vial: 11
Acq On : 12 Aug 2022 15:13 Operator: SC
Sample : P2203433-001 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 15:35:58 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

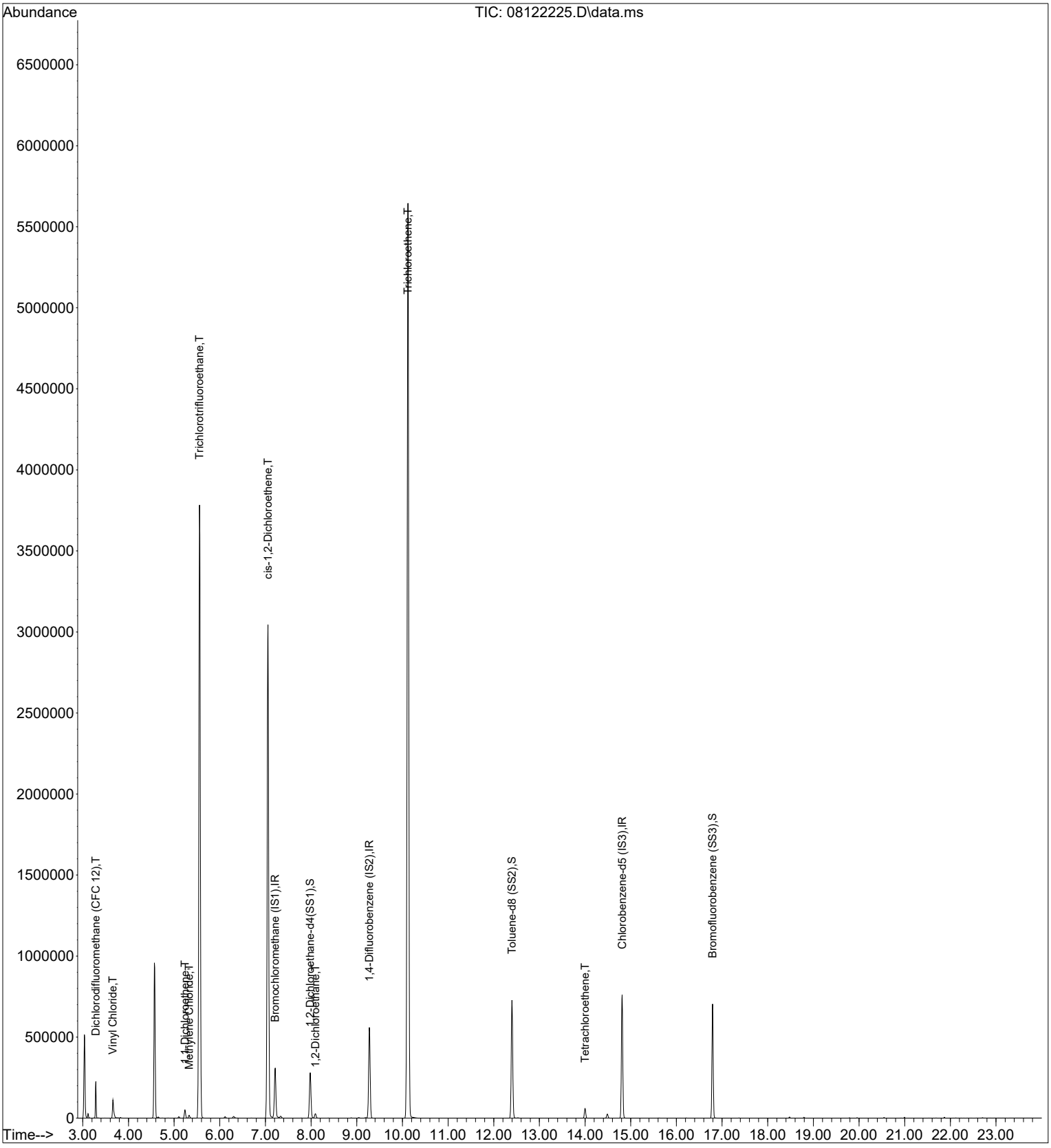
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	143922	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	577886	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	114004	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	269587	11.164	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.28%				
57) Toluene-d8 (SS2)	12.40	98	614240	12.838	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.72%				
73) Bromofluorobenzene (SS3)	16.79	174	265034	13.712	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.68%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.28	85	22002	0.647	ng	#	92
6) Vinyl Chloride	3.66	62	114074	7.834	ng		99
17) 1,1-Dichloroethene	5.24	96	19473	1.614	ng		87
19) Methylene Chloride	5.33	84	8245	0.627	ng		94
21) Trichlorotrifluoroethane	5.56	151	1447123	103.441	ng		95
28) cis-1,2-Dichloroethene	7.06	61	1959928	103.110	ng		93
36) 1,2-Dichloroethane	8.09	62	29989	1.274	ng		97
47) Trichloroethene	10.12	130	2370464	172.920	ng		99
64) Tetrachloroethene	14.00	166	21537	1.289	ng		97

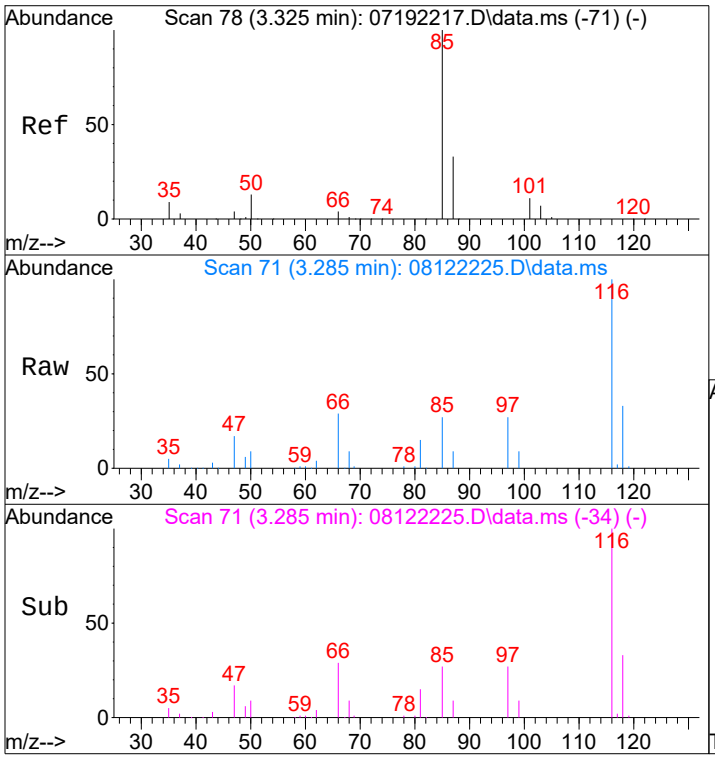
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122225.D Vial: 11
Acq On : 12 Aug 2022 15:13 Operator: SC
Sample : P2203433-001 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 15:35:58 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

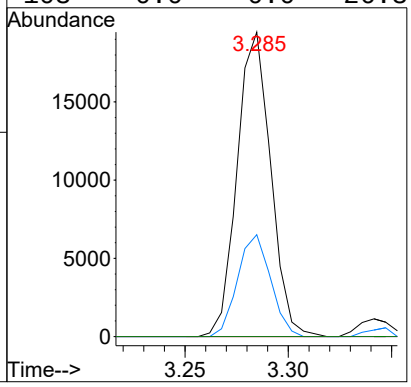


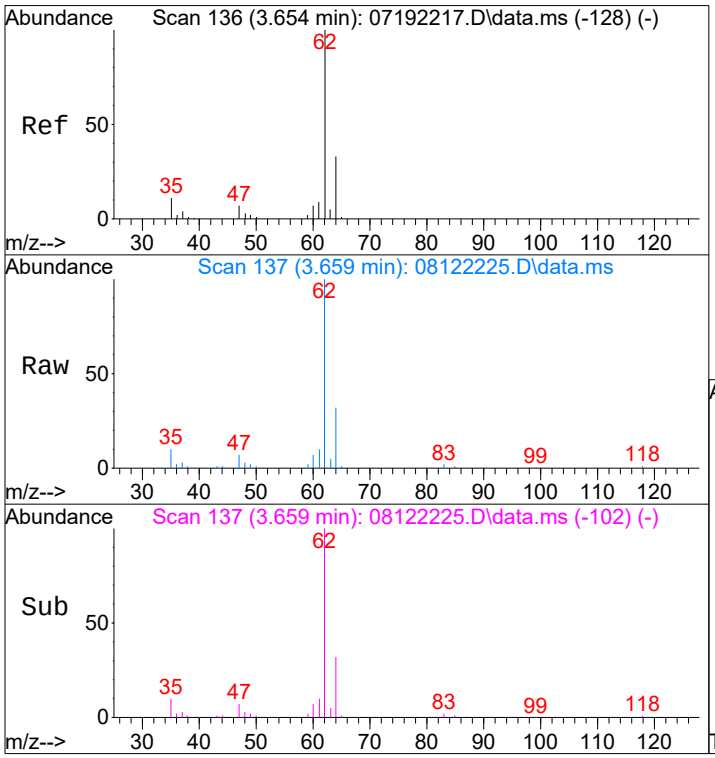


#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.65 ng
RT: 3.28 min Scan# 71
Delta R.T. -0.040 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 85 Resp: 22002

Ion	Ratio	Lower	Upper
85	100		
87	32.9	13.1	53.1
101	0.0	0.0	30.1
103	0.0	0.0	26.3

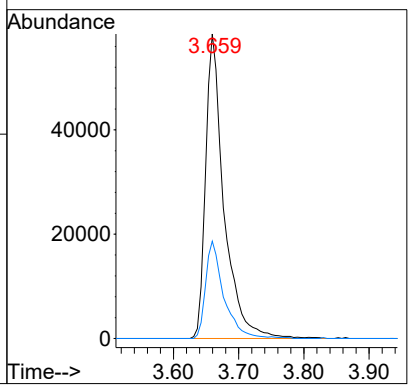


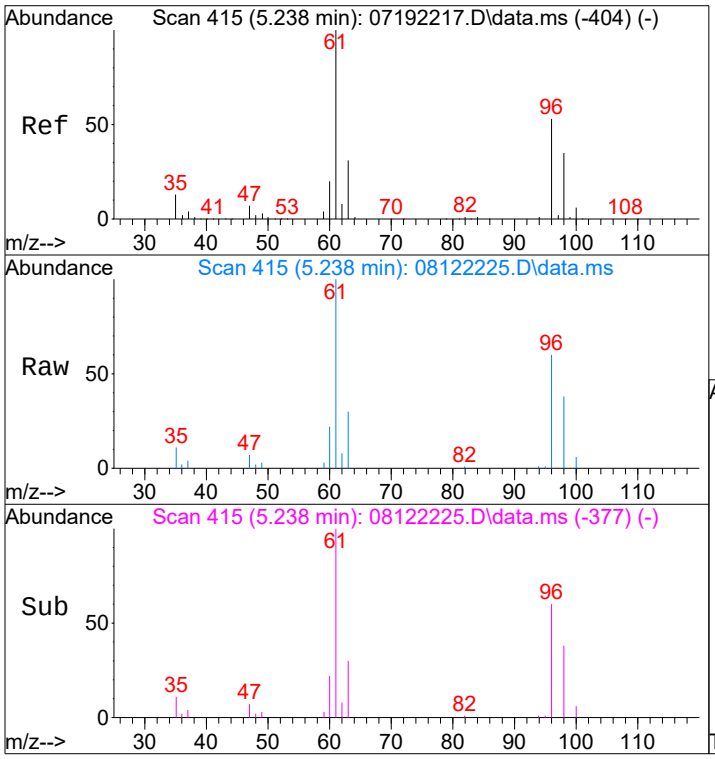


#6
Vinyl Chloride
Concen: 7.83 ng
RT: 3.66 min Scan# 137
Delta R.T. -0.049 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 62 Resp: 114074

Ion	Ratio	Lower	Upper
62	100		
64	31.9	12.7	52.7

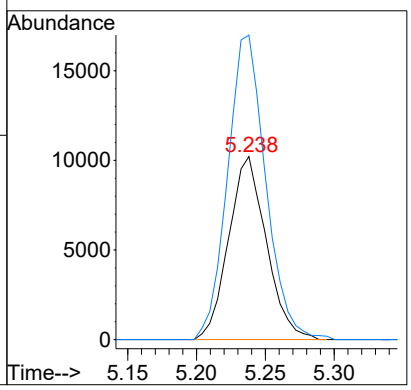


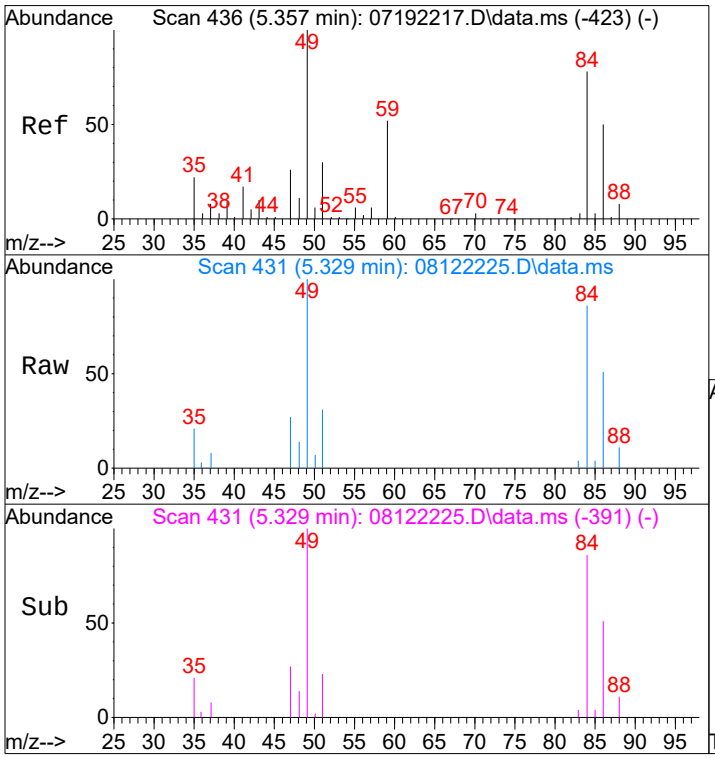


#17
1,1-Dichloroethene
Concen: 1.61 ng
RT: 5.24 min Scan# 415
Delta R.T. -0.035 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 96 Resp: 19473

Ion	Ratio	Lower	Upper
96	100		
61	168.4	167.4	207.4

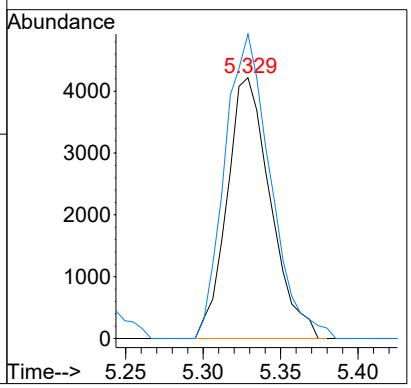


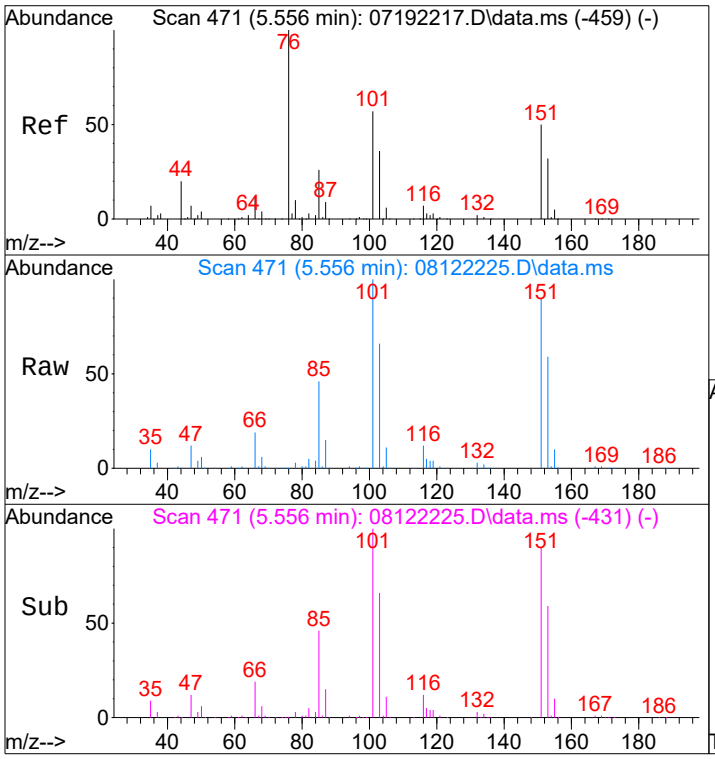


#19
Methylene Chloride
Concen: 0.63 ng
RT: 5.33 min Scan# 431
Delta R.T. -0.024 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 84 Resp: 8245

Ion	Ratio	Lower	Upper
84	100		
49	122.7	104.9	154.9

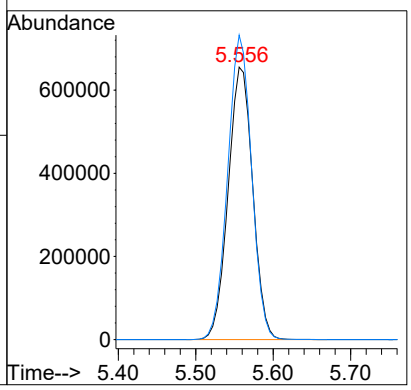


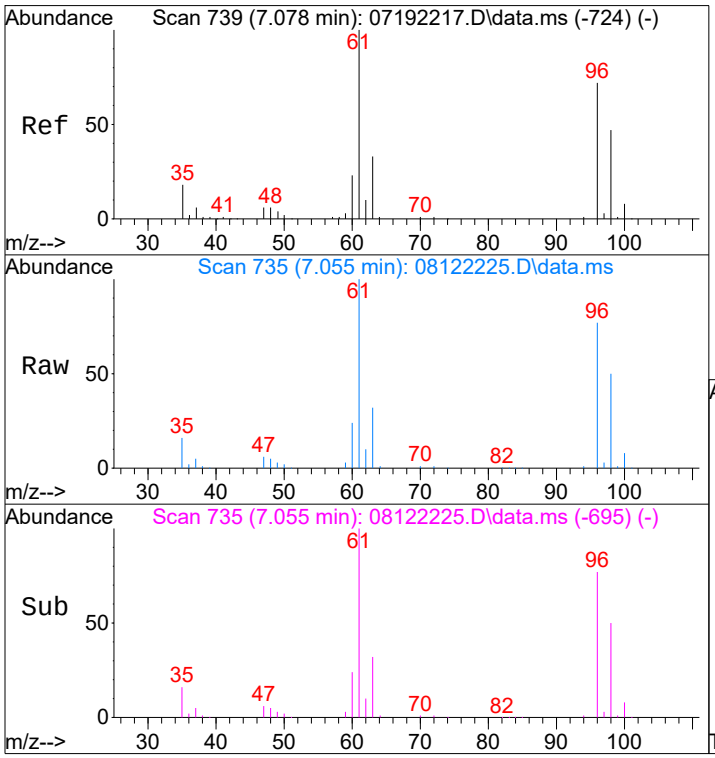


#21
Trichlorotrifluoroethane
Concen: 103.44 ng
RT: 5.56 min Scan# 471
Delta R.T. -0.025 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion:151 Resp: 1447123

Ion	Ratio	Lower	Upper
151	100		
101	108.7	94.5	134.5

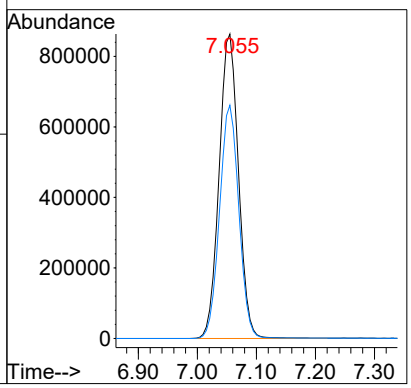


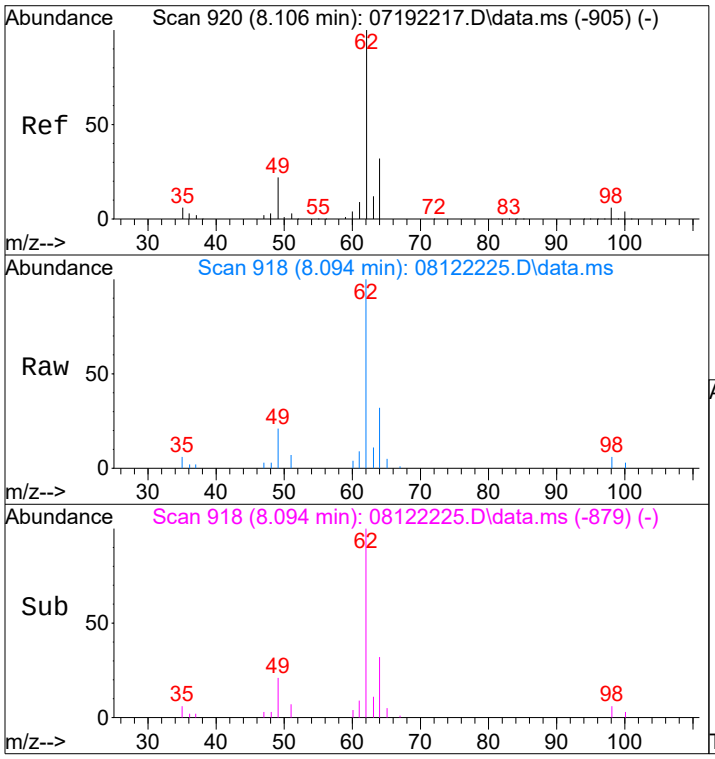


#28
cis-1,2-Dichloroethene
Concen: 103.11 ng
RT: 7.06 min Scan# 735
Delta R.T. -0.022 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 61 Resp: 1959928

Ion	Ratio	Lower	Upper
61	100		
96	76.6	51.1	91.1

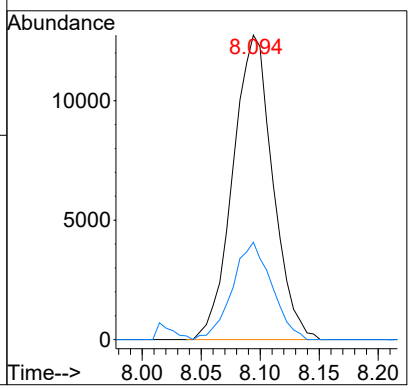


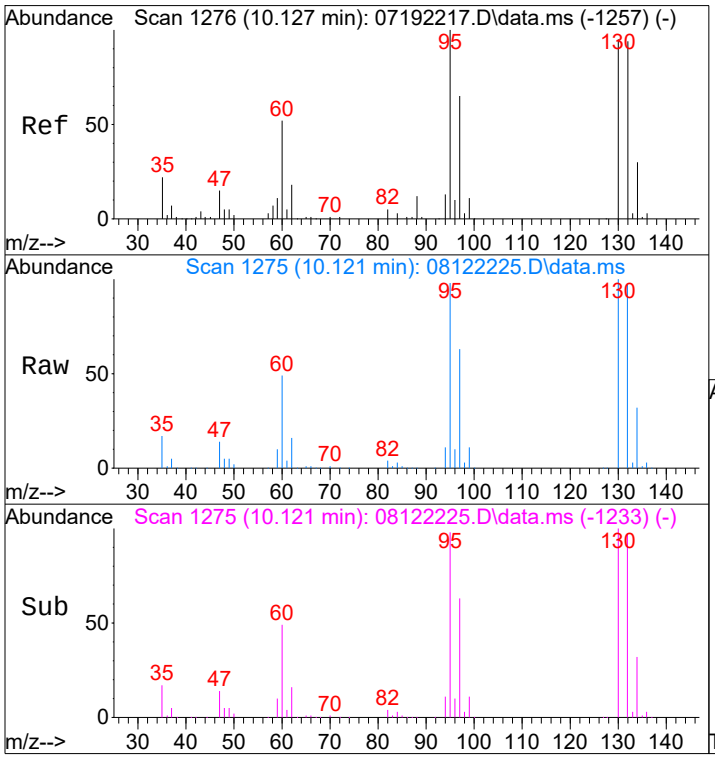


#36
1,2-Dichloroethane
Concen: 1.27 ng
RT: 8.09 min Scan# 918
Delta R.T. -0.028 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion: 62 Resp: 29989

Ion	Ratio	Lower	Upper
62	100		
64	31.5	13.0	53.0

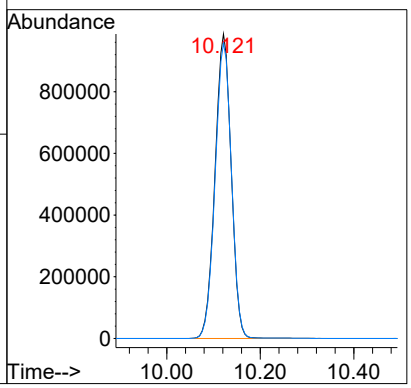


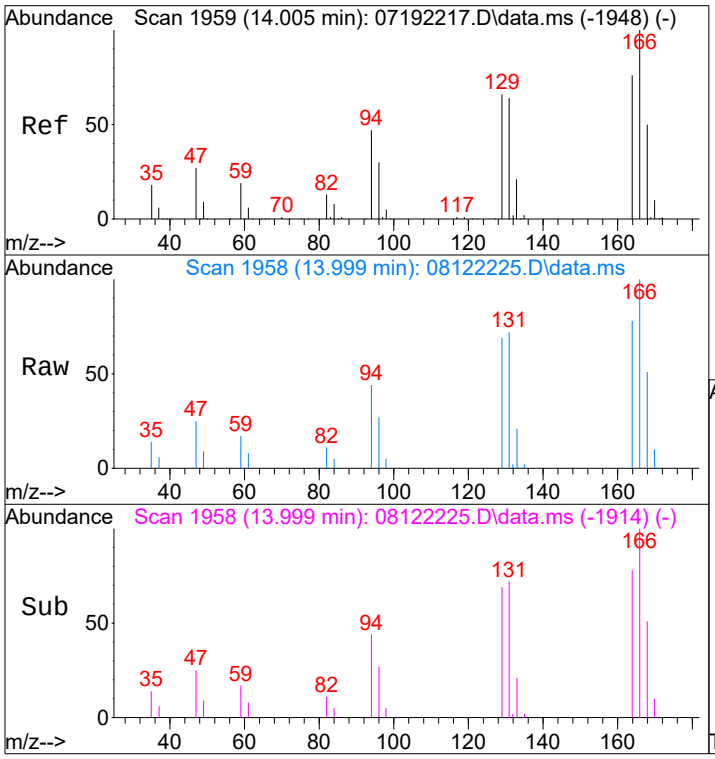


#47
Trichloroethene
Concen: 172.92 ng
RT: 10.12 min Scan# 1275
Delta R.T. -0.014 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion:130 Resp: 2370464

Ion	Ratio	Lower	Upper
130	100		
132	97.8	77.3	117.3

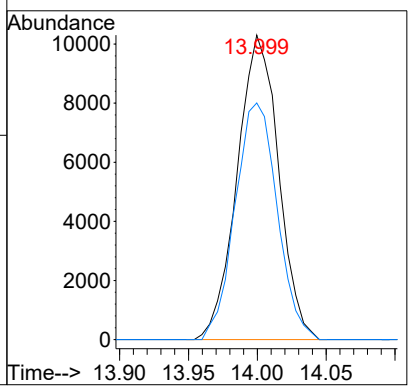




#64
Tetrachloroethene
Concen: 1.29 ng
RT: 14.00 min Scan# 1958
Delta R.T. -0.000 min
Lab File: 08122225.D
Acq: 12 Aug 2022 15:13

Tgt Ion:166 Resp: 21537

Ion	Ratio	Lower	Upper
166	100		
164	79.1	56.7	96.7



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152211.D Vial: 1
Acq On : 15 Aug 2022 10:54 Operator: SC
Sample : P2203433-001Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:17:26 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	137873	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	563721	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	112421	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.96	65	270830	11.707	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.68%			
57) Toluene-d8 (SS2)	12.39	98	594614	12.602	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.80%			
73) Bromofluorobenzene (SS3)	16.79	174	256928	13.479	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.84%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	3.29	85	3297	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	3.68	62	18689	1.340	ng	96
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.30	45	66	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.65	58	873	N.D.		
14) Trichlorofluoromethane	4.73	101	137	N.D.		
15) 2-Propanol (Isopropanol)	4.85	45	592	N.D.		
16) Acrylonitrile	5.10	53	128	N.D.		
17) 1,1-Dichloroethene	5.23	96	2830	N.D.		
18) 2-Methyl-2-Propanol (t...	5.54	59	2429	N.D.		
19) Methylene Chloride	5.32	84	1256	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.54	151	220792	16.475	ng	91
22) Carbon Disulfide	5.59	76	677	N.D.		
23) trans-1,2-Dichloroethene	6.11	61	819	N.D.		
24) 1,1-Dichloroethane	6.28	63	858	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	7.04	61	287737	15.802	ng	94
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.25	61	742	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.32	83	1382	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.08	62	4952	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	18583	No Calib		
40) 1-Butanol	9.18	56	116	No Calib	#	
41) Benzene	8.86	78	724	N.D.		
42) Carbon Tetrachloride	9.04	117	404	N.D.		
43) Cyclohexane	9.18	84	194	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.11	83	4023	N.D.		
47) Trichloroethene	10.11	130	354916	26.541	ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152211.D Vial: 1
Acq On : 15 Aug 2022 10:54 Operator: SC
Sample : P2203433-001Dil (5.0mL) Inst : MS09
Misc : S35-07192201

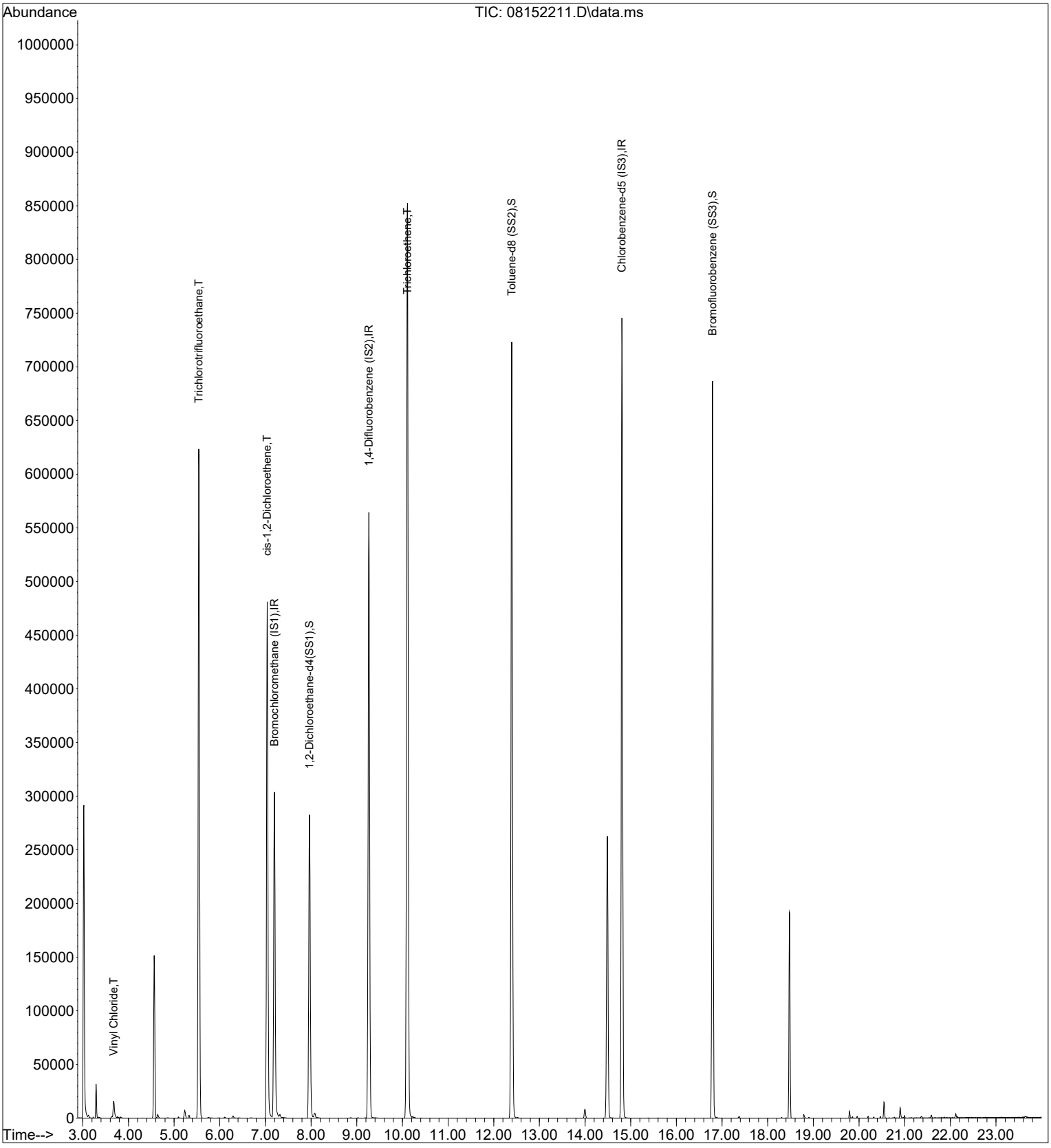
Quant Time: Aug 15 11:17:26 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.52	91	681	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	13.99	166	3200	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.37	91	213	N.D.	
67) m- & p-Xylenes	15.60	91	207	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.21	91	206	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.78	105	198	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	16.78	105	198	No Calib	#
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.41	105	234	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.48	105	871	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	729	N.D.	
89) 1,2,3-Trimethylbenzene	18.41	105	234	No Calib	#
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.93	128	431	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.47	119	3984	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

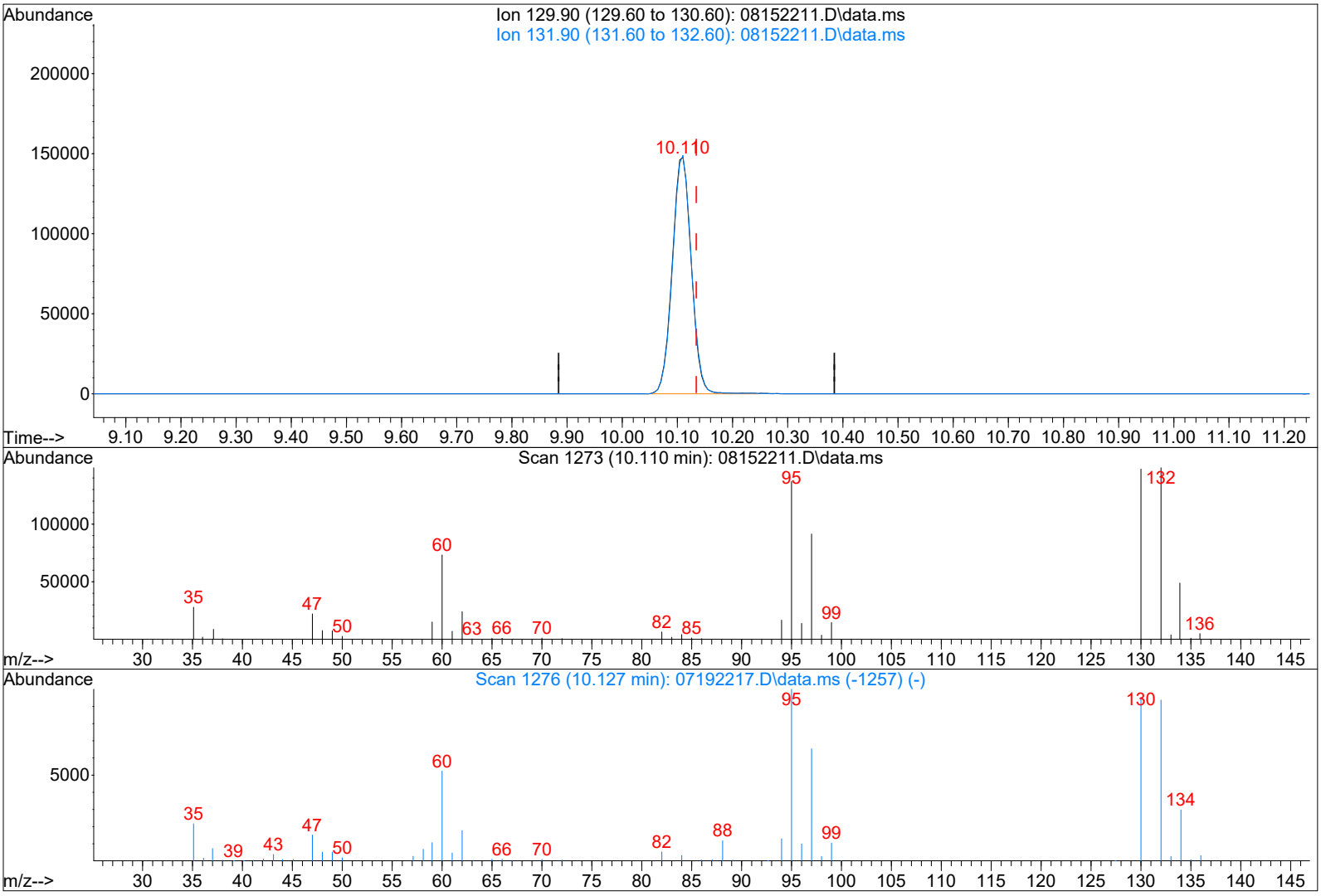
Data File : I:\MS09\DATA\2022_08\15\08152211.D Vial: 1
Acq On : 15 Aug 2022 10:54 Operator: SC
Sample : P2203433-001Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:17:26 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2022_08\15\08152211.D Vial: 1
Acq On : 15 Aug 2022 10:54 Operator: SC
Sample : P2203433-001Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:17:26 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 08152211.D\data.ms

(47) Trichloroethene (T)

10.110min (-0.025) 26.54ng

response 354916

Ion	Exp%	Act%
129.90	100	100
131.90	97.30	99.32
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122226.D Vial: 12
Acq On : 12 Aug 2022 15:45 Operator: SC
Sample : P2203433-002 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 16:08:27 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	141195	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	566124	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	111910	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.98	65	265973	11.227	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.84%			
57) Toluene-d8 (SS2)	12.40	98	599763	12.770	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%			
73) Bromofluorobenzene (SS3)	16.79	174	258406	13.619	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	3.34	85	1162	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	3.66	62	102908	7.203	ng	98
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D.		
11) Acetonitrile	4.62	41	196	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.66	58	1826	N.D.		
14) Trichlorofluoromethane	4.74	101	811	N.D.		
15) 2-Propanol (Isopropanol)	4.86	45	986	N.D.		
16) Acrylonitrile	5.10	53	2218	N.D.		
17) 1,1-Dichloroethene	5.23	96	17025	1.439	ng	92
18) 2-Methyl-2-Propanol (t...	5.23	59	1154	N.D.		
19) Methylene Chloride	5.33	84	7587	0.588	ng	93
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.56	151	1307809	95.289	ng	94
22) Carbon Disulfide	5.60	76	1065	N.D.		
23) trans-1,2-Dichloroethene	6.11	61	4918	N.D.		
24) 1,1-Dichloroethane	6.30	63	4919	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	7.05	61	1758033	94.275	ng	93
29) Diisopropyl Ether	7.33	87	827	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D. d		
31) n-Hexane	7.27	57	393	N.D.		
32) Chloroform	7.33	83	7955	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.09	62	27429	1.188	ng	98
38) 1,1,1-Trichloroethane	8.38	97	565	N.D.		
39) Isopropyl Acetate	9.28	61	18365	No Calib		
40) 1-Butanol	9.20	56	1603	No Calib		
41) Benzene	8.88	78	2134	N.D.		
42) Carbon Tetrachloride	9.04	117	2368	N.D.		
43) Cyclohexane	9.19	84	1656	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D. d		
47) Trichloroethene	10.12	130	2145449	159.758	ng	99
48) 1,4-Dioxane	10.13	88	739	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122226.D Vial: 12
Acq On : 12 Aug 2022 15:45 Operator: SC
Sample : P2203433-002 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 16:08:27 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

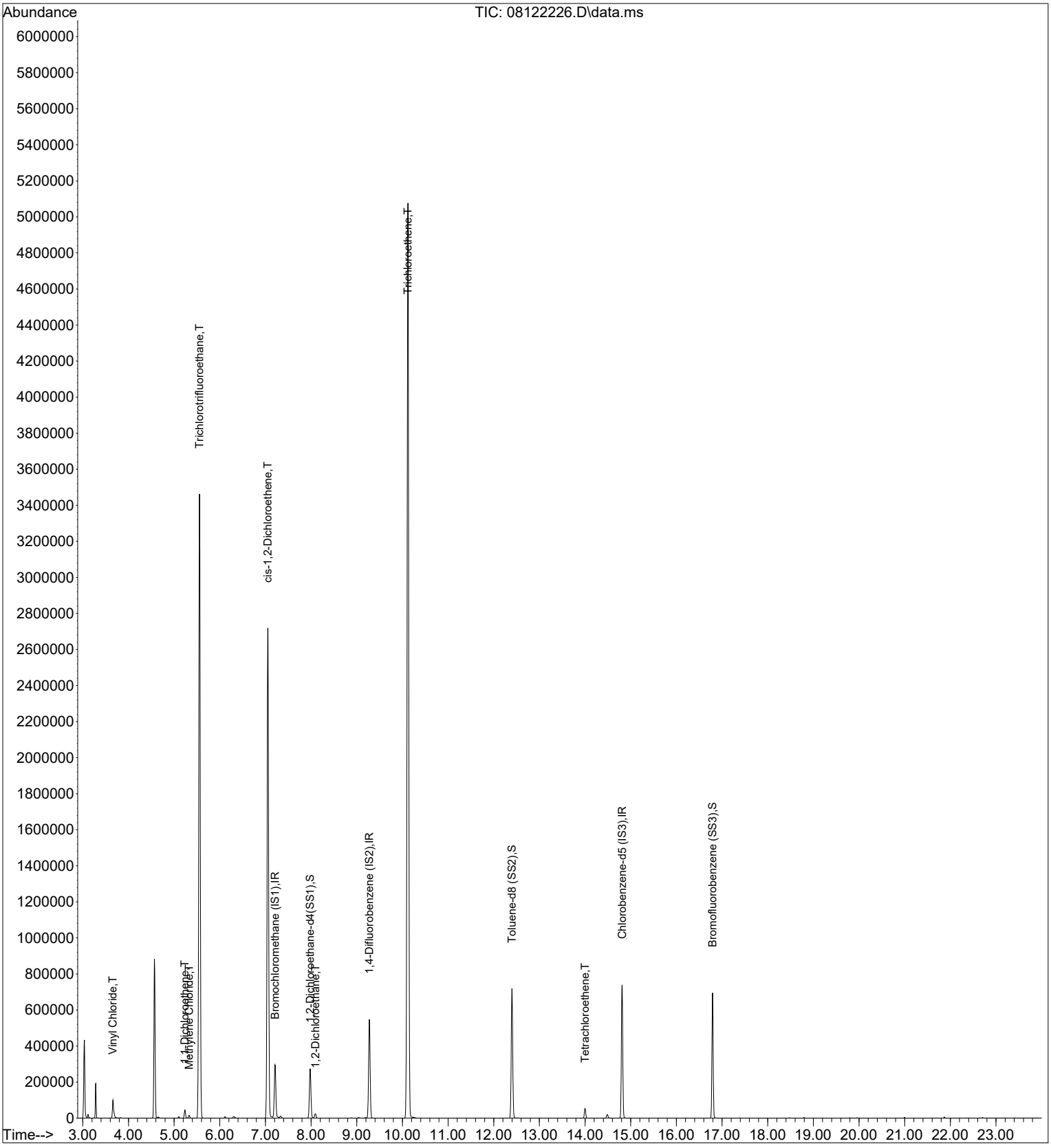
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	12.14	97	162	N.D.	
58) Toluene	12.53	91	1973	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.00	166	19250	1.174 ng	94
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.39	91	299	N.D.	
67) m- & p-Xylenes	15.60	91	917	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.08	104	459	N.D.	
70) o-Xylene	16.22	91	1255	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.79	105	295	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	16.79	105	295	No Calib #	
78) 4-Ethyltoluene	17.80	105	169	N.D.	
79) 1,3,5-Trimethylbenzene	17.80	105	169	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	18.41	105	430	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	
89) 1,2,3-Trimethylbenzene	18.41	105	430	No Calib #	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	20.93	128	161	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122226.D Vial: 12
Acq On : 12 Aug 2022 15:45 Operator: SC
Sample : P2203433-002 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 16:08:27 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122226.D Vial: 12
Acq On : 12 Aug 2022 15:45 Operator: SC
Sample : P2203433-002 (20mL) Inst : MS09
Misc : S35-07192201

8/15/22

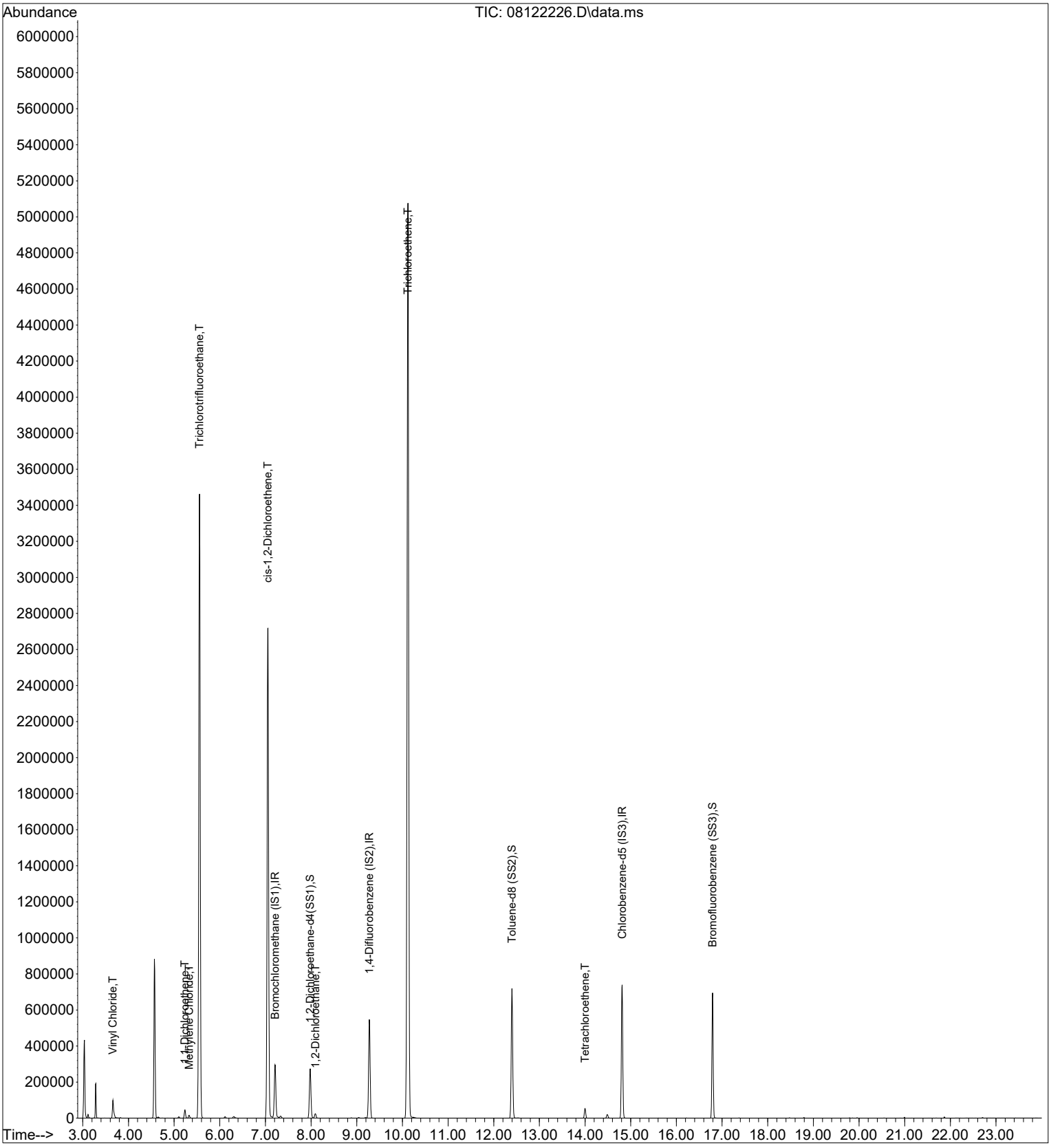
Quant Time: Aug 12 16:08:27 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

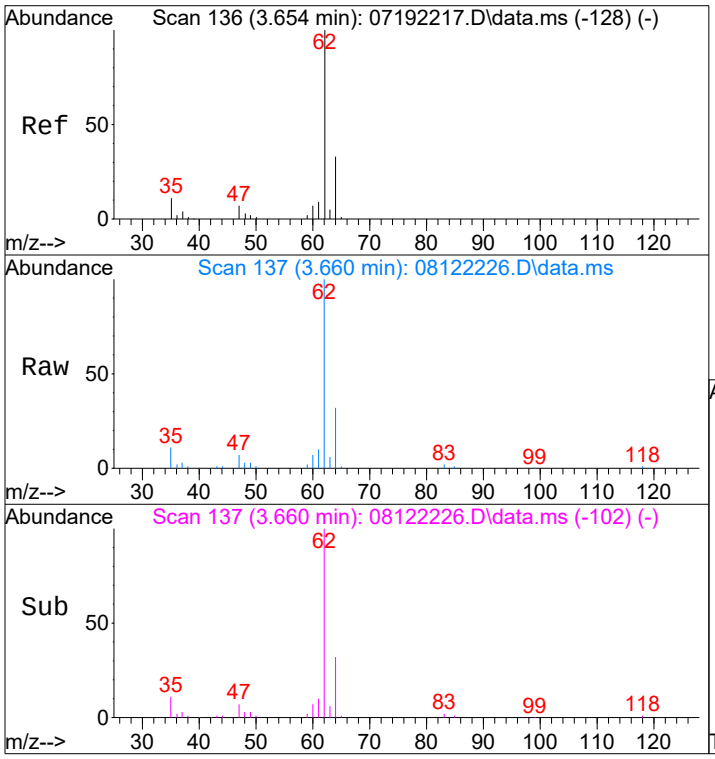
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	141195	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	566124	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	111910	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.98	65	265973	11.227	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.84%			
57) Toluene-d8 (SS2)	12.40	98	599763	12.770	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%			
73) Bromofluorobenzene (SS3)	16.79	174	258406	13.619	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%			
Target Compounds						Qvalue
6) Vinyl Chloride	3.66	62	102908	7.203	ng	98
17) 1,1-Dichloroethene	5.23	96	17025	1.439	ng	92
19) Methylene Chloride	5.33	84	7587	0.588	ng	93
21) Trichlorotrifluoroethane	5.56	151	1307809	95.289	ng	94
28) cis-1,2-Dichloroethene	7.05	61	1758033	94.275	ng	93
36) 1,2-Dichloroethane	8.09	62	27429	1.188	ng	98
47) Trichloroethene	10.12	130	2145449	159.758	ng	99
64) Tetrachloroethene	14.00	166	19250	1.174	ng	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_08\12\08122226.D Vial: 12
Acq On : 12 Aug 2022 15:45 Operator: SC
Sample : P2203433-002 (20mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 16:08:27 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

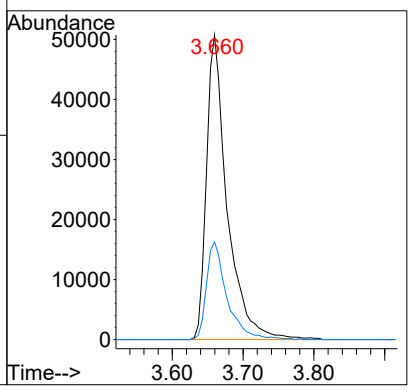


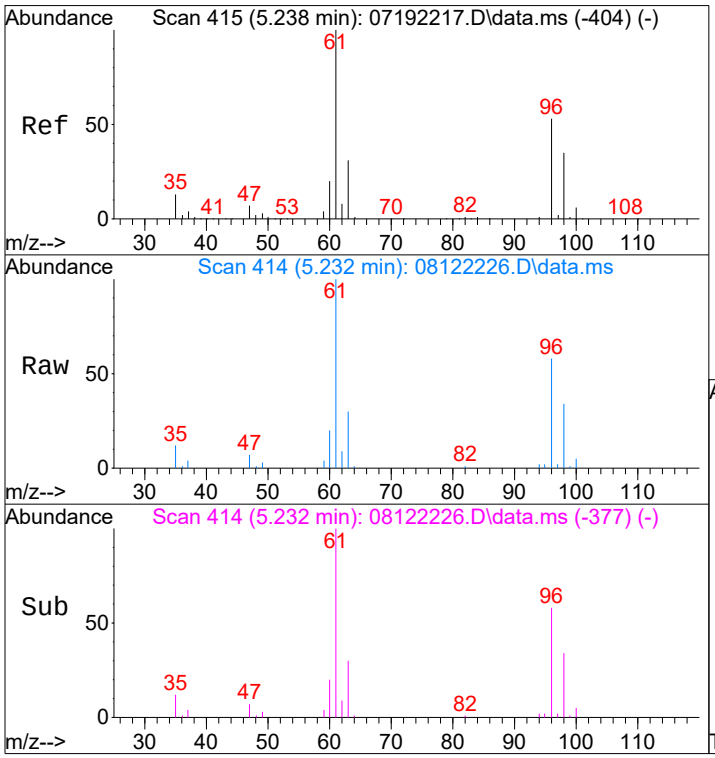


#6
Vinyl Chloride
Concen: 7.20 ng
RT: 3.66 min Scan# 137
Delta R.T. -0.049 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion: 62 Resp: 102908

Ion	Ratio	Lower	Upper
62	100		
64	31.8	12.7	52.7

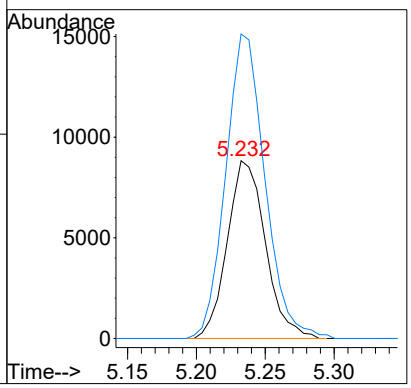


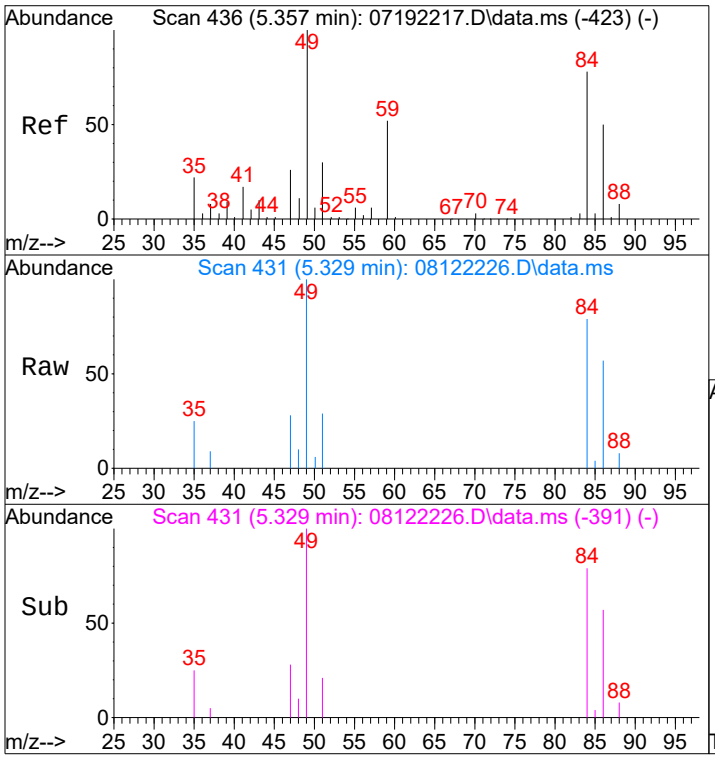


#17
1,1-Dichloroethene
Concen: 1.44 ng
RT: 5.23 min Scan# 414
Delta R.T. -0.041 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion: 96 Resp: 17025

Ion	Ratio	Lower	Upper
96	100		
61	175.9	167.4	207.4

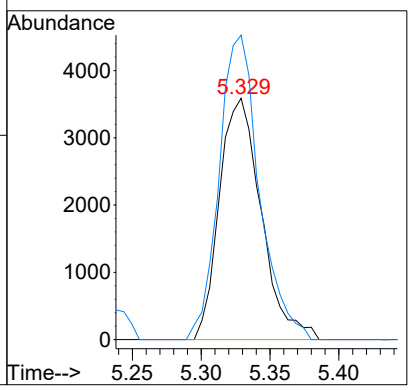


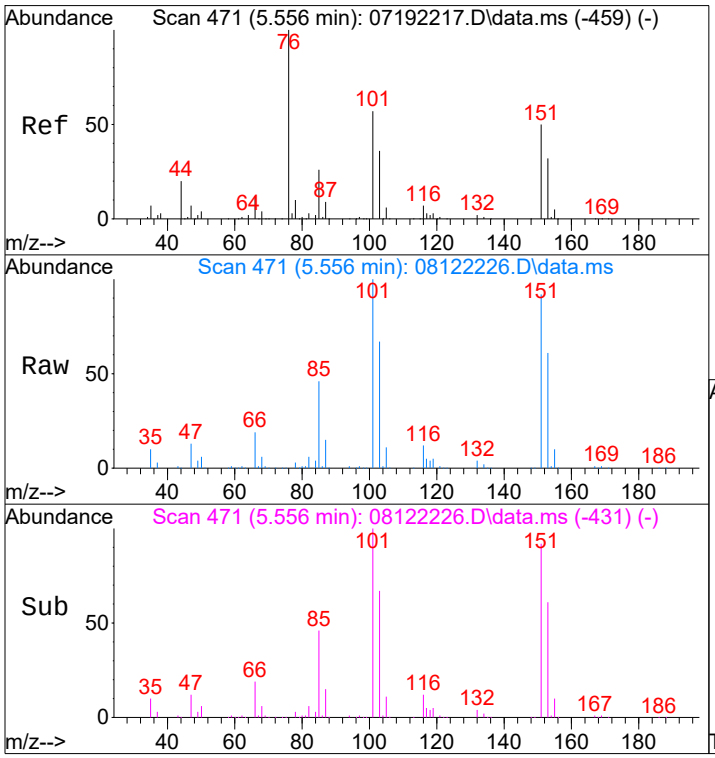


#19
Methylene Chloride
Concen: 0.59 ng
RT: 5.33 min Scan# 431
Delta R.T. -0.024 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion: 84 Resp: 7587

Ion	Ratio	Lower	Upper
84	100		
49	121.4	104.9	154.9

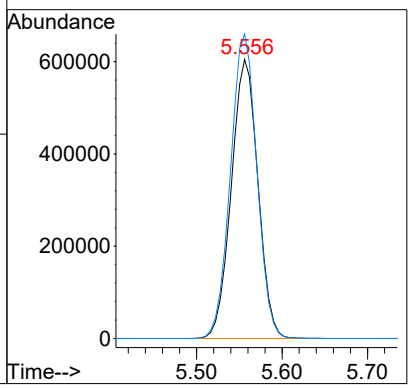


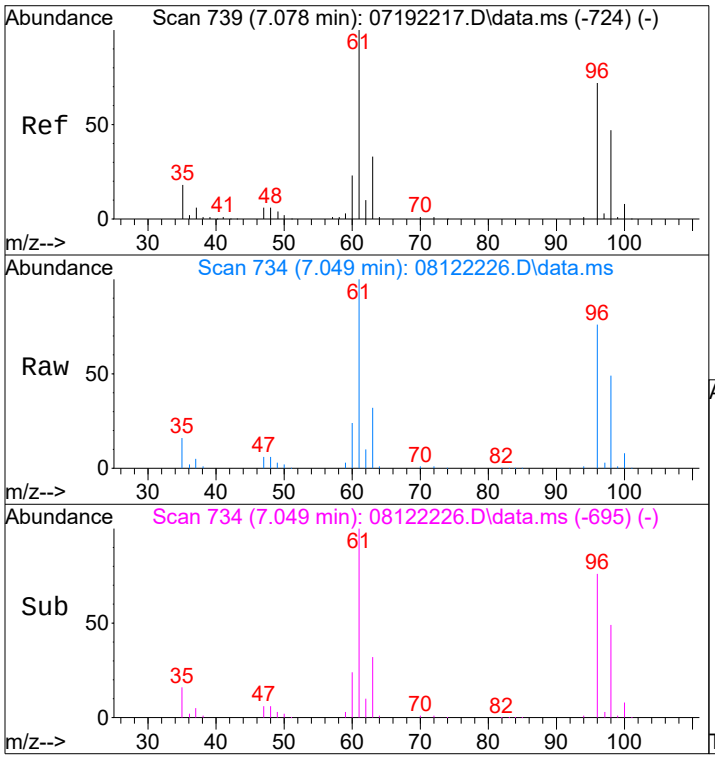


#21
Trichlorotrifluoroethane
Concen: 95.29 ng
RT: 5.56 min Scan# 471
Delta R.T. -0.025 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion:151 Resp: 1307809

Ion	Ratio	Lower	Upper
151	100		
101	108.4	94.5	134.5

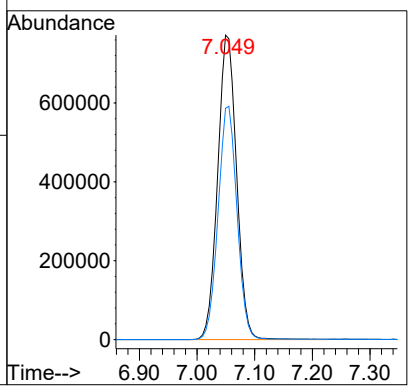


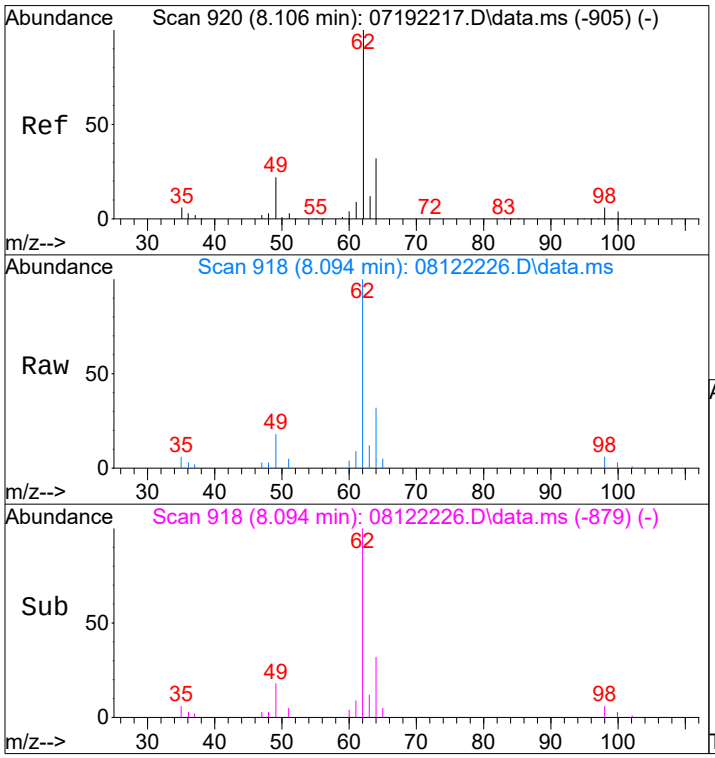


#28
cis-1,2-Dichloroethene
Concen: 94.27 ng
RT: 7.05 min Scan# 734
Delta R.T. -0.028 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion: 61 Resp: 1758033

Ion	Ratio	Lower	Upper
61	100		
96	77.0	51.1	91.1

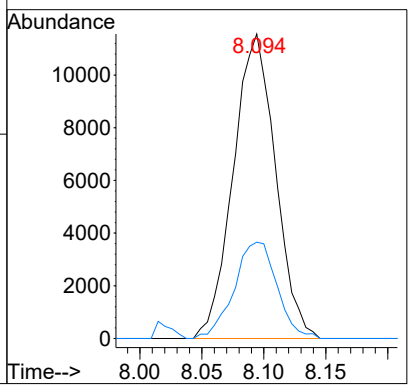


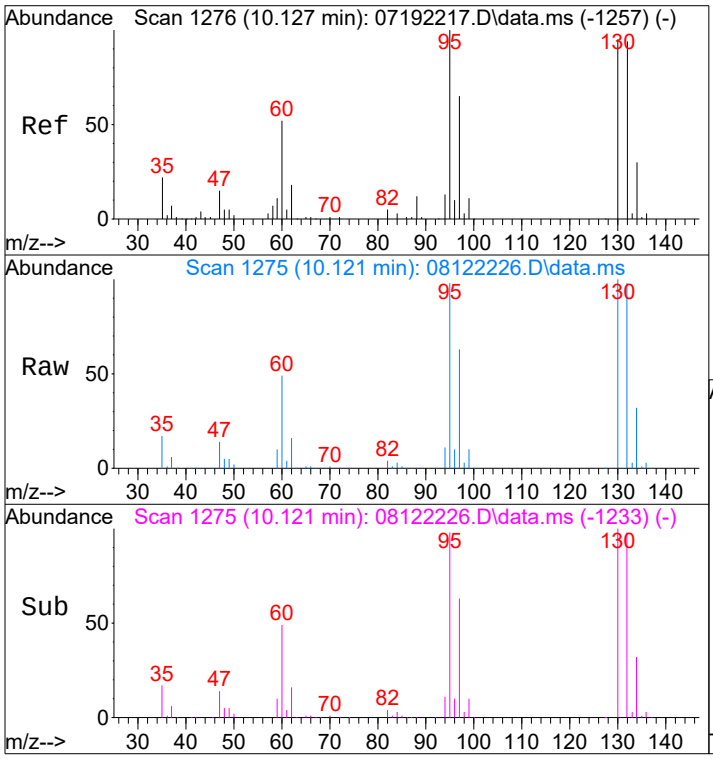


#36
1,2-Dichloroethane
Concen: 1.19 ng
RT: 8.09 min Scan# 918
Delta R.T. -0.028 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion: 62 Resp: 27429

Ion	Ratio	Lower	Upper
62	100		
64	32.1	13.0	53.0

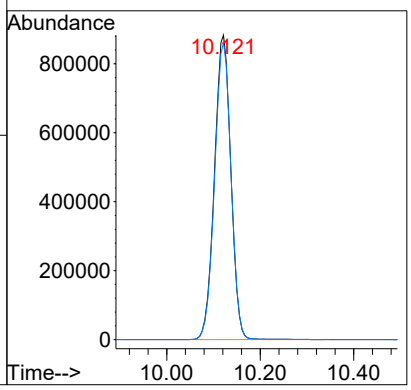


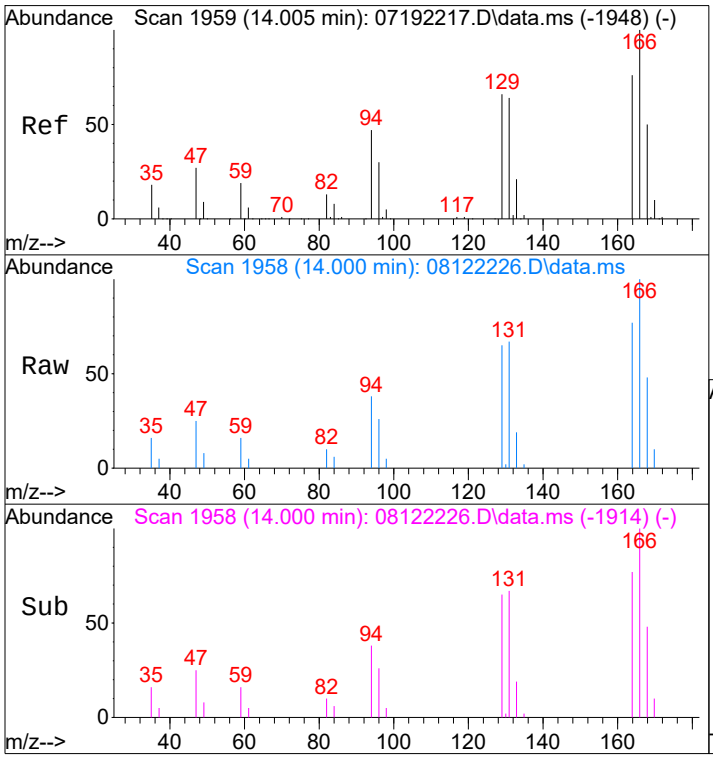


#47
Trichloroethene
Concen: 159.76 ng
RT: 10.12 min Scan# 1275
Delta R.T. -0.014 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion:130 Resp: 2145449

Ion	Ratio	Lower	Upper
130	100		
132	97.8	77.3	117.3

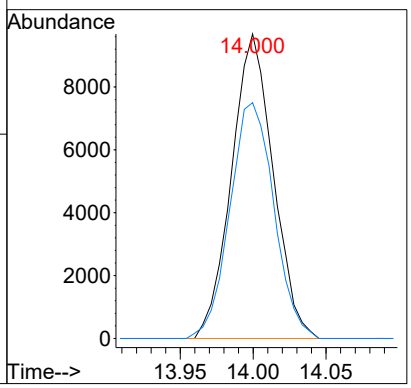




#64
Tetrachloroethene
Concen: 1.17 ng
RT: 14.00 min Scan# 1958
Delta R.T. -0.000 min
Lab File: 08122226.D
Acq: 12 Aug 2022 15:45

Tgt Ion:166 Resp: 19250

Ion	Ratio	Lower	Upper
166	100		
164	81.9	56.7	96.7



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152212.D Vial: 1
Acq On : 15 Aug 2022 11:26 Operator: SC
Sample : P2203433-002Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:47:36 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	137834	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.27	114	559010	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	113466	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.97	65	269258	11.643	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.12%			
57) Toluene-d8 (SS2)	12.40	98	590313	12.396	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%			
73) Bromofluorobenzene (SS3)	16.79	174	258432	13.433	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.44%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	3.30	85	3347	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	3.68	62	17867	1.281	ng	98
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.65	58	782	N.D.		
14) Trichlorofluoromethane	4.57	101	550	N.D.		
15) 2-Propanol (Isopropanol)	4.86	45	636	N.D.		
16) Acrylonitrile	5.10	53	268	N.D.		
17) 1,1-Dichloroethene	5.24	96	2895	N.D.		
18) 2-Methyl-2-Propanol (t...	5.24	59	52	N.D.		
19) Methylene Chloride	5.33	84	1225	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.55	151	222091	16.576	ng	91
22) Carbon Disulfide	0.00	76	0	N.D.		
23) trans-1,2-Dichloroethene	6.11	61	601	N.D.		
24) 1,1-Dichloroethane	6.29	63	848	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	7.04	61	285361	15.676	ng	93
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.26	61	1375	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.33	83	1430	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.09	62	4671	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	18934	No Calib		
40) 1-Butanol	9.27	56	12114	No Calib	#	
41) Benzene	8.87	78	412	N.D.		
42) Carbon Tetrachloride	9.04	117	251	N.D.		
43) Cyclohexane	9.26	84	295	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.11	83	3972	N.D.		
47) Trichloroethene	10.11	130	353309	26.643	ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152212.D Vial: 1
Acq On : 15 Aug 2022 11:26 Operator: SC
Sample : P2203433-002Dil (5.0mL) Inst : MS09
Misc : S35-07192201

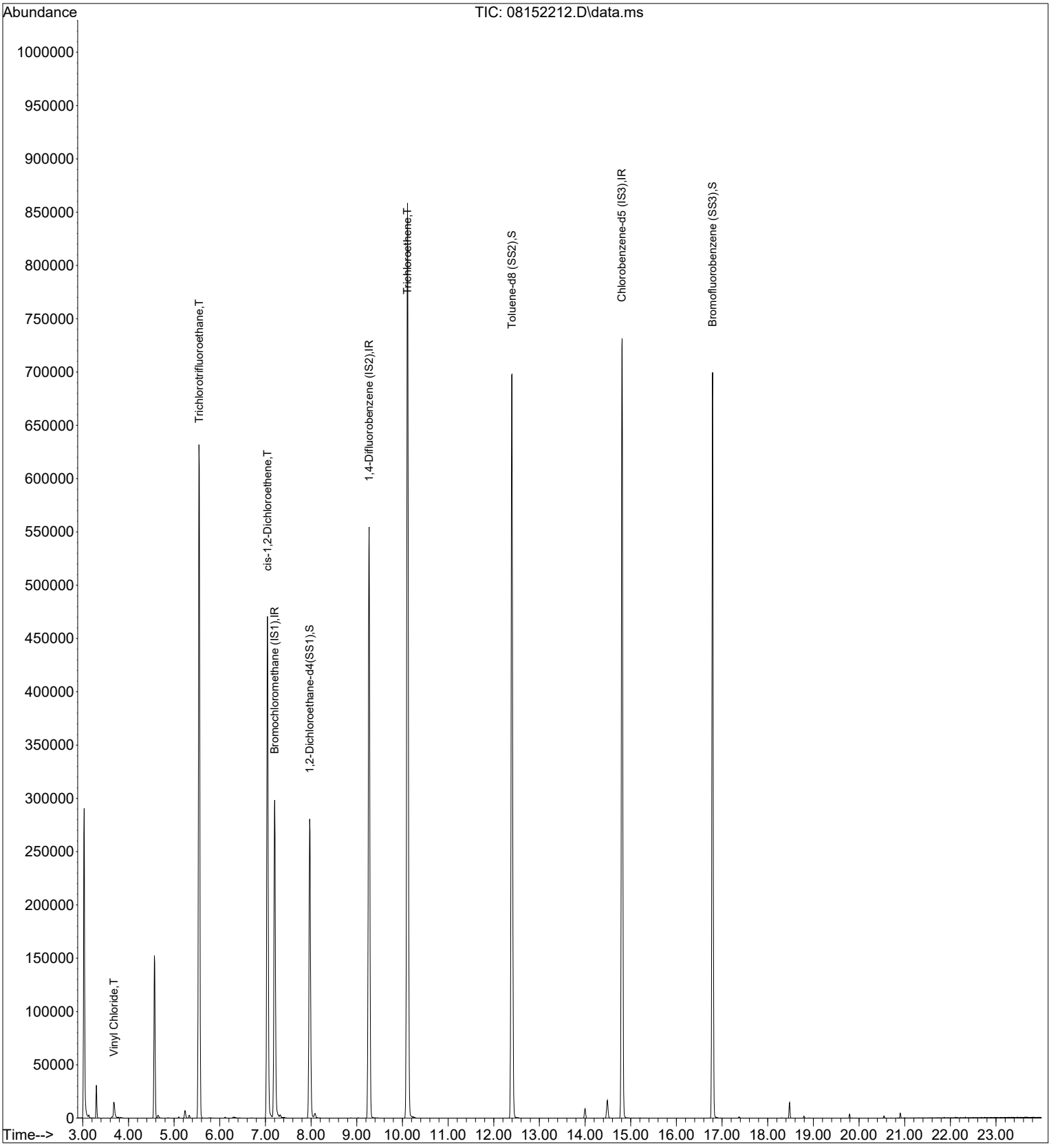
Quant Time: Aug 15 11:47:36 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.52	91	269	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	14.01	166	3352	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	0.00	91	0	N.D.	
67) m- & p-Xylenes	0.00	91	0	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	0.00	91	0	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.79	105	186	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	0.00	91	0	N.D.	
77) 3-Ethyltoluene	16.79	105	186	No Calib	#
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D.	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	0.00	105	0	N.D.	
88) 4-Isopropyltoluene (p-...	18.91	119	275	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.48	119	292	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

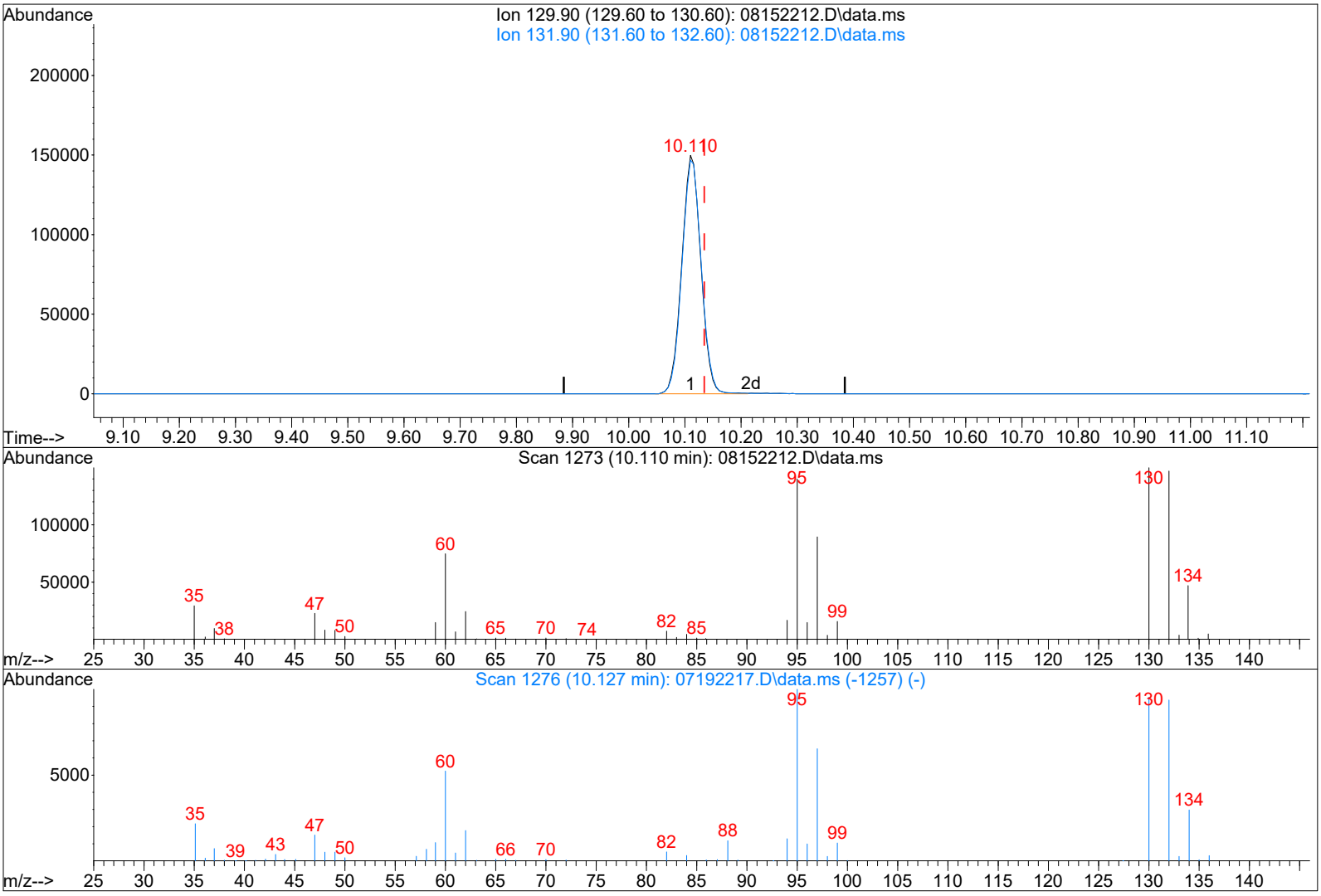
Data File : I:\MS09\DATA\2022_08\15\08152212.D Vial: 1
Acq On : 15 Aug 2022 11:26 Operator: SC
Sample : P2203433-002Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:47:36 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2022_08\15\08152212.D Vial: 1
Acq On : 15 Aug 2022 11:26 Operator: SC
Sample : P2203433-002Dil (5.0mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 11:47:36 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 08152212.D\data.ms

(47) Trichloroethene (T)

10.110min (-0.025) 26.64ng

response 353309

Ion	Exp%	Act%
129.90	100	100
131.90	97.30	99.41
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122227.D Vial: 1
Acq On : 12 Aug 2022 17:05 Operator: SC
Sample : P2203433-003 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 17:28:00 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	149258	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.27	114	599540	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	118476	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	282435	11.278	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.24%				
57) Toluene-d8 (SS2)	12.39	98	636312	12.797	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.40%				
73) Bromofluorobenzene (SS3)	16.79	174	277368	13.808	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.48%				
Target Compounds							Qvalue
2) Propene	3.24	42	35513	2.483	ng	#	61
3) Dichlorodifluoromethan...	3.33	85	101039	2.863	ng		99
4) Chloromethane	3.48	50	1957	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	1296	N.D.			
6) Vinyl Chloride	3.66	62	1801	N.D.			
7) 1,3-Butadiene	3.80	54	698	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	4.12	64	239	N.D.			
10) Ethanol	4.30	45	233319	24.706	ng		99
11) Acetonitrile	4.41	41	8520	N.D.			
12) Acrolein	4.50	56	2574	N.D.			
13) Acetone	4.59	58	135287	15.319	ng	#	63
14) Trichlorofluoromethane	4.72	101	323824	9.101	ng		97
15) 2-Propanol (Isopropanol)	4.85	45	1380187	38.851	ng		97
16) Acrylonitrile	5.01	53	3853	N.D.			
17) 1,1-Dichloroethene	5.22	96	597	N.D.			
18) 2-Methyl-2-Propanol (t...	5.33	59	4498	N.D.			
19) Methylene Chloride	5.32	84	8995	0.659	ng		93
20) 3-Chloro-1-propene (Al...	5.43	41	470	N.D.			
21) Trichlorotrifluoroethane	5.54	151	23020	1.587	ng		92
22) Carbon Disulfide	5.57	76	14303	N.D.			
23) trans-1,2-Dichloroethene	6.11	61	720	N.D.			
24) 1,1-Dichloroethane	6.29	63	689	N.D.			
25) Methyl tert-Butyl Ether	6.35	73	579	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.63	72	37627	4.727	ng		98
28) cis-1,2-Dichloroethene	7.06	61	26169	1.328	ng		93
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	7.25	61	118508	23.299	ng		94
31) n-Hexane	7.27	57	484989	24.697	ng		99
32) Chloroform	7.34	83	2015	N.D.			
34) Tetrahydrofuran (THF)	7.72	72	52679	6.835	ng		97
35) Ethyl tert-Butyl Ether	7.80	87	455	N.D.			
36) 1,2-Dichloroethane	8.08	62	4520	N.D.			
38) 1,1,1-Trichloroethane	8.36	97	717	N.D.			
39) Isopropyl Acetate	9.27	61	19058	No Calib			
40) 1-Butanol	9.18	56	17600	No Calib			
41) Benzene	8.86	78	38101	0.795	ng		99
42) Carbon Tetrachloride	9.04	117	5947	N.D.			
43) Cyclohexane	9.18	84	17164	0.977	ng		92
44) tert-Amyl Methyl Ether	9.59	73	1302	N.D.			
45) 1,2-Dichloropropane	9.81	63	792	N.D.			
46) Bromodichloromethane	10.06	83	1660	N.D.			
47) Trichloroethene	10.12	130	32991	2.320	ng		98
48) 1,4-Dioxane	10.11	88	181	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	10.37	100	498	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122227.D Vial: 1
Acq On : 12 Aug 2022 17:05 Operator: SC
Sample : P2203433-003 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 17:28:00 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

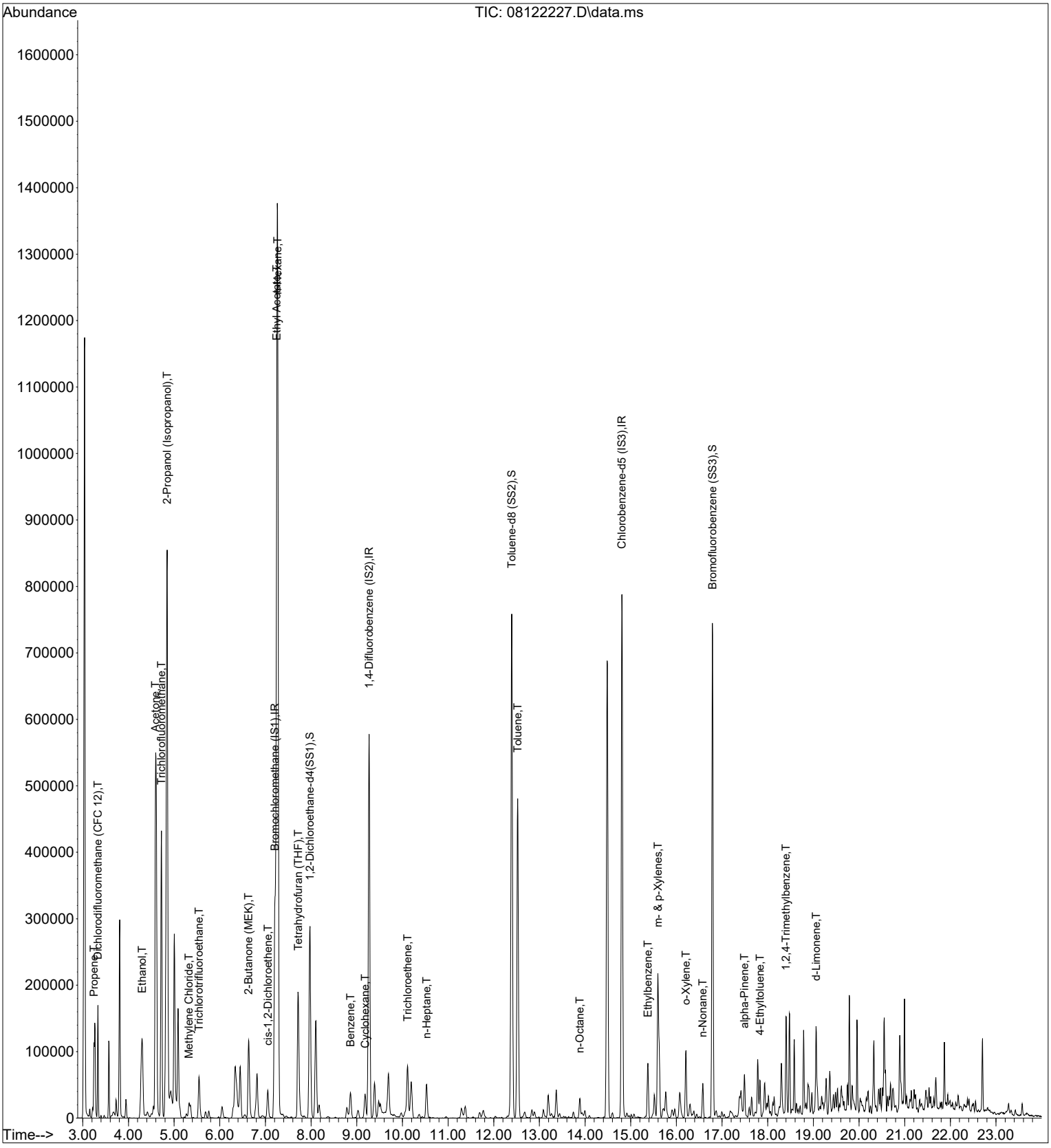
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	13517	1.234	ng		99
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
53) 4-Methyl-2-pentanone	11.29	58	4253	N.D.			
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
55) 1,1,2-Trichloroethane	12.15	97	110	N.D.			
58) Toluene	12.52	91	420076	8.396	ng		99
59) 2-Hexanone	12.89	43	6652	N.D.			
60) Dibromochloromethane	13.05	129	444	N.D.			
61) 1,2-Dibromoethane	13.36	107	114	N.D.			
62) n-Butyl Acetate	13.74	43	9154	N.D.			
63) n-Octane	13.89	57	5005	0.569	ng		93
64) Tetrachloroethene	13.99	166	3857	N.D.			
65) Chlorobenzene	14.86	112	1656	N.D.			
66) Ethylbenzene	15.37	91	68290	1.156	ng		97
67) m- & p-Xylenes	15.60	91	197718	4.029	ng		95
68) Bromoform	15.64	173	669	N.D.			
69) Styrene	16.07	104	14983	N.D.			
70) o-Xylene	16.21	91	68922	1.451	ng		97
71) n-Nonane	16.58	43	20153	0.849	ng		95
72) 1,1,2,2-Tetrachloroethane	16.18	83	563	N.D.			
74) Cumene	16.99	105	7283	N.D.			
75) alpha-Pinene	17.49	93	25138	0.873	ng		99
76) n-Propylbenzene	17.64	91	23271	N.D.			
77) 3-Ethyltoluene	16.99	105	7283	No Calib			
78) 4-Ethyltoluene	17.83	105	27146	0.479	ng		95
79) 1,3,5-Trimethylbenzene	17.93	105	19735	N.D.			
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	3228	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.40	105	75868	1.488	ng		93
83) n-Decane	16.58	58	662	No Calib		#	
84) Benzyl Chloride	18.54	91	1491	N.D.			
85) 1,3-Dichlorobenzene	18.55	146	896	N.D.			
86) 1,4-Dichlorobenzene	18.63	146	5266	N.D.			
87) sec-Butylbenzene	18.71	105	5255	N.D.			
88) 4-Isopropyltoluene (p-...	18.90	119	17936	N.D.			
89) 1,2,3-Trimethylbenzene	18.40	105	75868	No Calib		#	
90) 1,2-Dichlorobenzene	19.01	146	1406	N.D.			
91) d-Limonene	19.06	68	22048	1.336	ng	#	76
92) 1,2-Dibromo-3-Chloropr...	19.49	157	636	N.D.			
93) n-Undecane	17.95	58	1088	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.82	180	1330	N.D.			
95) Naphthalene	20.92	128	14701	N.D.			
96) n-Dodecane	18.88	58	396	No Calib		#	
97) Hexachlorobutadiene	21.28	225	572	N.D.			
98) Cyclohexanone	15.60	55	2243	No Calib		#	
99) tert-Butylbenzene	18.41	119	10886	N.D.			
100) n-Butylbenzene	19.36	91	14762	N.D.			
101) 1,1,1,2-Tetrachloroethane	14.84	131	429	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122227.D Vial: 1
Acq On : 12 Aug 2022 17:05 Operator: SC
Sample : P2203433-003 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 17:28:00 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122227.D Vial: 1
Acq On : 12 Aug 2022 17:05 Operator: SC
Sample : P2203433-003 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 17:28:00 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

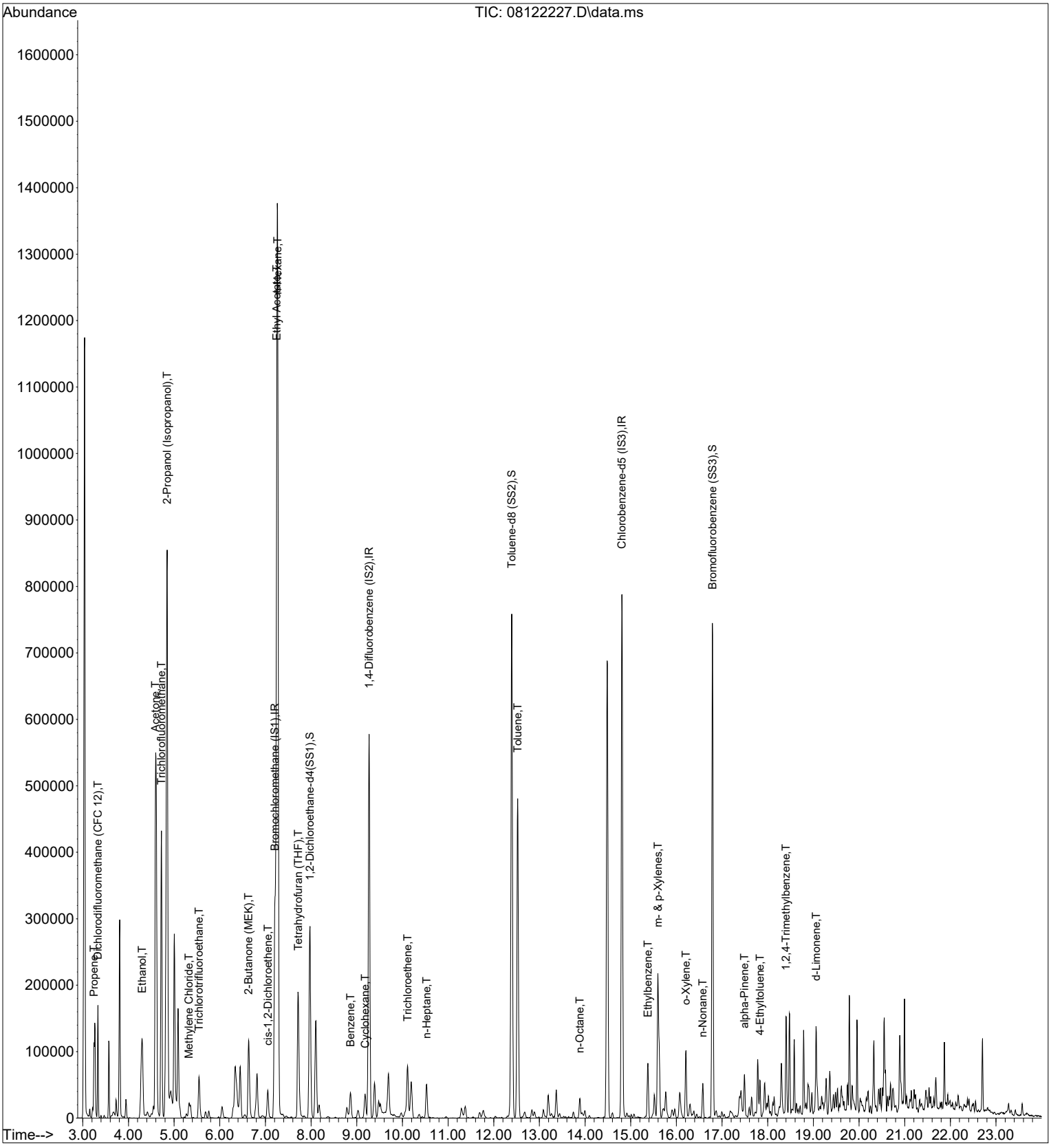
8/15/22

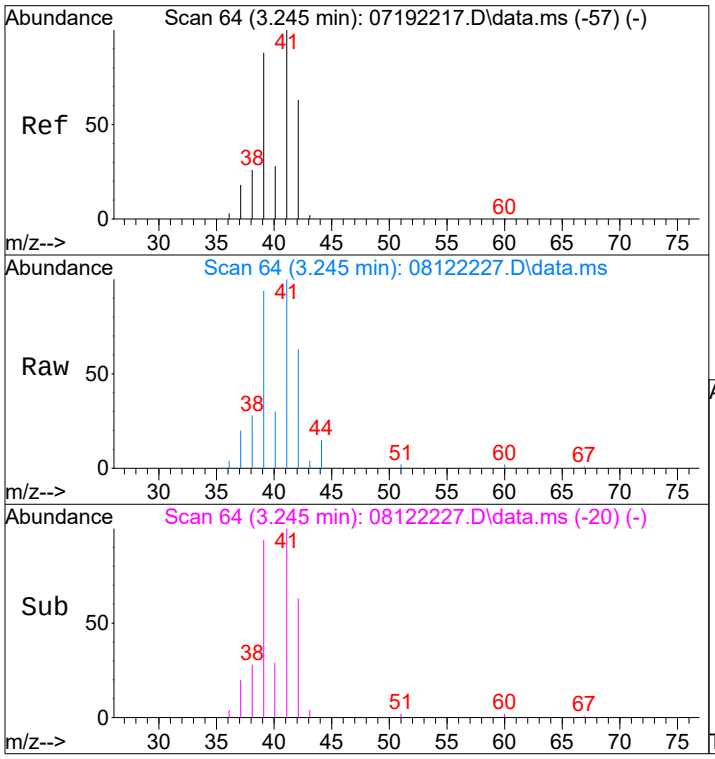
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	149258	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.27	114	599540	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	118476	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	282435	11.278	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.24%				
57) Toluene-d8 (SS2)	12.39	98	636312	12.797	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.40%				
73) Bromofluorobenzene (SS3)	16.79	174	277368	13.808	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.48%				
Target Compounds							Qvalue
2) Propene	3.24	42	35513	2.483	ng	#	61
3) Dichlorodifluoromethan...	3.33	85	101039	2.863	ng		99
10) Ethanol	4.30	45	233319	24.706	ng		99
13) Acetone	4.59	58	135287	15.319	ng	#	63
14) Trichlorofluoromethane	4.72	101	323824	9.101	ng		97
15) 2-Propanol (Isopropanol)	4.85	45	1380187	38.851	ng		97
19) Methylene Chloride	5.32	84	8995	0.659	ng		93
21) Trichlorotrifluoroethane	5.54	151	23020	1.587	ng		92
27) 2-Butanone (MEK)	6.63	72	37627	4.727	ng		98
28) cis-1,2-Dichloroethene	7.06	61	26169	1.328	ng		93
30) Ethyl Acetate	7.25	61	118508	23.299	ng		94
31) n-Hexane	7.27	57	484989	24.697	ng		99
34) Tetrahydrofuran (THF)	7.72	72	52679	6.835	ng		97
41) Benzene	8.86	78	38101	0.795	ng		99
43) Cyclohexane	9.18	84	17164	0.977	ng		92
47) Trichloroethene	10.12	130	32991	2.320	ng		98
51) n-Heptane	10.53	71	13517	1.234	ng		99
58) Toluene	12.52	91	420076	8.396	ng		99
63) n-Octane	13.89	57	5005	0.569	ng		93
66) Ethylbenzene	15.37	91	68290	1.156	ng		97
67) m- & p-Xylenes	15.60	91	197718	4.029	ng		95
70) o-Xylene	16.21	91	68922	1.451	ng		97
71) n-Nonane	16.58	43	20153	0.849	ng		95
75) alpha-Pinene	17.49	93	25138	0.873	ng		99
78) 4-Ethyltoluene	17.83	105	27146	0.479	ng		95
82) 1,2,4-Trimethylbenzene	18.40	105	75868	1.488	ng		93
91) d-Limonene	19.06	68	22048	1.336	ng	#	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_08\12\08122227.D Vial: 1
Acq On : 12 Aug 2022 17:05 Operator: SC
Sample : P2203433-003 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 17:28:00 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

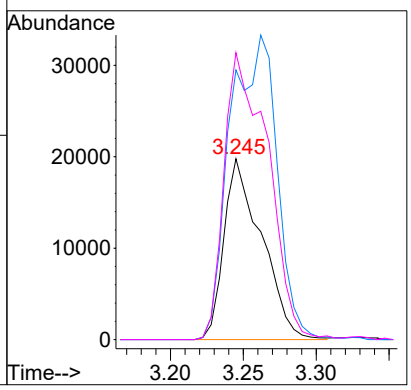


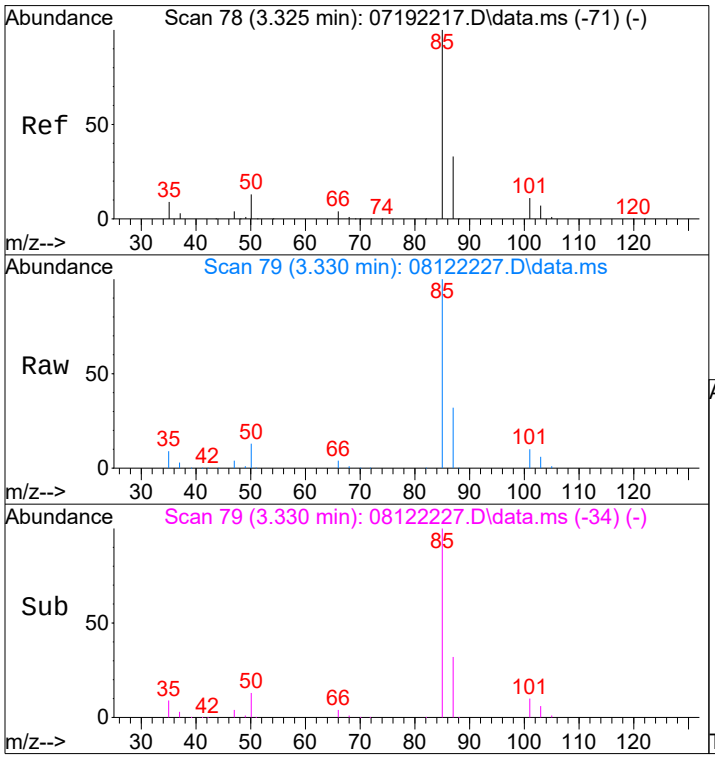


#2
Propene
Concen: 2.48 ng
RT: 3.24 min Scan# 64
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 42 Resp: 35513

Ion	Ratio	Lower	Upper
42	100		
39	209.5	118.8	158.8#
41	184.4	136.1	176.1#

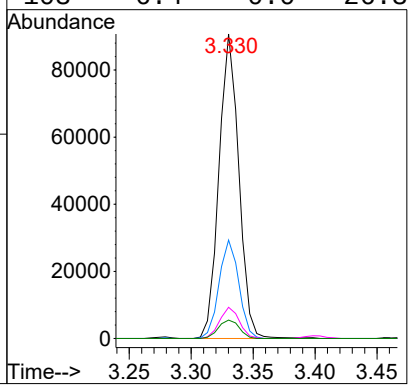


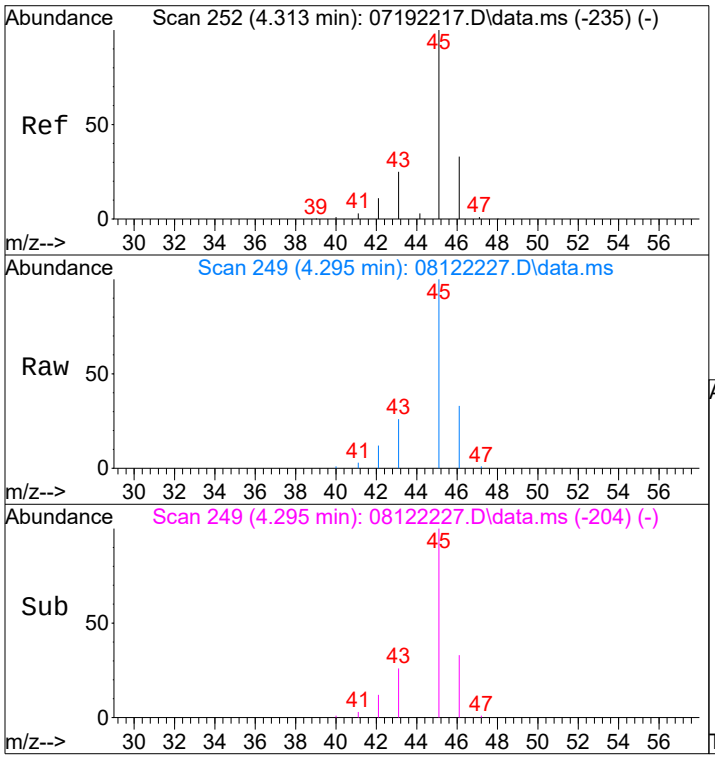


#3
Dichlorodifluoromethane (CFC 12)
Concen: 2.86 ng
RT: 3.33 min Scan# 79
Delta R.T. 0.006 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 85 Resp: 101039

Ion	Ratio	Lower	Upper
85	100		
87	32.1	13.1	53.1
101	10.2	0.0	30.1
103	6.4	0.0	26.3

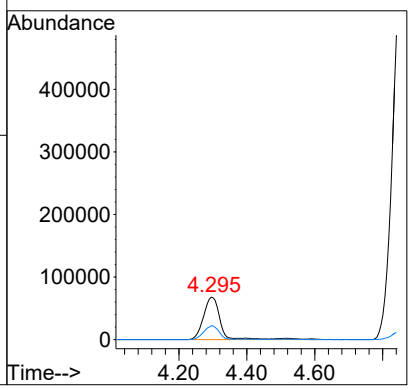


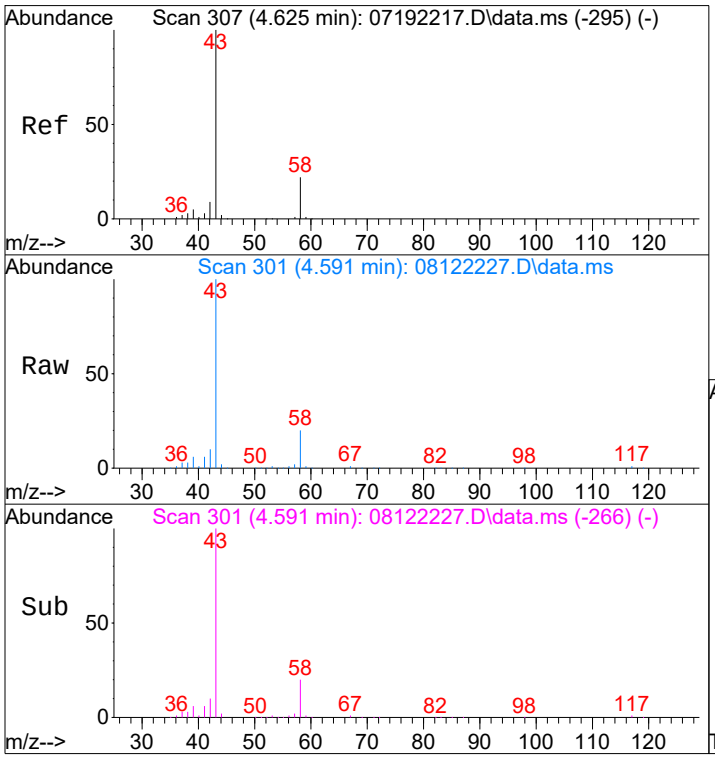


#10
Ethanol
Concen: 24.71 ng
RT: 4.30 min Scan# 249
Delta R.T. 0.005 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 45 Resp: 233319

Ion	Ratio	Lower	Upper
45	100		
46	32.1	12.6	52.6

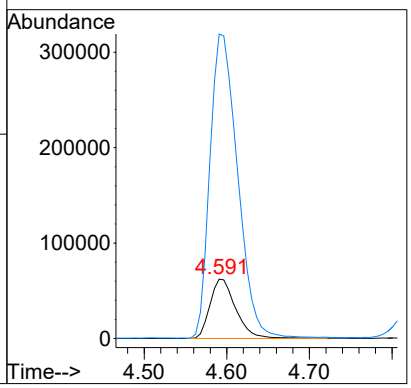


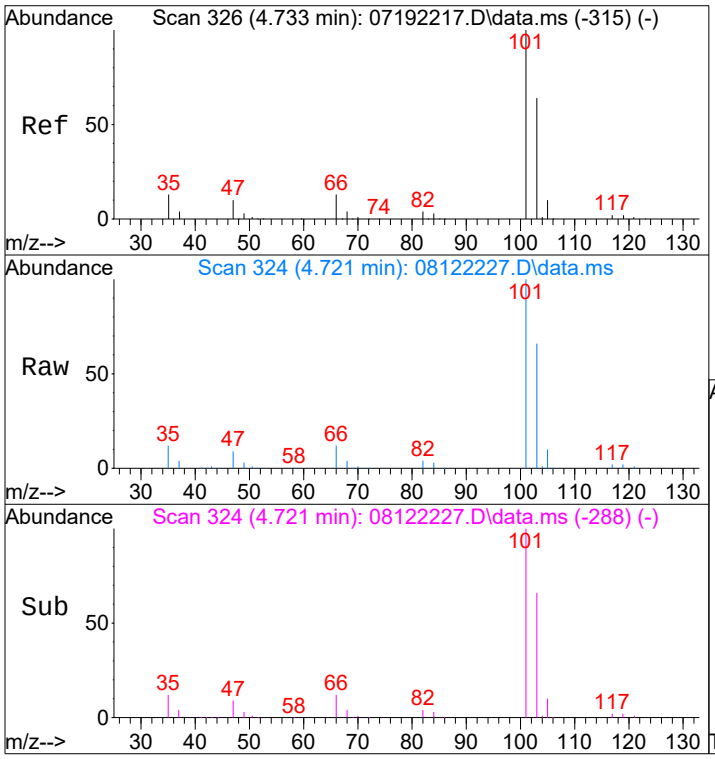


#13
Acetone
Concen: 15.32 ng
RT: 4.59 min Scan# 301
Delta R.T. -0.048 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 58 Resp: 135287

Ion	Ratio	Lower	Upper
58	100		
43	550.0	424.6	484.6#

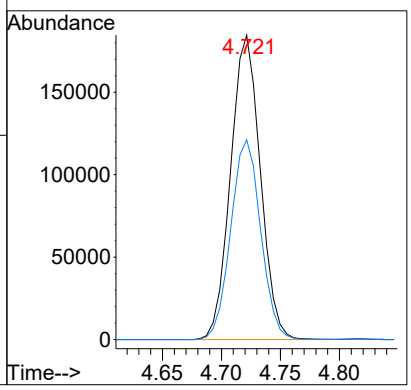


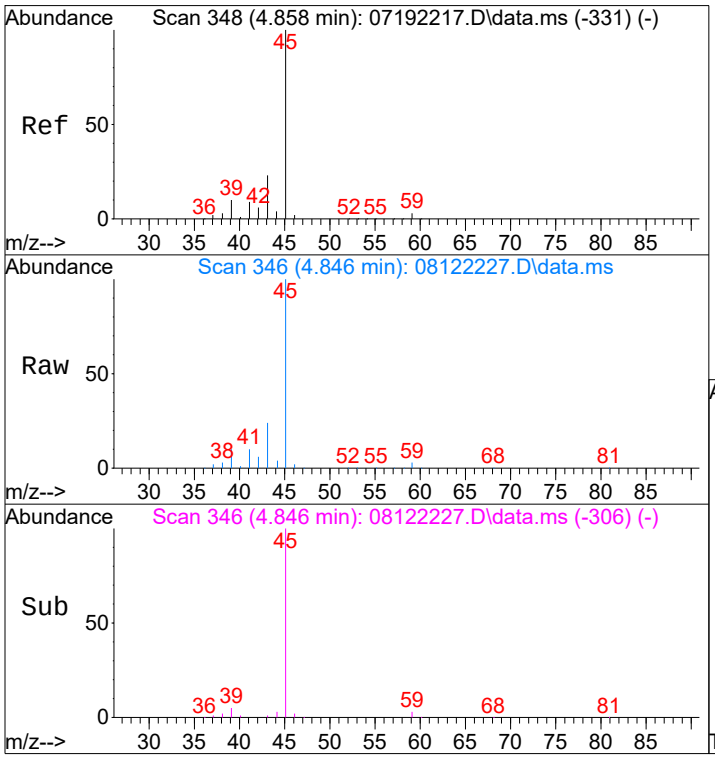


#14
Trichlorofluoromethane
Concen: 9.10 ng
RT: 4.72 min Scan# 324
Delta R.T. -0.043 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion:101 Resp: 323824

Ion	Ratio	Lower	Upper
101	100		
103	66.1	43.7	83.7

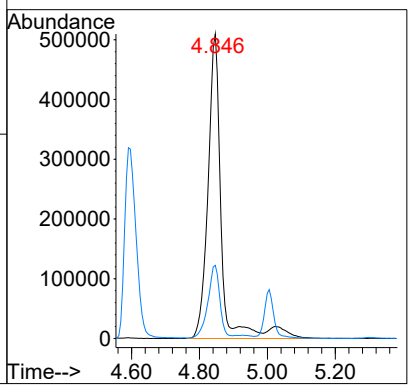


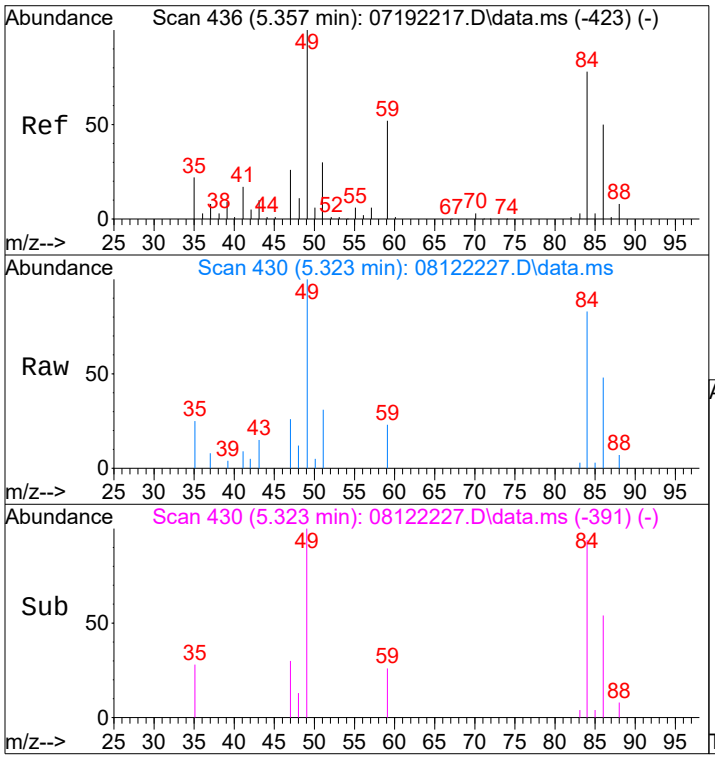


#15
2-Propanol (Isopropanol)
Concen: 38.85 ng
RT: 4.85 min Scan# 346
Delta R.T. -0.021 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 45 Resp: 1380187

Ion	Ratio	Lower	Upper
45	100		
43	22.6	4.2	44.2

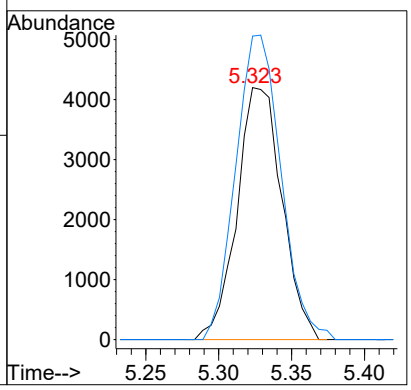


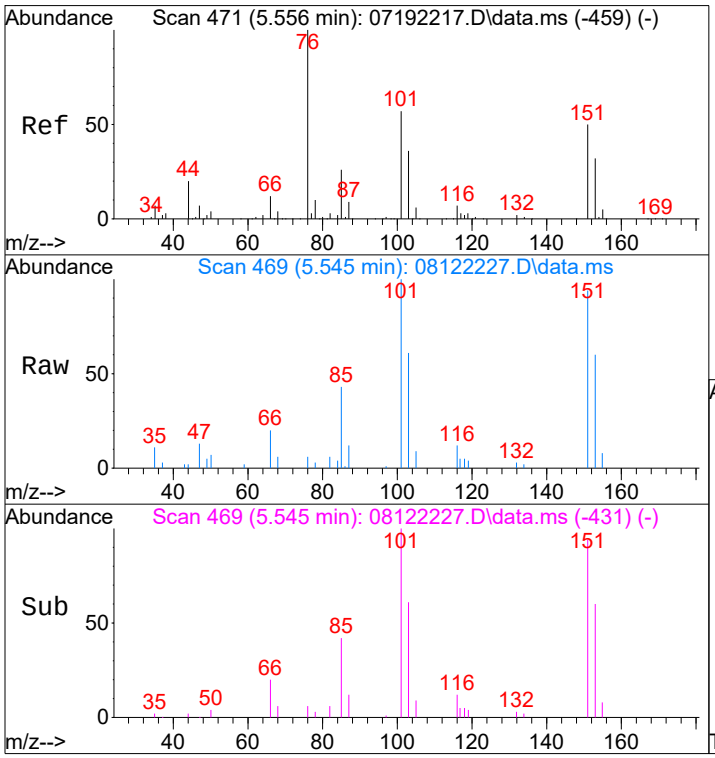


#19
Methylene Chloride
Concen: 0.66 ng
RT: 5.32 min Scan# 430
Delta R.T. -0.030 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 84 Resp: 8995

Ion	Ratio	Lower	Upper
84	100		
49	122.0	104.9	154.9

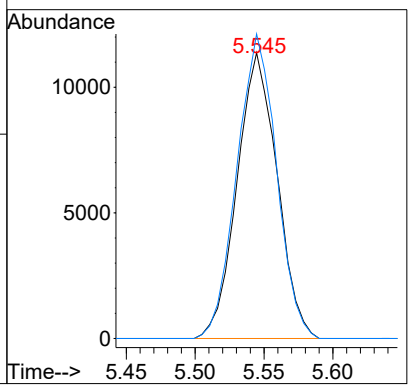


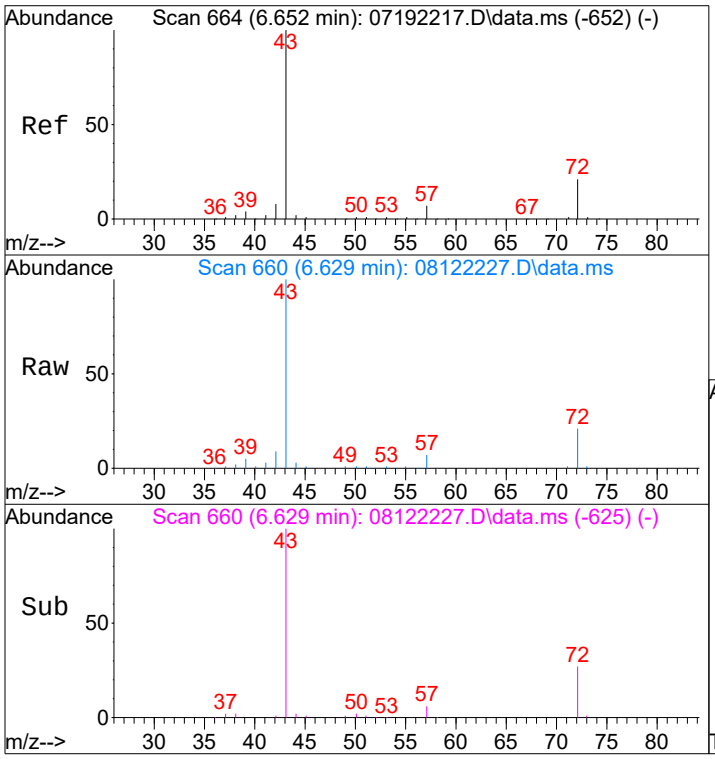


#21
Trichlorotrifluoroethane
Concen: 1.59 ng
RT: 5.54 min Scan# 469
Delta R.T. -0.037 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion:151 Resp: 23020

Ion	Ratio	Lower	Upper
151	100		
101	105.5	94.5	134.5

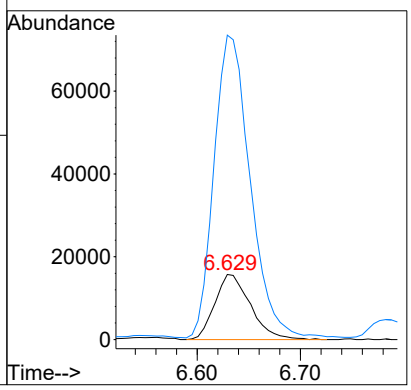


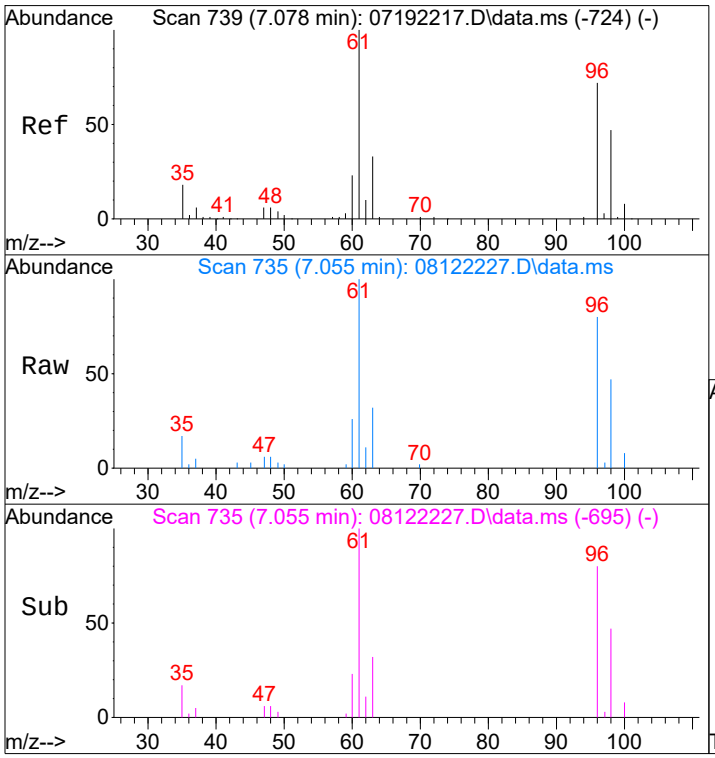


#27
2-Butanone (MEK)
Concen: 4.73 ng
RT: 6.63 min Scan# 660
Delta R.T. -0.054 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 72 Resp: 37627

Ion	Ratio	Lower	Upper
72	100		
43	470.2	454.7	494.7

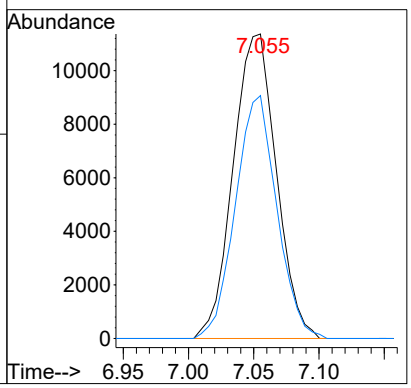


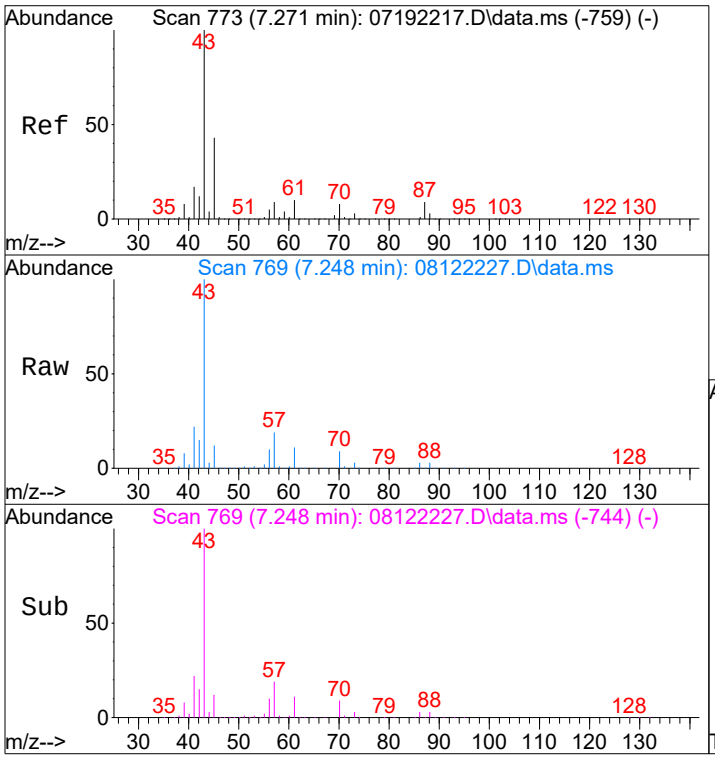


#28
cis-1,2-Dichloroethene
Concen: 1.33 ng
RT: 7.06 min Scan# 735
Delta R.T. -0.022 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 61 Resp: 26169

Ion	Ratio	Lower	Upper
61	100		
96	76.5	51.1	91.1

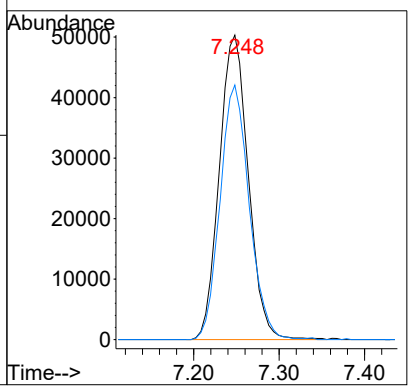


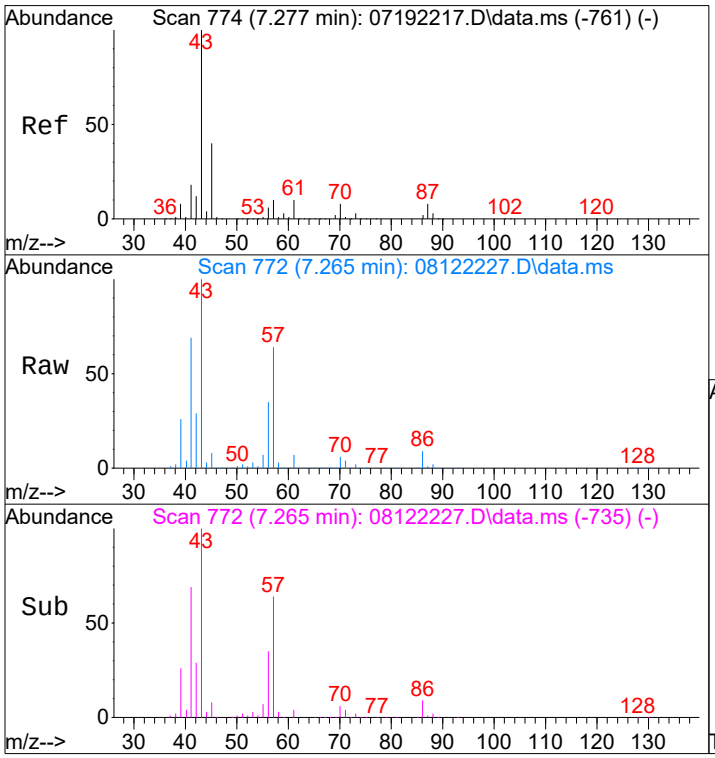


#30
Ethyl Acetate
Concen: 23.30 ng
RT: 7.25 min Scan# 769
Delta R.T. -0.058 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 61 Resp: 118508

Ion	Ratio	Lower	Upper
61	100		
70	84.4	59.3	99.3

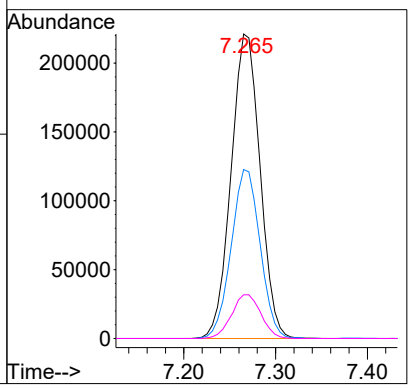


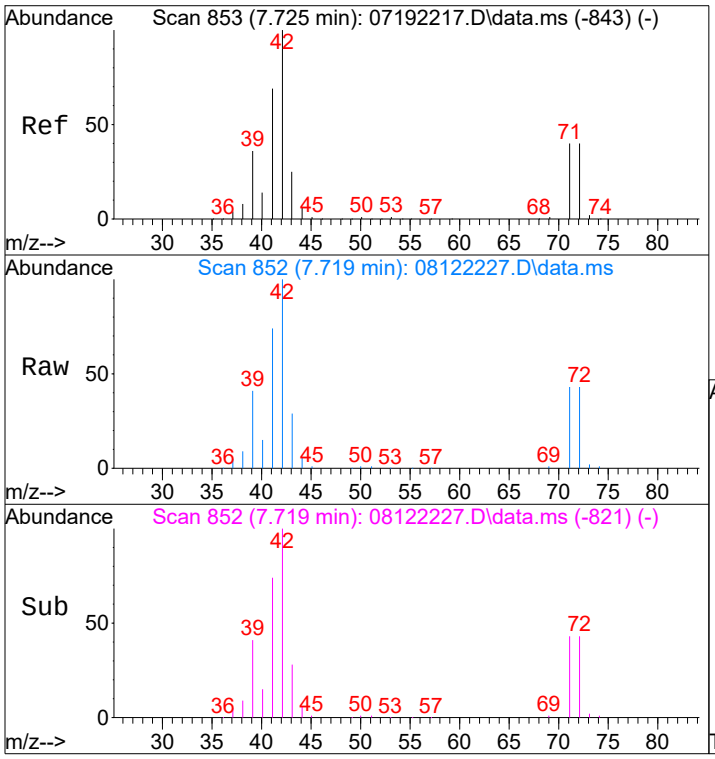


#31
n-Hexane
Concen: 24.70 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.040 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 57 Resp: 484989

Ion	Ratio	Lower	Upper
57	100		
56	55.4	43.3	64.9
86	14.6	11.8	17.6

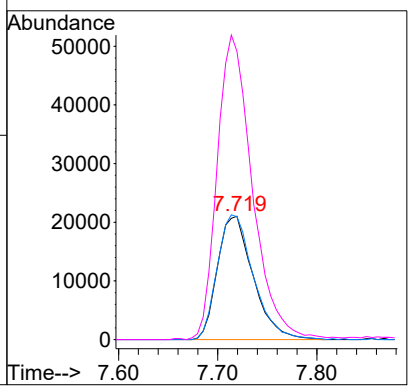


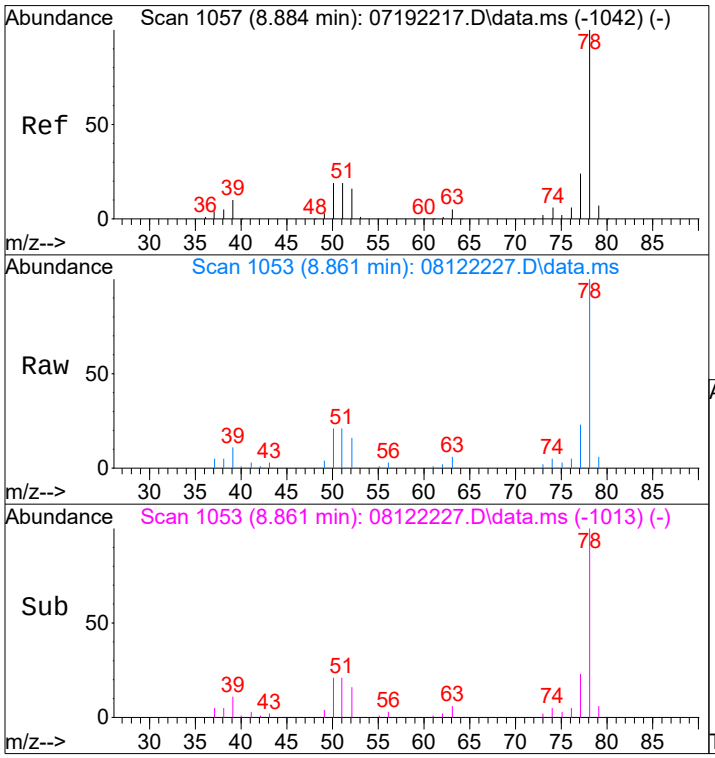


#34
Tetrahydrofuran (THF)
Concen: 6.83 ng
RT: 7.72 min Scan# 852
Delta R.T. -0.072 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 72 Resp: 52679

Ion	Ratio	Lower	Upper
72	100		
71	102.5	80.1	120.1
42	244.6	229.3	269.3

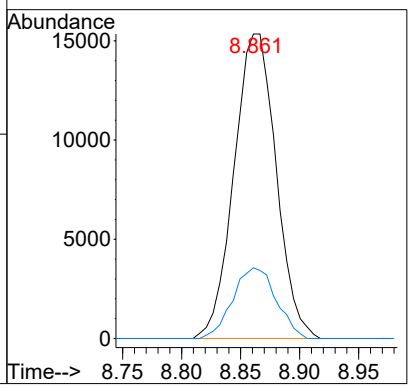


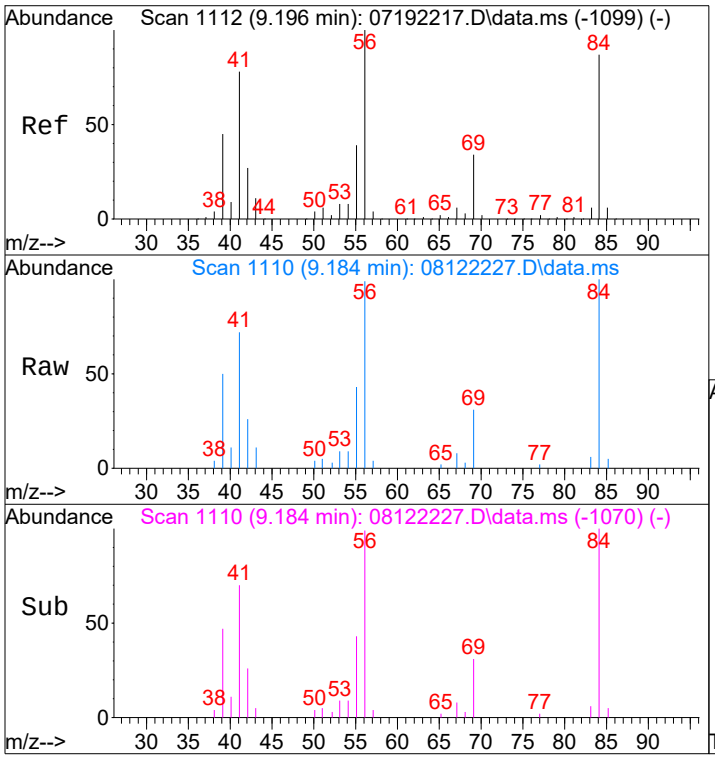


#41
Benzene
Concen: 0.79 ng
RT: 8.86 min Scan# 1053
Delta R.T. -0.022 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 78 Resp: 38101

Ion	Ratio	Lower	Upper
78	100		
77	23.9	4.2	44.2

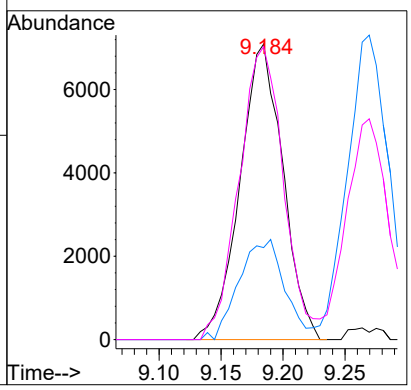


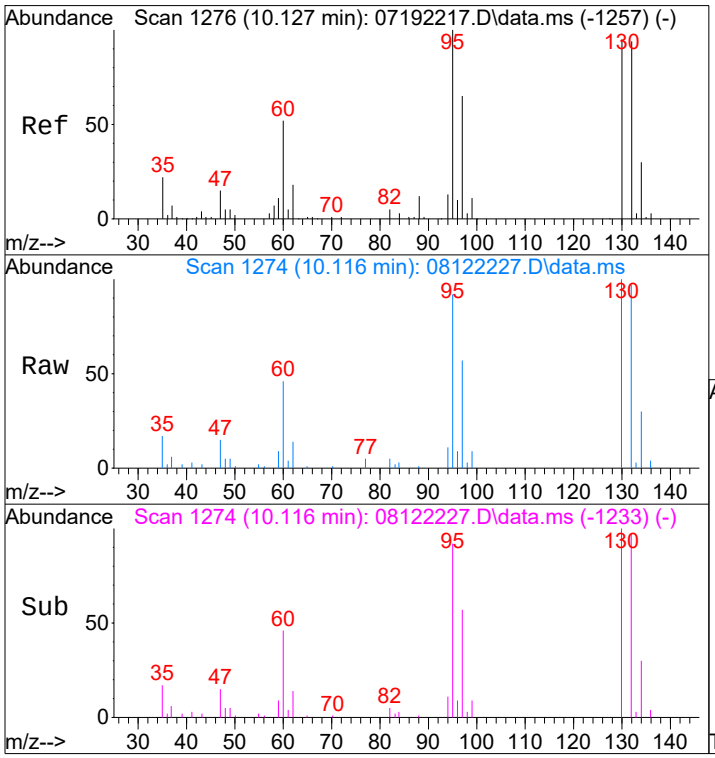


#43
Cyclohexane
Concen: 0.98 ng
RT: 9.18 min Scan# 1110
Delta R.T. -0.023 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 84 Resp: 17164

Ion	Ratio	Lower	Upper
84	100		
69	36.0	18.7	58.7
56	102.5	93.1	133.1

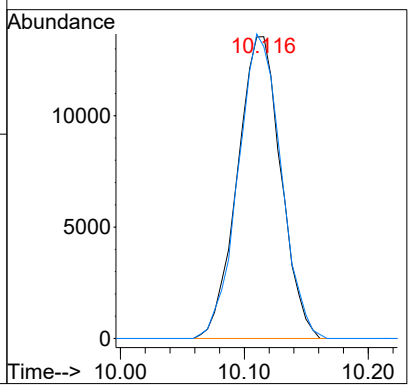


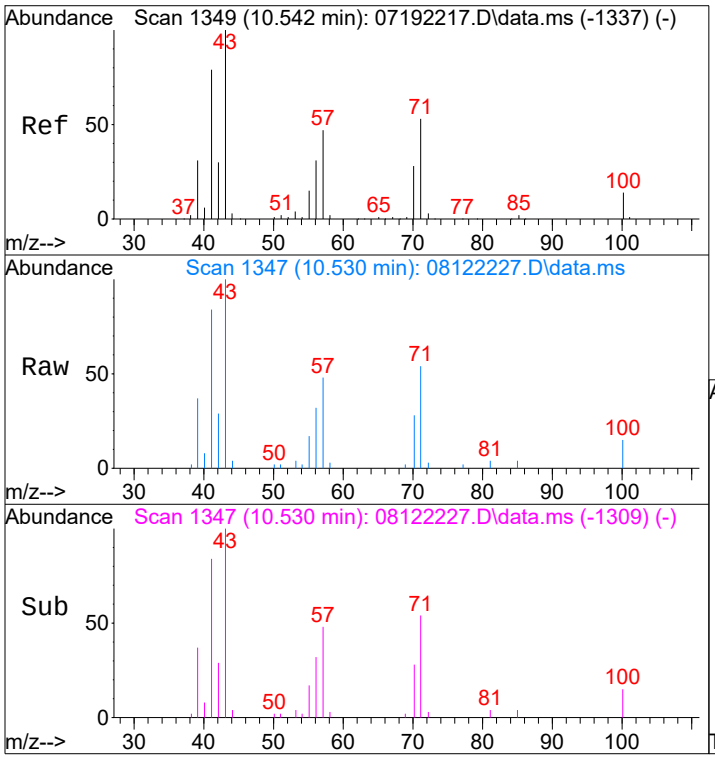


#47
Trichloroethene
Concen: 2.32 ng
RT: 10.12 min Scan# 1274
Delta R.T. -0.019 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion:130 Resp: 32991

Ion	Ratio	Lower	Upper
130	100		
132	99.5	77.3	117.3

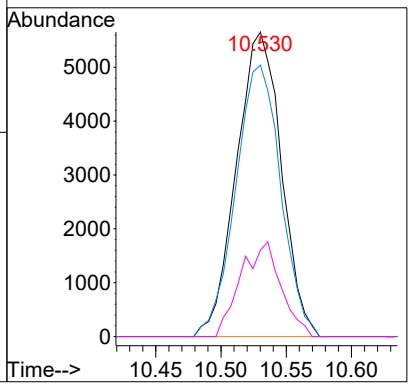


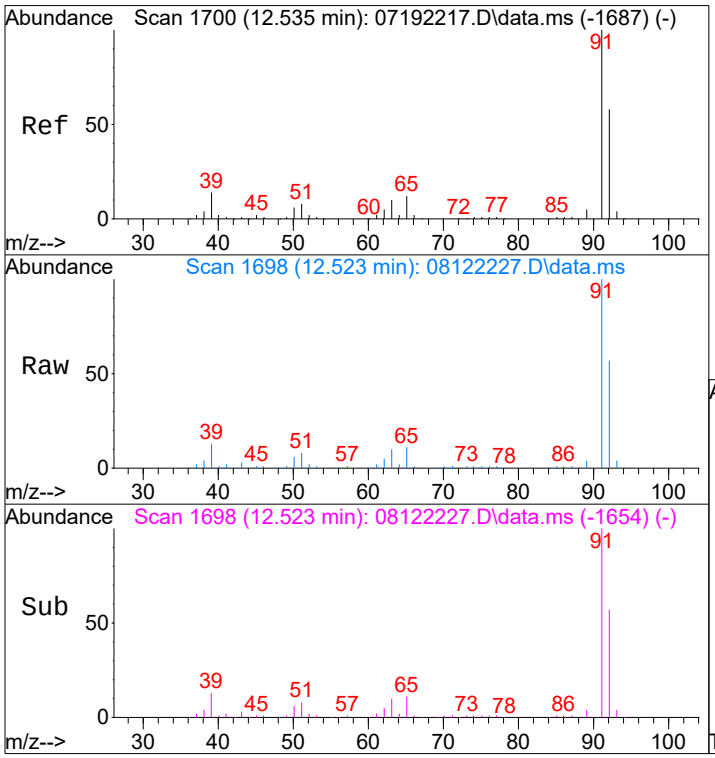


#51
n-Heptane
Concen: 1.23 ng
RT: 10.53 min Scan# 1347
Delta R.T. -0.032 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 71 Resp: 13517

Ion	Ratio	Lower	Upper
71	100		
57	89.6	69.2	109.2
100	28.0	6.0	46.0

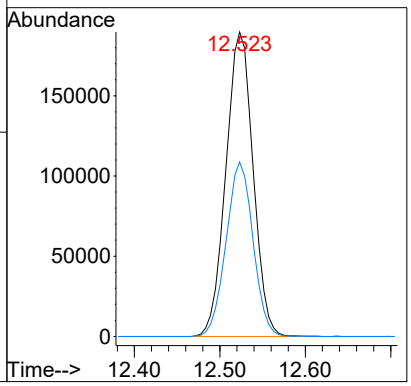


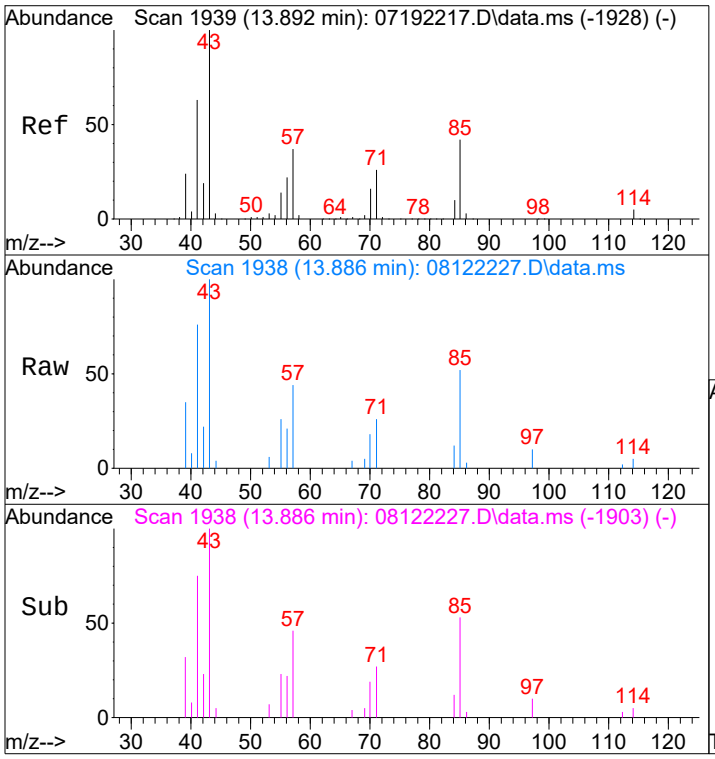


#58
Toluene
Concen: 8.40 ng
RT: 12.52 min Scan# 1698
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 91 Resp: 420076

Ion	Ratio	Lower	Upper
91	100		
92	56.7	37.2	77.2

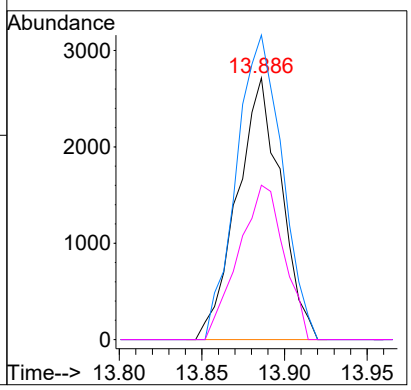


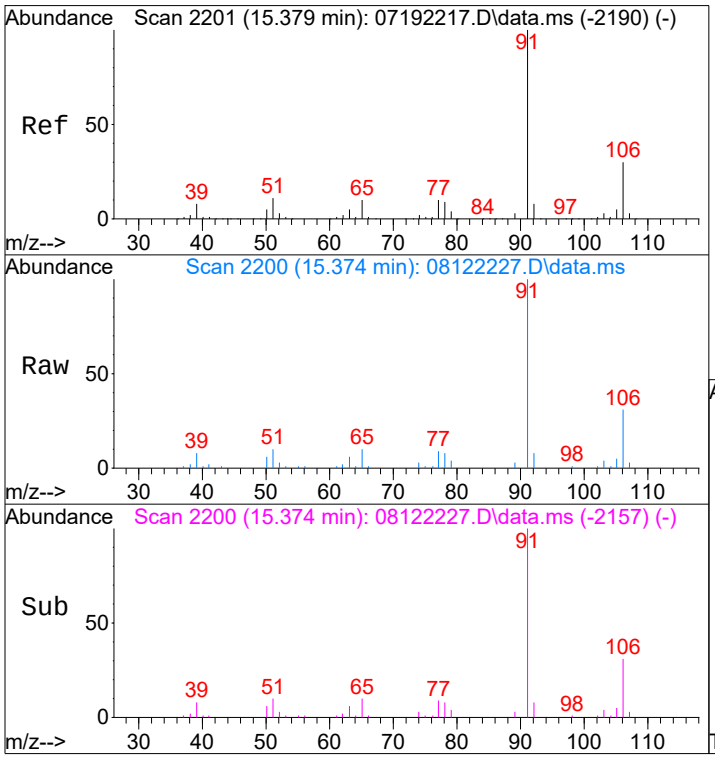


#63
n-Octane
Concen: 0.57 ng
RT: 13.89 min Scan# 1938
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 57 Resp: 5005

Ion	Ratio	Lower	Upper
57	100		
85	121.3	93.0	139.6
71	61.5	55.8	83.8

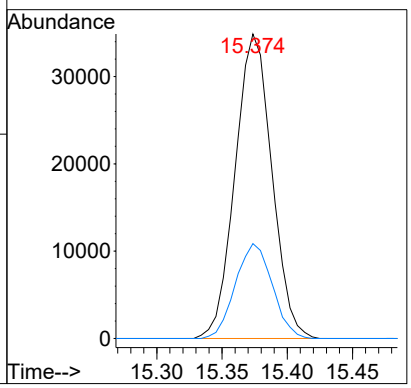


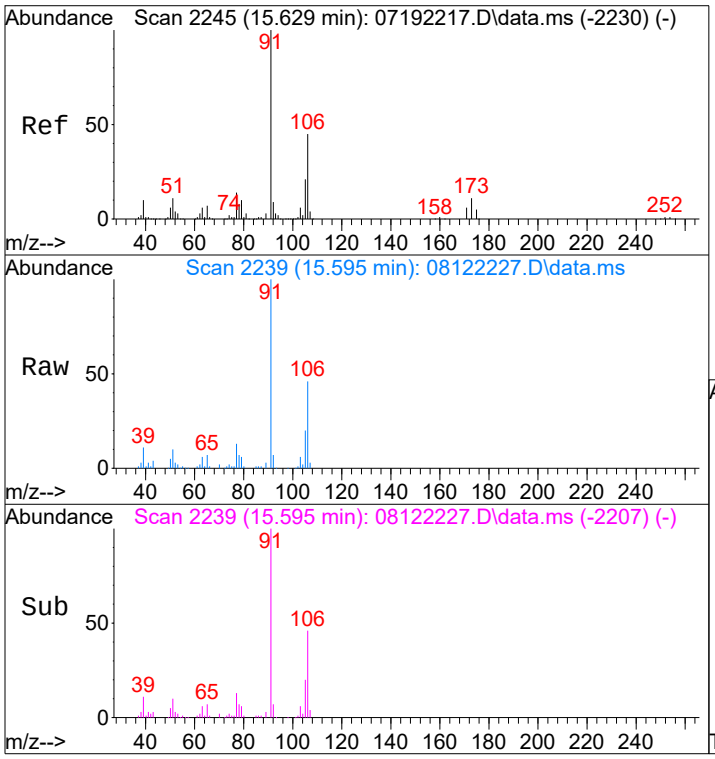


#66
Ethylbenzene
Concen: 1.16 ng
RT: 15.37 min Scan# 2200
Delta R.T. -0.006 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 91 Resp: 68290

Ion	Ratio	Lower	Upper
91	100		
106	31.2	9.6	49.6

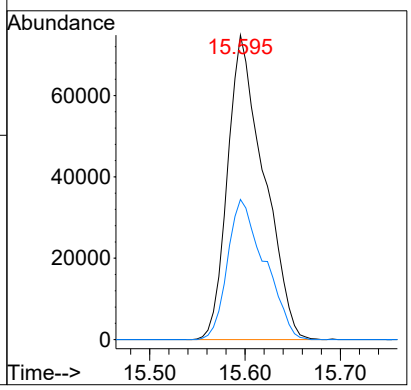


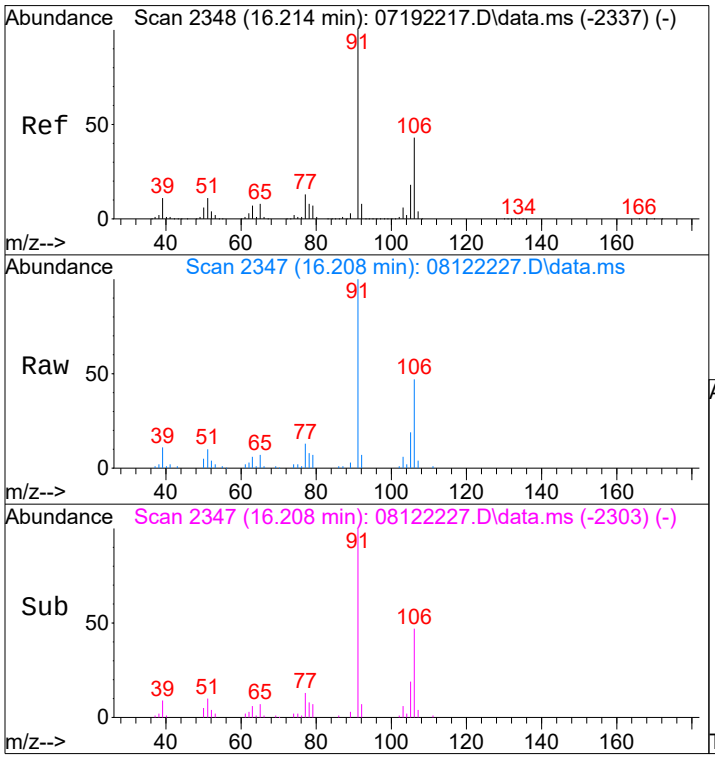


#67
m- & p-Xylenes
Concen: 4.03 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.017 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 91 Resp: 197718

Ion	Ratio	Lower	Upper
91	100		
106	47.1	24.0	64.0

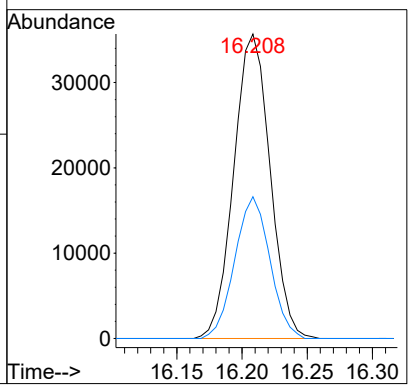


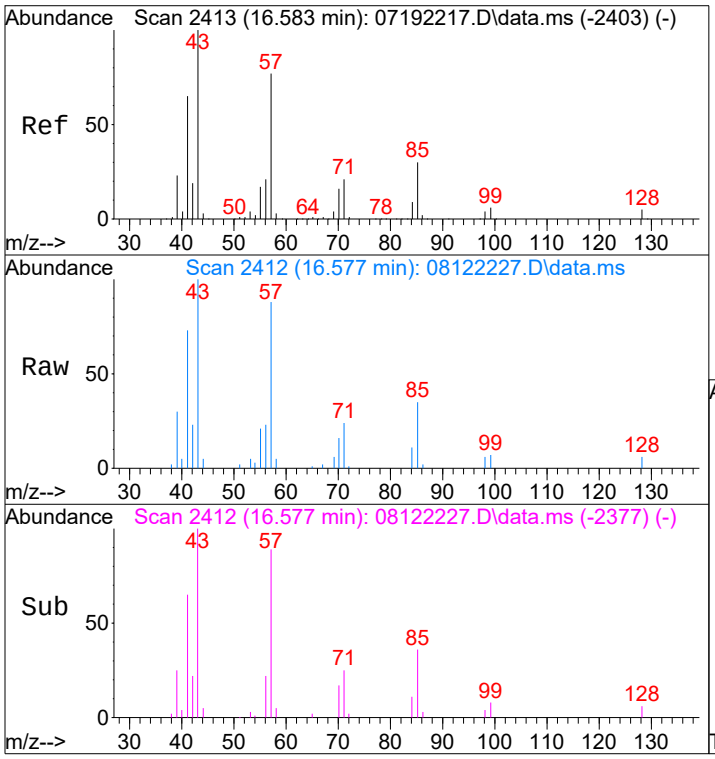


#70
o-Xylene
Concen: 1.45 ng
RT: 16.21 min Scan# 2347
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 91 Resp: 68922

Ion	Ratio	Lower	Upper
91	100		
106	45.0	23.1	63.1

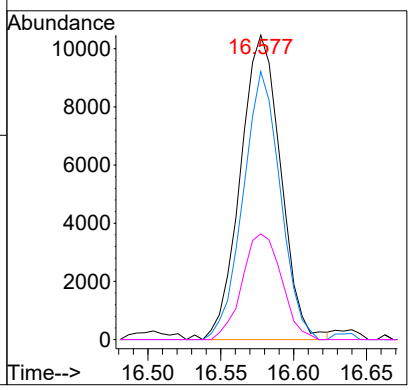


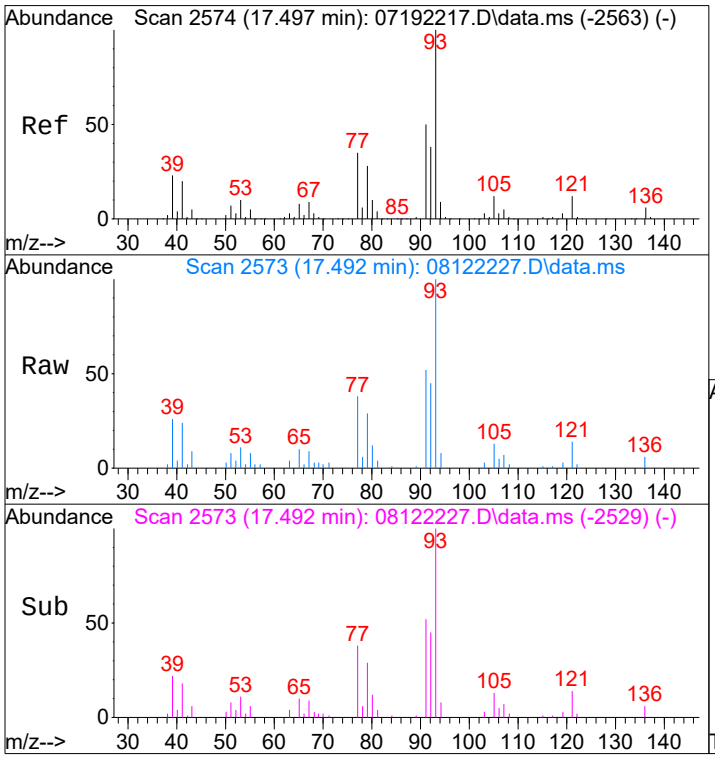


#71
n-Nonane
Concen: 0.85 ng
RT: 16.58 min Scan# 2412
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 43 Resp: 20153

Ion	Ratio	Lower	Upper
43	100		
57	81.2	56.9	96.9
85	33.8	10.1	50.1

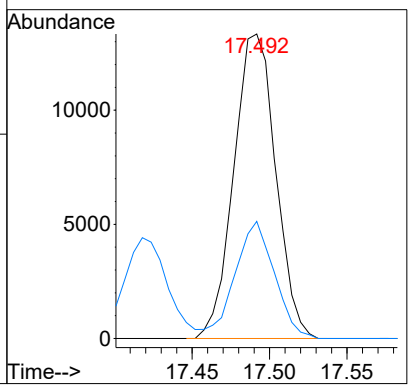


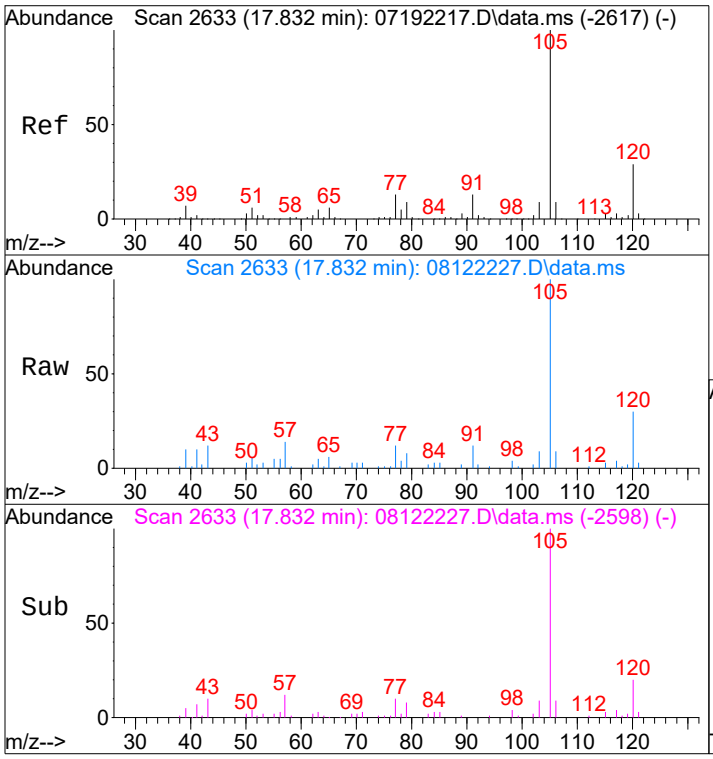


#75
alpha-Pinene
Concen: 0.87 ng
RT: 17.49 min Scan# 2573
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 93 Resp: 25138

Ion	Ratio	Lower	Upper
93	100		
77	36.0	15.4	55.4

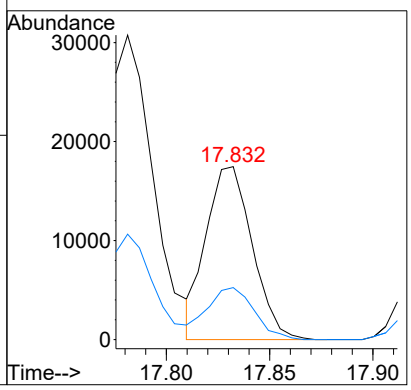


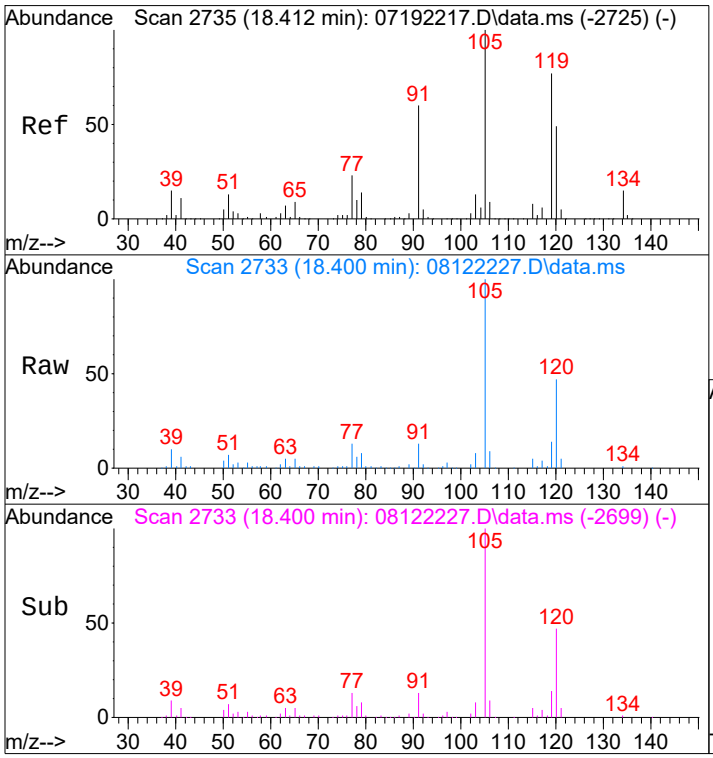


#78
4-Ethyltoluene
Concen: 0.48 ng
RT: 17.83 min Scan# 2633
Delta R.T. -0.000 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion:105 Resp: 27146

Ion	Ratio	Lower	Upper
105	100		
120	30.6	8.1	48.1

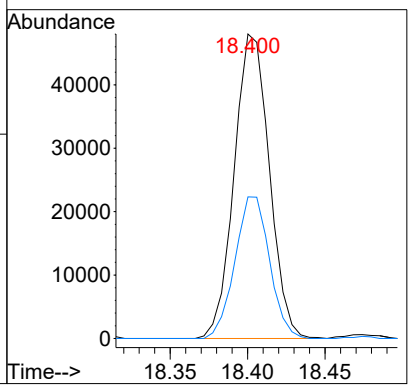


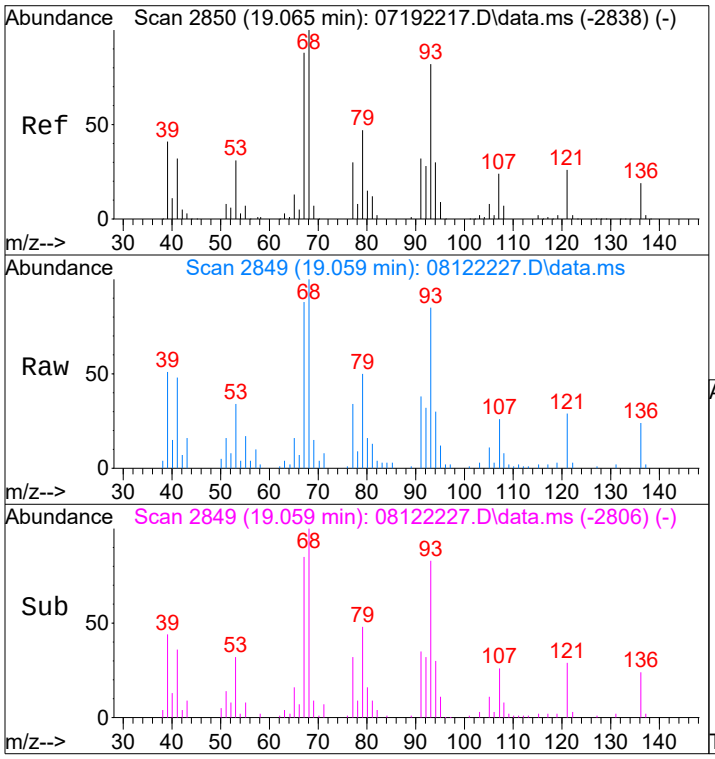


#82
1,2,4-Trimethylbenzene
Concen: 1.49 ng
RT: 18.40 min Scan# 2733
Delta R.T. -0.006 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion:105 Resp: 75868

Ion	Ratio	Lower	Upper
105	100		
120	45.8	30.5	70.5

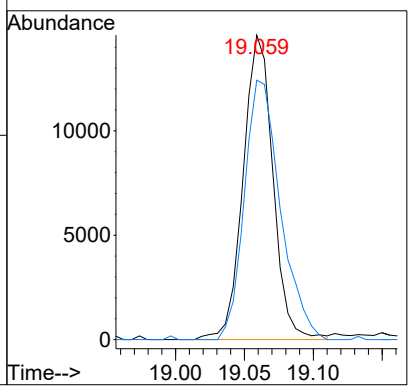




#91
d-Limonene
Concen: 1.34 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.006 min
Lab File: 08122227.D
Acq: 12 Aug 2022 17:05

Tgt Ion: 68 Resp: 22048

Ion	Ratio	Lower	Upper
68	100		
93	102.7	61.3	101.3#



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122229.D Vial: 3
Acq On : 12 Aug 2022 18:09 Operator: SC
Sample : P2203433-004 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:28:06 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	149792	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	616292	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	121810	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	283162	11.266	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.16%				
57) Toluene-d8 (SS2)	12.39	98	655858	12.829	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%				
73) Bromofluorobenzene (SS3)	16.79	174	283497	13.727	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.84%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.34	85	48571	1.371	ng		99
4) Chloromethane	3.49	50	2383	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	912	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.27	45	19416	2.049	ng		83
11) Acetonitrile	4.41	41	3742	N.D.			
12) Acrolein	4.51	56	1553	N.D.			
13) Acetone	4.60	58	45422	5.125	ng	#	68
14) Trichlorofluoromethane	4.72	101	64106	1.795	ng		98
15) 2-Propanol (Isopropanol)	4.81	45	310931	8.721	ng		94
16) Acrylonitrile	5.00	53	772	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.31	59	913	N.D.			
19) Methylene Chloride	5.32	84	1135	N.D.			
20) 3-Chloro-1-propene (Al...	5.35	41	554	N.D.			
21) Trichlorotrifluoroethane	5.54	151	18236	1.252	ng		87
22) Carbon Disulfide	5.59	76	5126	N.D.			
23) trans-1,2-Dichloroethene	6.27	61	105	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.36	73	267	N.D.			
26) Vinyl Acetate	6.44	86	279	N.D.			
27) 2-Butanone (MEK)	6.64	72	7761	0.972	ng		93
28) cis-1,2-Dichloroethene	7.04	61	447	N.D.			
29) Diisopropyl Ether	7.26	87	510	N.D.			
30) Ethyl Acetate	7.26	61	3222	0.631	ng	#	74
31) n-Hexane	7.27	57	74523	3.781	ng		98
32) Chloroform	7.32	83	879	N.D.			
34) Tetrahydrofuran (THF)	7.74	72	7599	0.982	ng		98
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.08	62	643	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	9.26	61	18677	No Calib			
40) 1-Butanol	9.17	56	3980	No Calib			
41) Benzene	8.86	78	17932	N.D.			
42) Carbon Tetrachloride	9.02	117	6075	N.D.			
43) Cyclohexane	9.17	84	4004	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	9.90	83	166	N.D.			
47) Trichloroethene	10.11	130	4338	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	10.20	57	8673	N.D.			
50) Methyl Methacrylate	10.53	100	752	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122229.D Vial: 3
Acq On : 12 Aug 2022 18:09 Operator: SC
Sample : P2203433-004 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:28:06 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

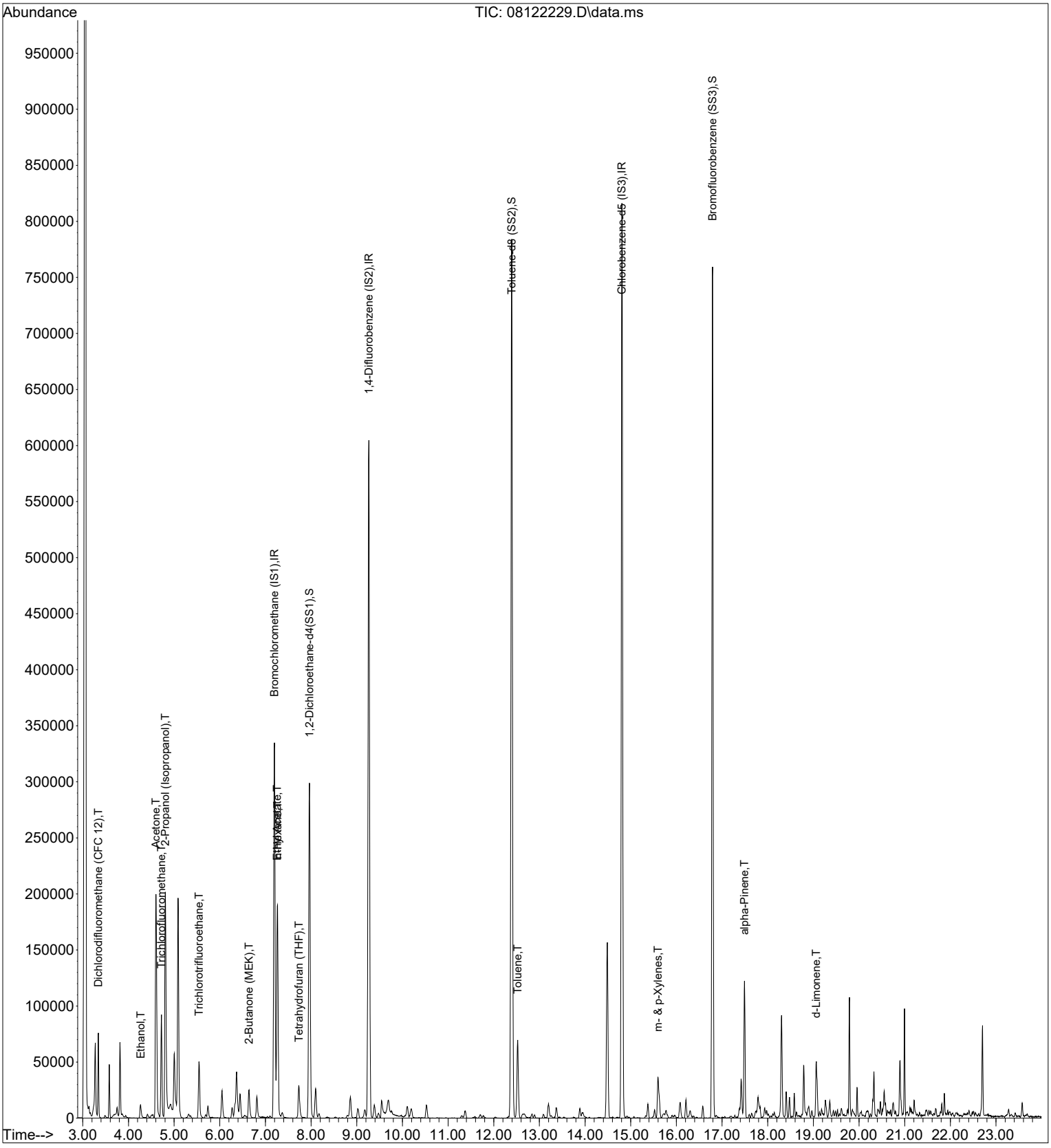
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.53	71	2923	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.30	58	548	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.52	91	59001	1.147 ng		100
59) 2-Hexanone	12.90	43	2290	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.75	43	1531	N.D.		
63) n-Octane	13.89	57	1303	N.D.		
64) Tetrachloroethene	13.99	166	196	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.37	91	10839	N.D.		
67) m- & p-Xylenes	15.60	91	33131	0.657 ng		96
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.07	104	3841	N.D.		
70) o-Xylene	16.21	91	11550	N.D.		
71) n-Nonane	16.58	43	4379	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	16.99	105	986	N.D.		
75) alpha-Pinene	17.49	93	50098	1.692 ng		100
76) n-Propylbenzene	17.64	91	4472	N.D.		
77) 3-Ethyltoluene	16.99	105	986	No Calib	#	
78) 4-Ethyltoluene	17.84	105	4477	N.D.		
79) 1,3,5-Trimethylbenzene	17.93	105	3020	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.49	105	6687	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.41	105	12010	N.D.		
83) n-Decane	16.79	58	214	No Calib	#	
84) Benzyl Chloride	18.41	91	1481	N.D.		
85) 1,3-Dichlorobenzene	18.63	146	2154	N.D.		
86) 1,4-Dichlorobenzene	18.63	146	2154	N.D.		
87) sec-Butylbenzene	18.71	105	477	N.D.		
88) 4-Isopropyltoluene (p-...	18.90	119	4463	N.D.		
89) 1,2,3-Trimethylbenzene	18.41	105	12010	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.06	68	7863	0.463 ng	#	1
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.08	58	563	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.92	128	5421	N.D.		
96) n-Dodecane	18.79	58	815	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.60	55	402	No Calib	#	
99) tert-Butylbenzene	18.41	119	1473	N.D.		
100) n-Butylbenzene	19.37	91	2776	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122229.D Vial: 3
Acq On : 12 Aug 2022 18:09 Operator: SC
Sample : P2203433-004 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:28:06 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122229.D Vial: 3
Acq On : 12 Aug 2022 18:09 Operator: SC
Sample : P2203433-004 (1000mL) Inst : MS09
Misc : S35-07192201

8/15/22

Quant Time: Aug 15 08:28:06 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

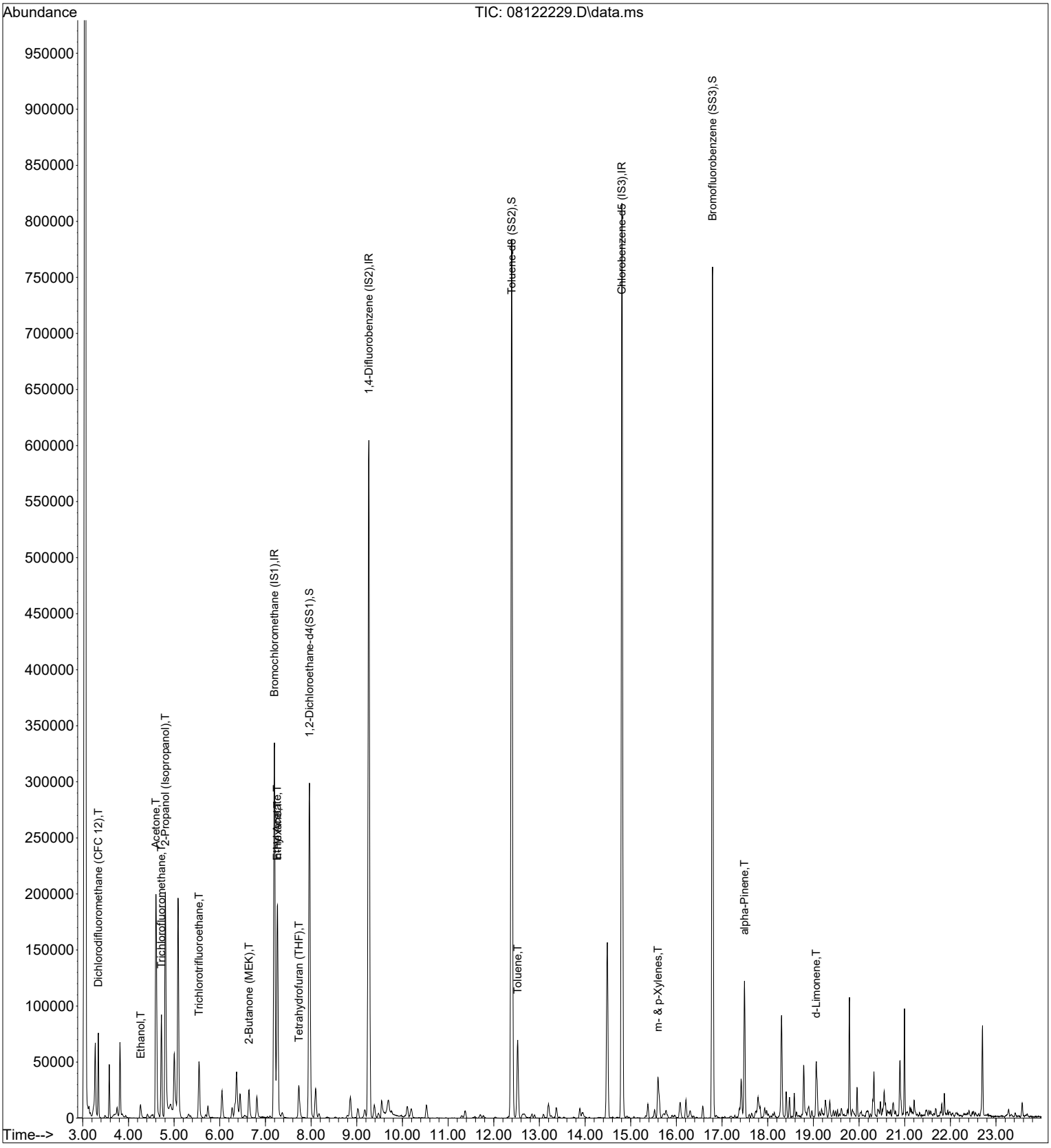
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	149792	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	616292	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	121810	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	283162	11.266	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.16%				
57) Toluene-d8 (SS2)	12.39	98	655858	12.829	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%				
73) Bromofluorobenzene (SS3)	16.79	174	283497	13.727	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.84%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.34	85	48571	1.371	ng		99
10) Ethanol	4.27	45	19416	2.049	ng		83
13) Acetone	4.60	58	45422	5.125	ng	#	68
14) Trichlorofluoromethane	4.72	101	64106	1.795	ng		98
15) 2-Propanol (Isopropanol)	4.81	45	310931	8.721	ng		94
21) Trichlorotrifluoroethane	5.54	151	18236	1.252	ng		87
27) 2-Butanone (MEK)	6.64	72	7761	0.972	ng		93
30) Ethyl Acetate	7.26	61	3222	0.631	ng	#	74
31) n-Hexane	7.27	57	74523	3.781	ng		98
34) Tetrahydrofuran (THF)	7.74	72	7599	0.982	ng		98
58) Toluene	12.52	91	59001	1.147	ng		100
67) m- & p-Xylenes	15.60	91	33131	0.657	ng		96
75) alpha-Pinene	17.49	93	50098	1.692	ng		100
91) d-Limonene	19.06	68	7863	0.463	ng	#	1

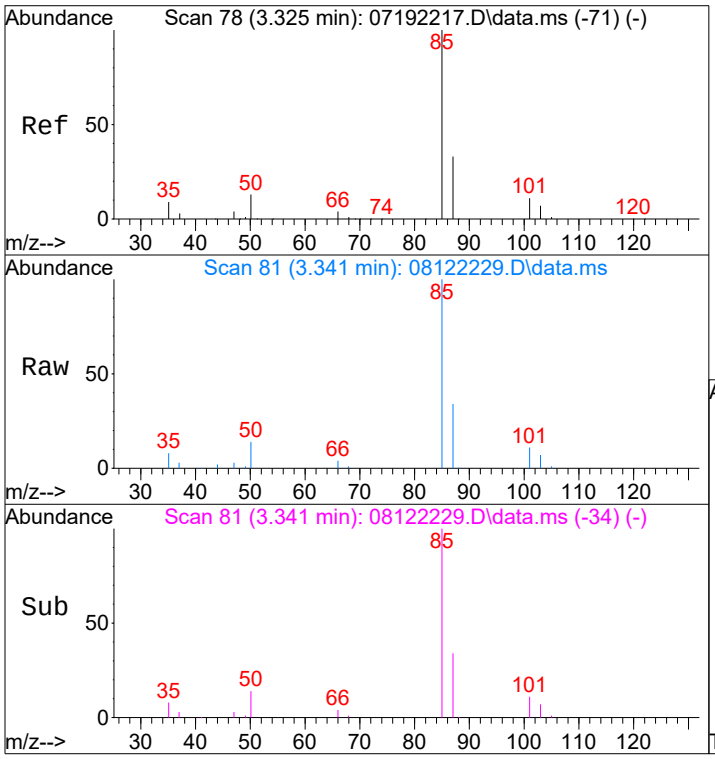
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122229.D Vial: 3
Acq On : 12 Aug 2022 18:09 Operator: SC
Sample : P2203433-004 (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:28:06 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

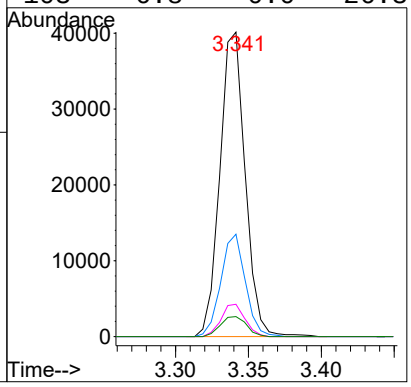


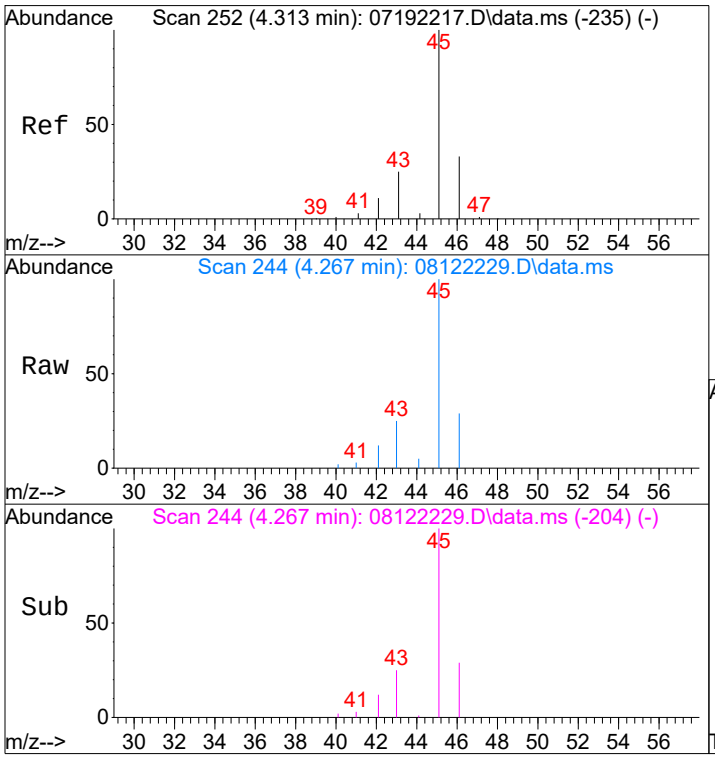


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.37 ng
RT: 3.34 min Scan# 81
Delta R.T. 0.017 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 85 Resp: 48571

Ion	Ratio	Lower	Upper
85	100		
87	32.5	13.1	53.1
101	10.1	0.0	30.1
103	6.8	0.0	26.3

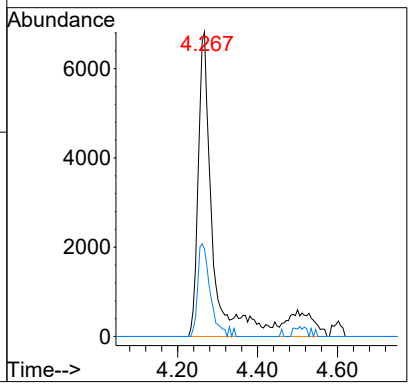


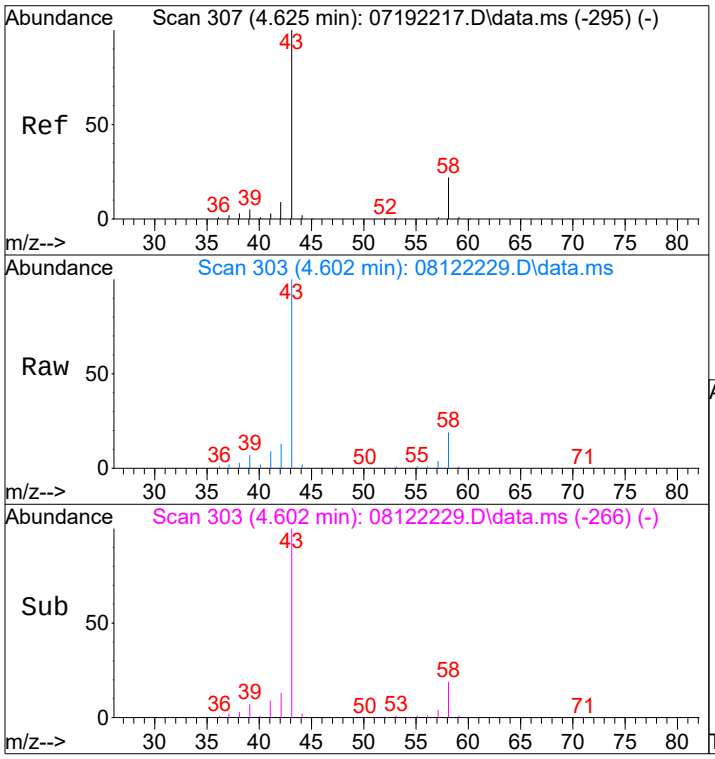


#10
Ethanol
Concen: 2.05 ng
RT: 4.27 min Scan# 244
Delta R.T. -0.024 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 45 Resp: 19416

Ion	Ratio	Lower	Upper
45	100		
46	22.9	12.6	52.6

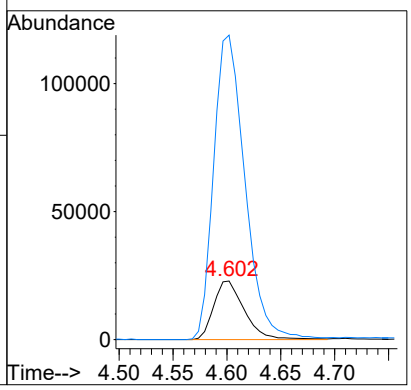


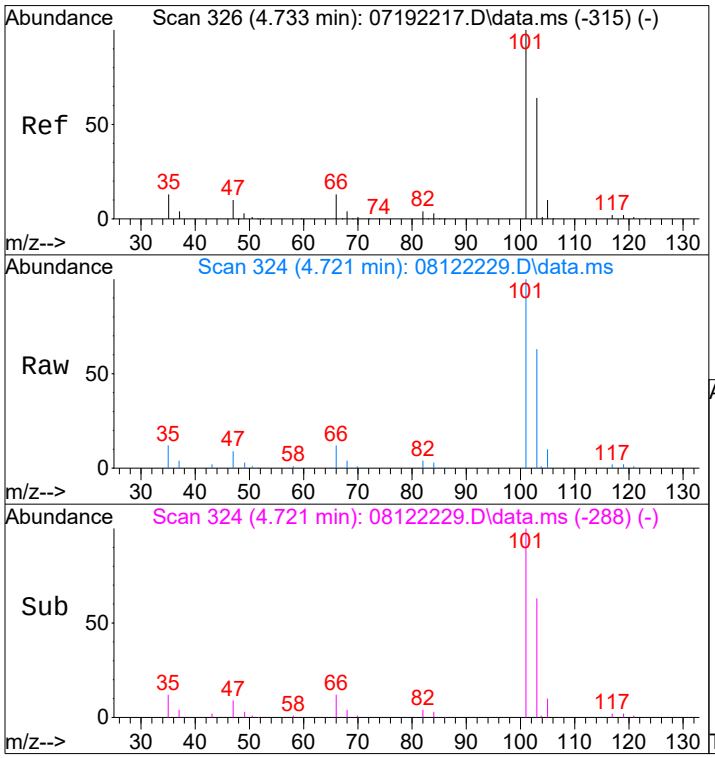


#13
Acetone
Concen: 5.12 ng
RT: 4.60 min Scan# 303
Delta R.T. -0.037 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 58 Resp: 45422

Ion	Ratio	Lower	Upper
58	100		
43	536.9	424.6	484.6#

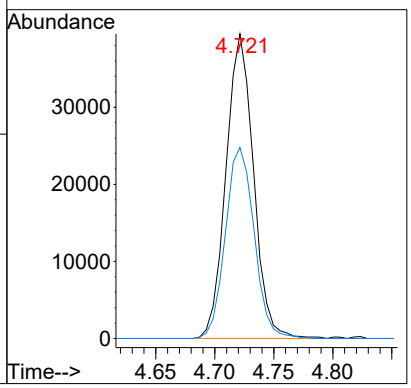


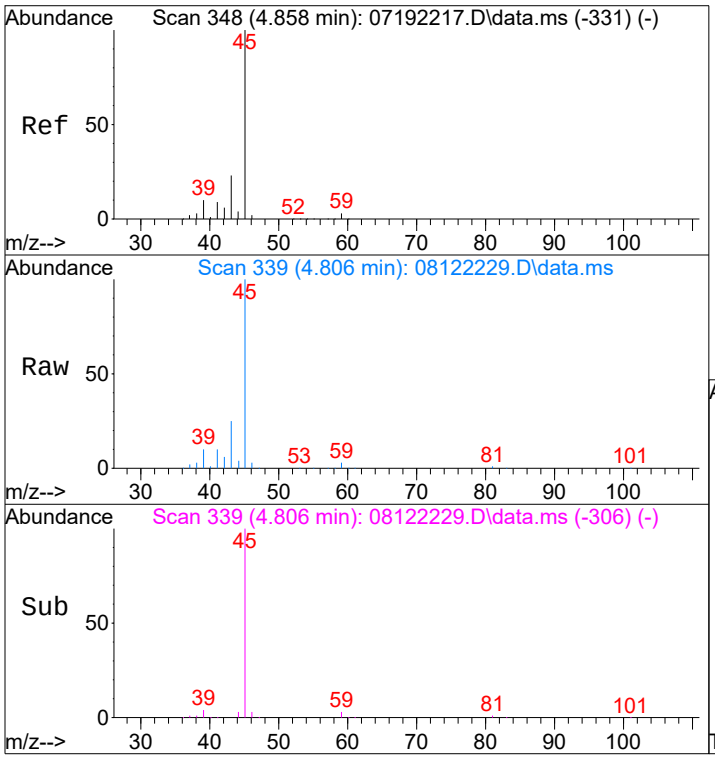


#14
Trichlorofluoromethane
Concen: 1.80 ng
RT: 4.72 min Scan# 324
Delta R.T. -0.044 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion:101 Resp: 64106

Ion	Ratio	Lower	Upper
101	100		
103	65.4	43.7	83.7

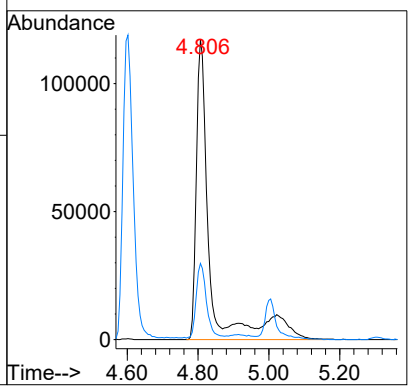


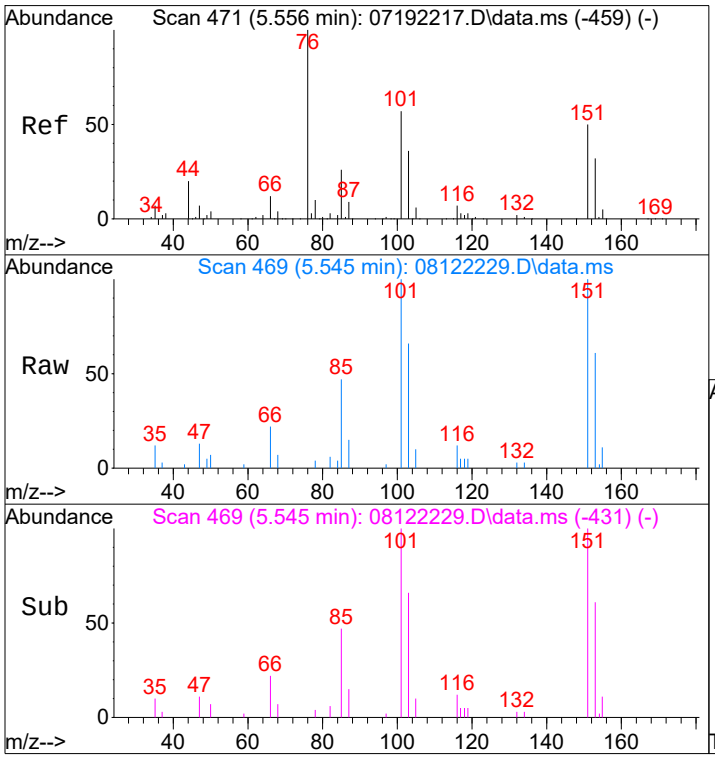


#15
2-Propanol (Isopropanol)
Concen: 8.72 ng
RT: 4.81 min Scan# 339
Delta R.T. -0.061 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 45 Resp: 310931

Ion	Ratio	Lower	Upper
45	100		
43	21.2	4.2	44.2

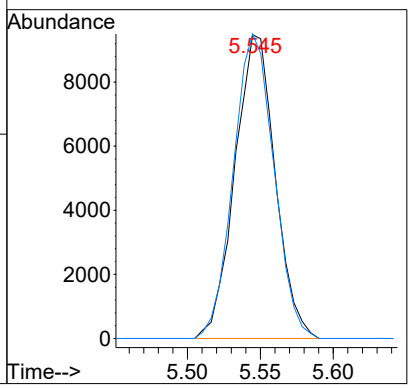


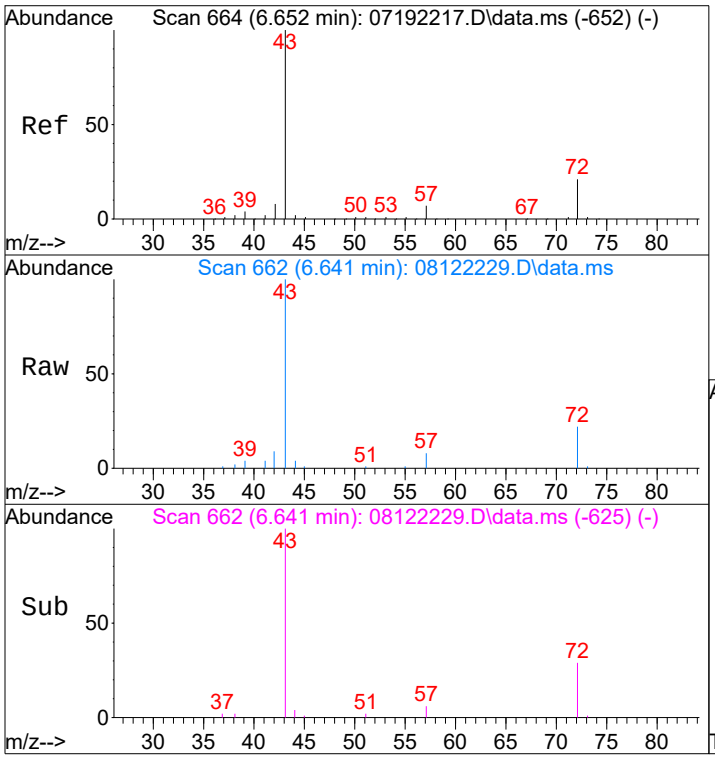


#21
Trichlorotrifluoroethane
Concen: 1.25 ng
RT: 5.54 min Scan# 469
Delta R.T. -0.037 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion:151 Resp: 18236

Ion	Ratio	Lower	Upper
151	100		
101	100.9	94.5	134.5

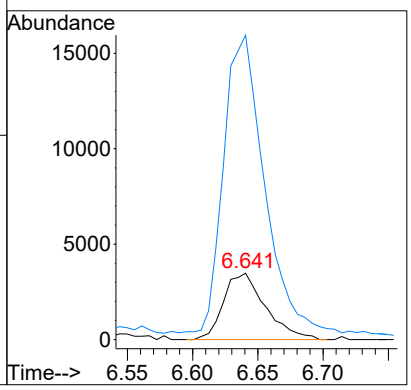


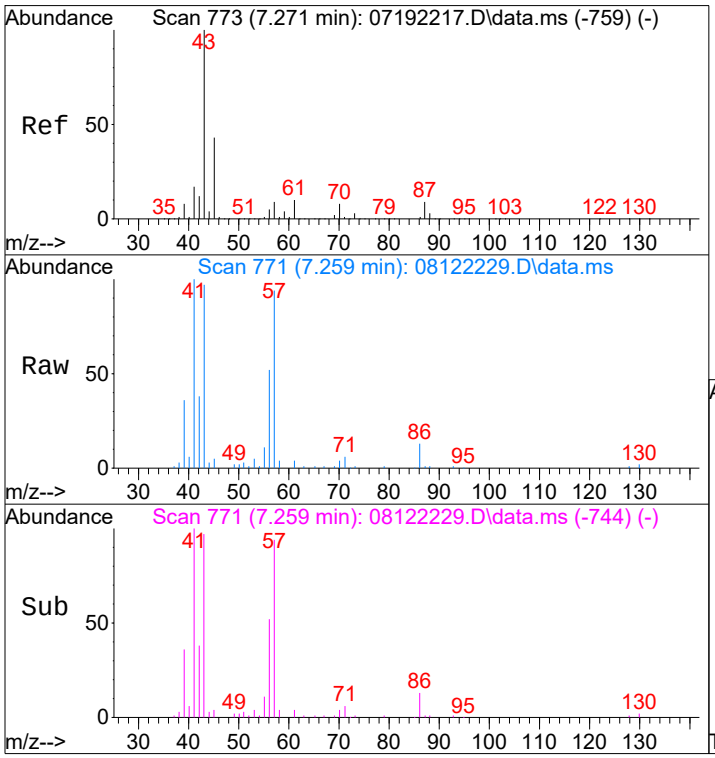


#27
2-Butanone (MEK)
Concen: 0.97 ng
RT: 6.64 min Scan# 662
Delta R.T. -0.043 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 72 Resp: 7761

Ion	Ratio	Lower	Upper
72	100		
43	455.9	454.7	494.7

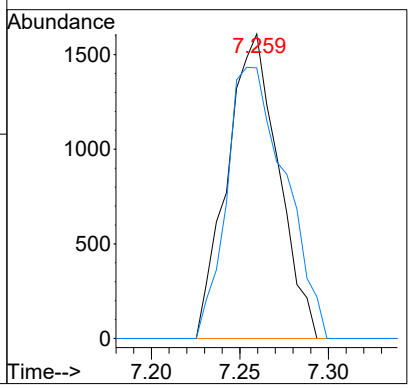


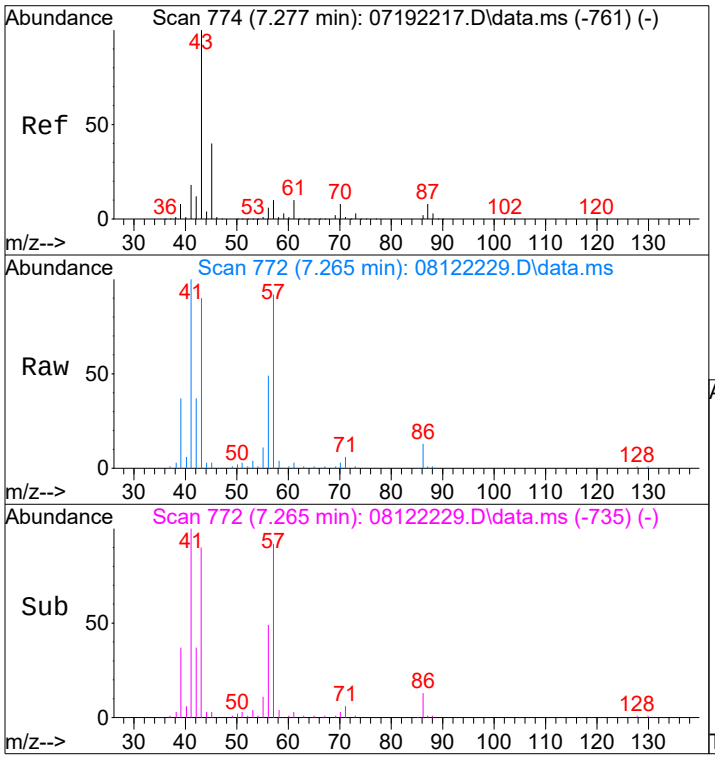


#30
Ethyl Acetate
Concen: 0.63 ng
RT: 7.26 min Scan# 771
Delta R.T. -0.046 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 61 Resp: 3222

Ion	Ratio	Lower	Upper
61	100		
70	102.5	59.3	99.3#

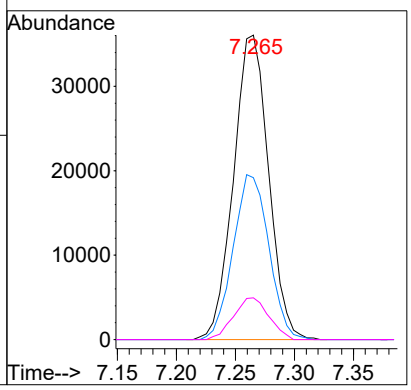


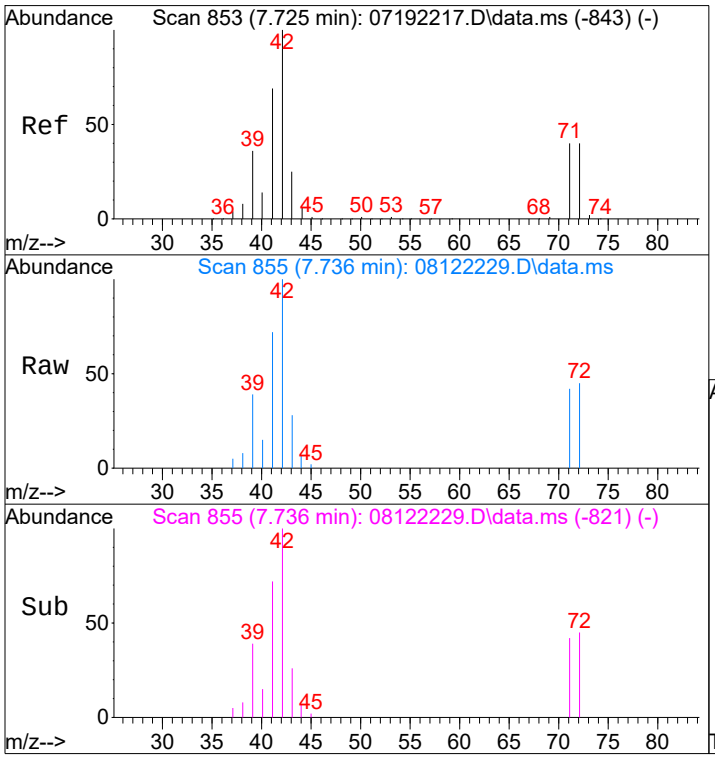


#31
n-Hexane
Concen: 3.78 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.040 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 57 Resp: 74523

Ion	Ratio	Lower	Upper
57	100		
56	55.1	43.3	64.9
86	13.8	11.8	17.6

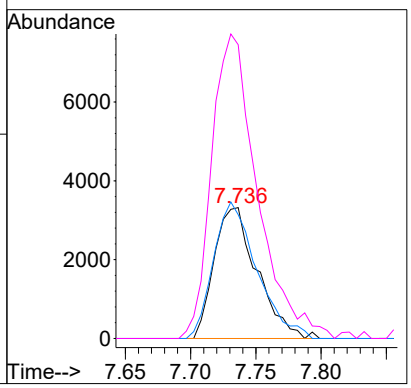


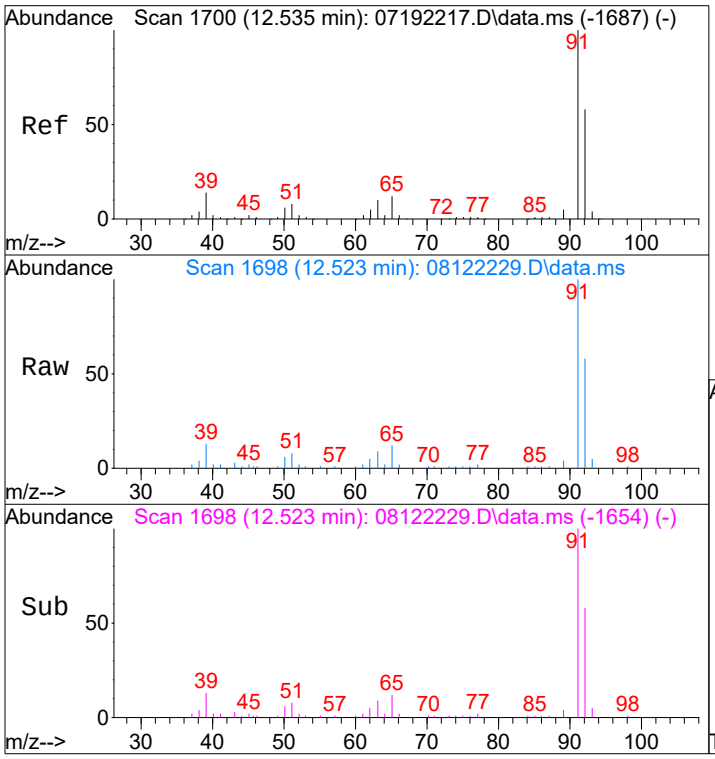


#34
Tetrahydrofuran (THF)
Concen: 0.98 ng
RT: 7.74 min Scan# 855
Delta R.T. -0.055 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 72 Resp: 7599

Ion	Ratio	Lower	Upper
72	100		
71	105.4	80.1	120.1
42	248.0	229.3	269.3

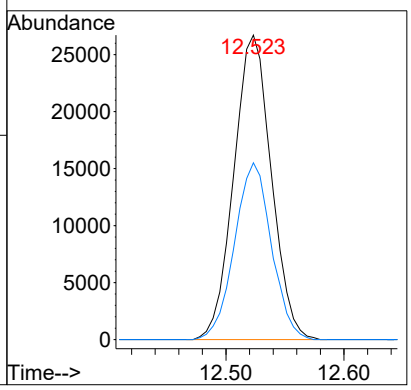


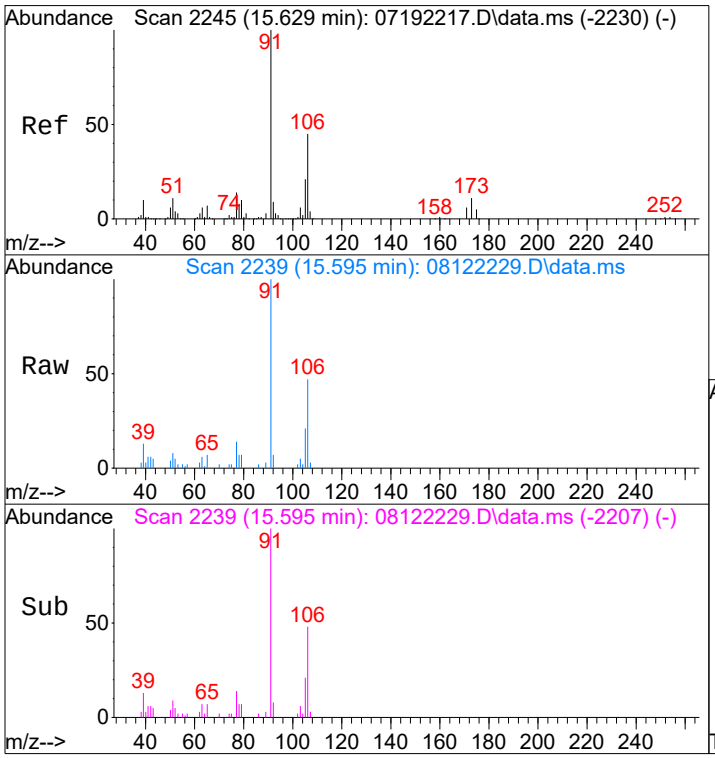


#58
Toluene
Concen: 1.15 ng
RT: 12.52 min Scan# 1698
Delta R.T. -0.000 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 91 Resp: 59001

Ion	Ratio	Lower	Upper
91	100		
92	57.1	37.2	77.2

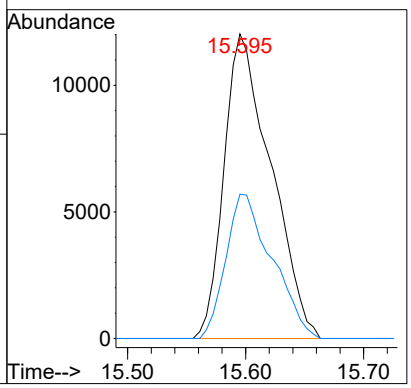


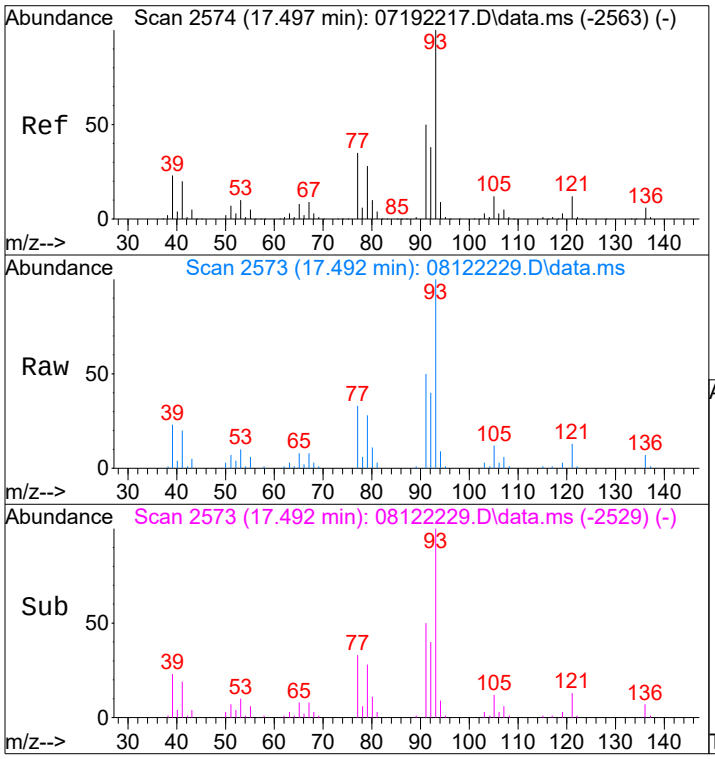


#67
m- & p-Xylenes
Concen: 0.66 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.017 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 91 Resp: 33131

Ion	Ratio	Lower	Upper
91	100		
106	46.7	24.0	64.0

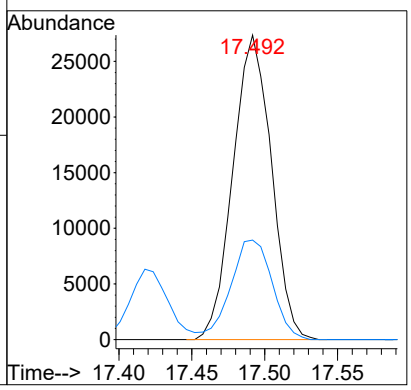


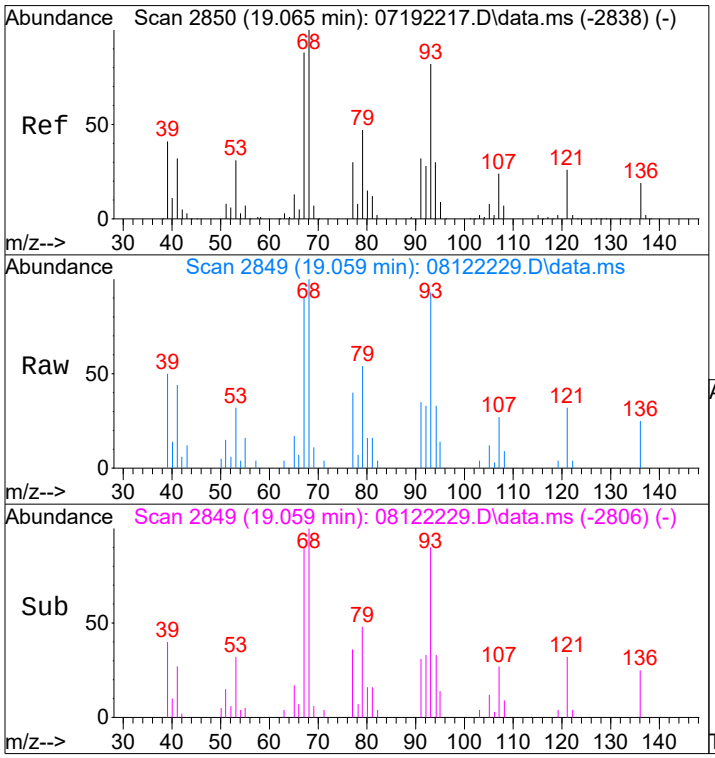


#75
alpha-Pinene
Concen: 1.69 ng
RT: 17.49 min Scan# 2573
Delta R.T. -0.000 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 93 Resp: 50098

Ion	Ratio	Lower	Upper
93	100		
77	35.5	15.4	55.4

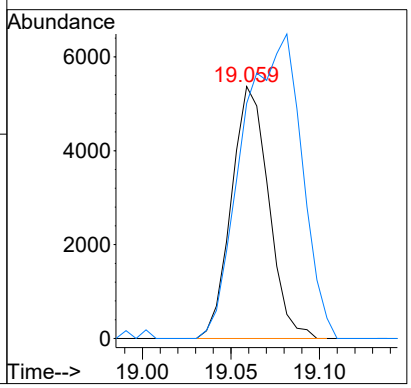




#91
d-Limonene
Concen: 0.46 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.006 min
Lab File: 08122229.D
Acq: 12 Aug 2022 18:09

Tgt Ion: 68 Resp: 7863

Ion	Ratio	Lower	Upper
68	100		
93	191.0	61.3	101.3#



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122205.D Vial: 2
Acq On : 12 Aug 2022 00:43 Operator: SC
Sample : MB R9081222_1000mL Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 03:28:59 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/12/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.19	130	138243	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	569433	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	116930	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	264295	11.394	ng		-0.05
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.12%				
57) Toluene-d8 (SS2)	12.39	98	616853	12.570	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
73) Bromofluorobenzene (SS3)	16.79	174	278202	14.033	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.24%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.			
3) Dichlorodifluoromethan...	0.00	85	0	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.30	45	61	N.D.			
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	4.52	56	217	N.D.			
13) Acetone	4.63	58	2954	0.361	ng	#	74
14) Trichlorofluoromethane	0.00	101	0	N.D.			
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.			
19) Methylene Chloride	0.00	84	0	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	0.00	76	0	N.D.			
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.67	72	128	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.			
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	0.00	57	0	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	9.26	61	17834	No Calib			
40) 1-Butanol	9.26	56	11800	No Calib		#	
41) Benzene	0.00	78	0	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	9.26	84	432	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122205.D Vial: 2
Acq On : 12 Aug 2022 00:43 Operator: SC
Sample : MB R9081222_1000mL Inst : MS09
Misc : S35-07192201

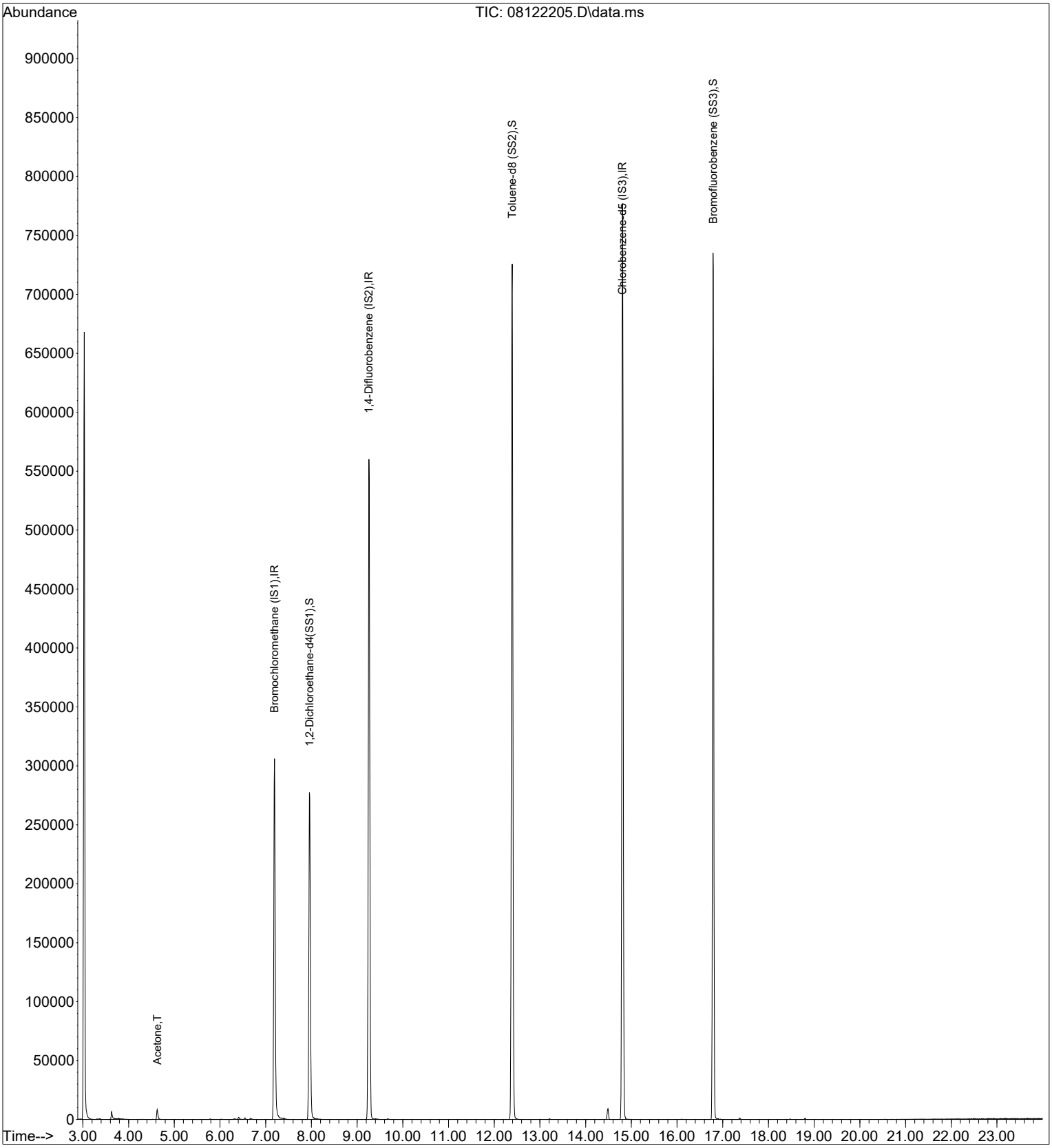
Quant Time: Aug 12 03:28:59 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	16.79	105	247	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	16.79	105	247	No Calib	#	
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_08\12\08122205.D Vial: 2
Acq On : 12 Aug 2022 00:43 Operator: SC
Sample : MB R9081222_1000mL Inst : MS09
Misc : S35-07192201

Quant Time: Aug 12 03:28:59 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152204.D Vial: 2
Acq On : 15 Aug 2022 6:12 Operator: SC
Sample : MB R9081522_1000mL Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:36:05 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	126773	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	516879	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	105961	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.96	65	249035	11.708	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.68%			
57) Toluene-d8 (SS2)	12.39	98	551815	12.408	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.28%			
73) Bromofluorobenzene (SS3)	16.79	174	246651	13.729	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.84%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.29	45	52	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	4.52	56	245	N.D.		
13) Acetone	4.63	58	3029	0.404	ng	92
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	0.00	76	0	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.67	72	143	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	17036	No Calib	#	
40) 1-Butanol	9.26	56	11165	No Calib	#	
41) Benzene	0.00	78	0	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.25	84	459	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152204.D Vial: 2
Acq On : 15 Aug 2022 6:12 Operator: SC
Sample : MB R9081522_1000mL Inst : MS09
Misc : S35-07192201

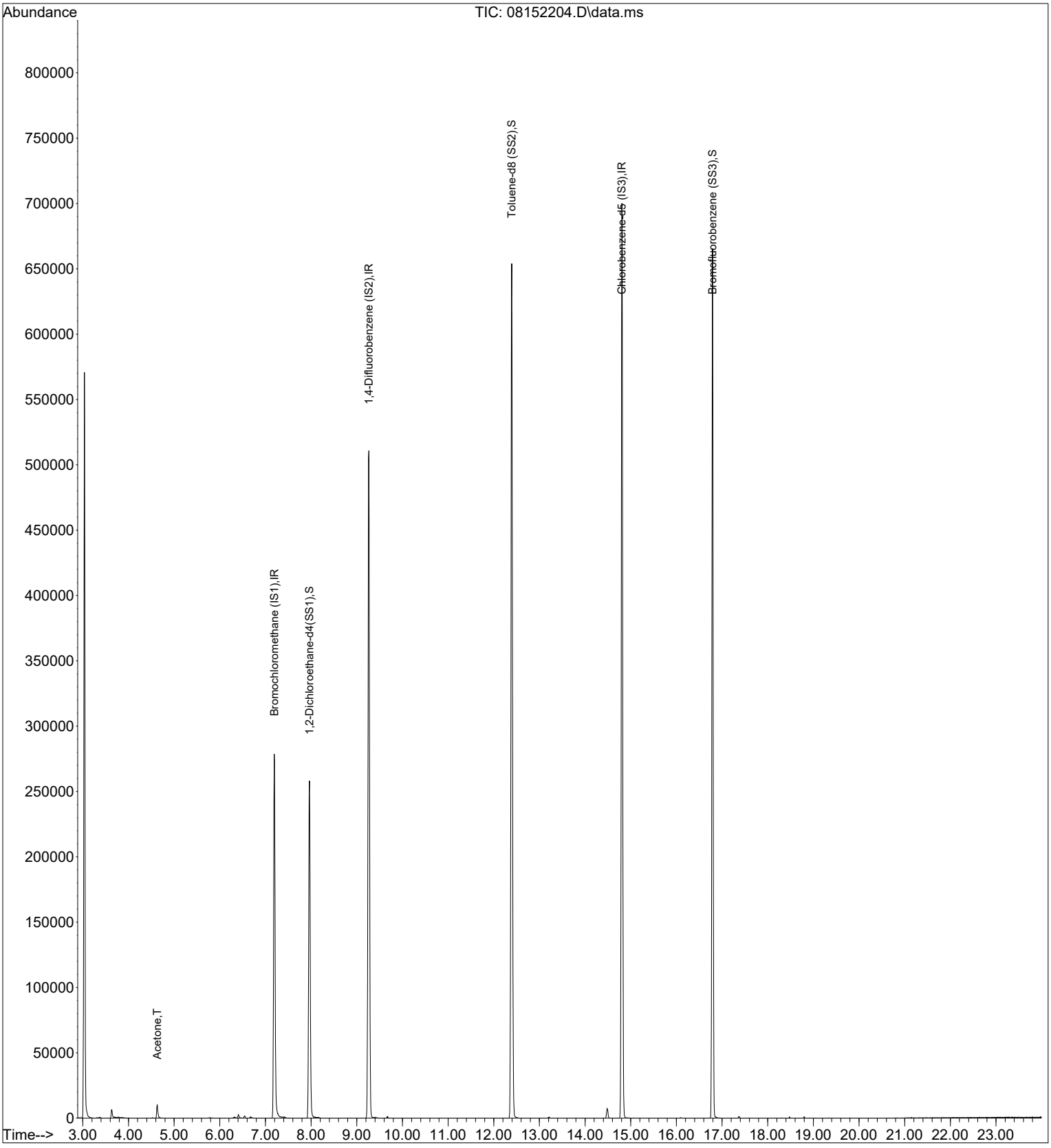
Quant Time: Aug 15 08:36:05 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	13.21	43	240	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	16.79	105	138	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	16.79	105	138	No Calib	#	
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.93	128	123	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_08\15\08152204.D Vial: 2
Acq On : 15 Aug 2022 6:12 Operator: SC
Sample : MB R9081522_1000mL Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:36:05 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122206.D Vial: 2
Acq On : 12 Aug 2022 1:15 Operator: SC
Sample : LCS R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 03:29:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/12/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	145025	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	587185	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	120135	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	273277	11.231	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.84%				
57) Toluene-d8 (SS2)	12.40	98	636547	12.625	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
73) Bromofluorobenzene (SS3)	16.79	174	290797	14.277	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.24%				
Target Compounds							Qvalue
2) Propene	3.25	42	61268	4.409	ng		96
3) Dichlorodifluoromethan...	3.32	85	180658	5.268	ng		99
4) Chloromethane	3.47	50	74698	4.736	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	88940	5.993	ng		99
6) Vinyl Chloride	3.65	62	86551	5.899	ng		99
7) 1,3-Butadiene	3.77	54	68639	6.490	ng		97
8) Bromomethane	3.98	94	58009	5.069	ng		96
9) Chloroethane	4.13	64	35194	4.444	ng		98
10) Ethanol	4.28	45	189618	20.664	ng		98
11) Acetonitrile	4.42	41	100333	3.719	ng		99
12) Acrolein	4.51	56	63669	9.125	ng		96
13) Acetone	4.60	58	191083	22.268	ng	#	83
14) Trichlorofluoromethane	4.72	101	180496	5.221	ng		99
15) 2-Propanol (Isopropanol)	4.82	45	350968	10.168	ng		96
16) Acrylonitrile	4.98	53	136383	9.301	ng		92
17) 1,1-Dichloroethene	5.23	96	68084	5.601	ng		91
18) 2-Methyl-2-Propanol (t...	5.29	59	363846	11.162	ng		97
19) Methylene Chloride	5.33	84	65310	4.927	ng		95
20) 3-Chloro-1-propene (Al...	5.43	41	104919	4.217	ng		96
21) Trichlorotrifluoroethane	5.54	151	82124	5.826	ng		91
22) Carbon Disulfide	5.57	76	428373	9.320	ng		99
23) trans-1,2-Dichloroethene	6.11	61	97077	5.011	ng		93
24) 1,1-Dichloroethane	6.30	63	114228	4.946	ng		99
25) Methyl tert-Butyl Ether	6.33	73	224643	5.270	ng		99
26) Vinyl Acetate	6.42	86	43301	28.289	ng	#	90
27) 2-Butanone (MEK)	6.63	72	73603	9.517	ng		99
28) cis-1,2-Dichloroethene	7.06	61	93802	4.897	ng		94
29) Diisopropyl Ether	7.25	87	107137	10.418	ng	#	50
30) Ethyl Acetate	7.25	61	64224	12.995	ng		93
31) n-Hexane	7.27	57	92512	4.848	ng		99
32) Chloroform	7.34	83	143351	5.187	ng		97
34) Tetrahydrofuran (THF)	7.72	72	72554	9.688	ng		93
35) Ethyl tert-Butyl Ether	7.79	87	166476	10.872	ng		93
36) 1,2-Dichloroethane	8.09	62	128232	5.408	ng		98
38) 1,1,1-Trichloroethane	8.37	97	153890	5.620	ng		97
39) Isopropyl Acetate	9.28	61	18523	No Calib			
40) 1-Butanol	9.18	56	192024	No Calib			
41) Benzene	8.87	78	243935	5.196	ng		100
42) Carbon Tetrachloride	9.04	117	134453	5.702	ng		99
43) Cyclohexane	9.18	84	186437	10.840	ng		92
44) tert-Amyl Methyl Ether	9.56	73	379300	11.027	ng		98
45) 1,2-Dichloropropane	9.83	63	53357	4.767	ng		99
46) Bromodichloromethane	10.05	83	117432	5.424	ng		98
47) Trichloroethene	10.12	130	89683	6.439	ng		99
48) 1,4-Dioxane	10.09	88	53811	6.350	ng		92
49) 2,2,4-Trimethylpentane...	10.20	57	224549	4.954	ng		98
50) Methyl Methacrylate	10.37	100	54105	12.358	ng	#	84

Data File : I:\MS09\DATA\2022_08\12\08122206.D Vial: 2
Acq On : 12 Aug 2022 1:15 Operator: SC
Sample : LCS R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 03:29:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

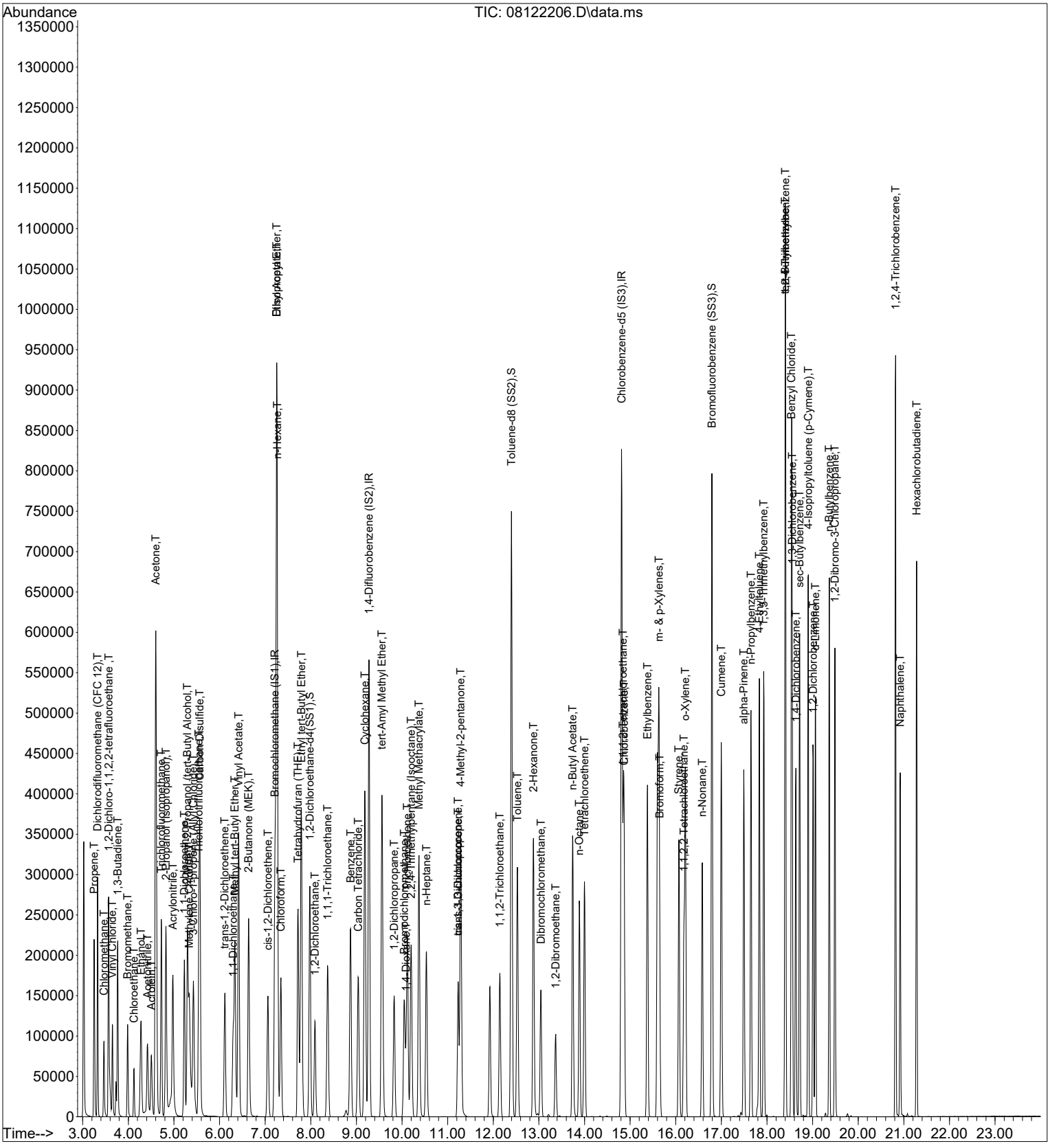
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	55274	5.153	ng		98
52) cis-1,3-Dichloropropene	11.23	75	106250	5.510	ng		100
53) 4-Methyl-2-pentanone	11.29	58	102862	10.471	ng		99
54) trans-1,3-Dichloropropene	11.23	75	106250	5.300	ng		100
55) 1,1,2-Trichloroethane	12.14	97	68823	5.428	ng		93
58) Toluene	12.53	91	286011	5.637	ng		99
59) 2-Hexanone	12.88	43	292515	10.444	ng		99
60) Dibromochloromethane	13.05	129	111166	6.324	ng		99
61) 1,2-Dibromoethane	13.37	107	85557	5.578	ng		97
62) n-Butyl Acetate	13.74	43	311390	10.447	ng		100
63) n-Octane	13.89	57	47358	5.308	ng		93
64) Tetrachloroethene	14.00	166	106440	6.045	ng		98
65) Chlorobenzene	14.87	112	197957	5.723	ng		99
66) Ethylbenzene	15.38	91	346318	5.781	ng		96
67) m- & p-Xylenes	15.63	91	579394	11.645	ng		97
68) Bromoform	15.65	173	101452	6.276	ng		99
69) Styrene	16.07	104	195668	5.777	ng		97
70) o-Xylene	16.21	91	288601	5.994	ng		97
71) n-Nonane	16.58	43	122883	5.103	ng		96
72) 1,1,2,2-Tetrachloroethane	16.18	83	109235	5.097	ng		95
74) Cumene	17.00	105	358459	5.960	ng		96
75) alpha-Pinene	17.49	93	171048	5.857	ng		99
76) n-Propylbenzene	17.65	91	416613	5.805	ng		96
77) 3-Ethyltoluene	17.00	105	358459	No Calib			
78) 4-Ethyltoluene	17.83	105	344336	5.992	ng		93
79) 1,3,5-Trimethylbenzene	17.93	105	310461	6.205	ng		94
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	22078	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	318307	6.156	ng		94
83) n-Decane	16.79	58	141	No Calib		#	
84) Benzyl Chloride	18.54	91	448047	11.078	ng		98
85) 1,3-Dichlorobenzene	18.55	146	185439	5.802	ng		99
86) 1,4-Dichlorobenzene	18.63	146	174679	5.381	ng		99
87) sec-Butylbenzene	18.72	105	391485	5.842	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	371943	6.477	ng		97
89) 1,2,3-Trimethylbenzene	18.41	105	318307	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	183303	5.935	ng		99
91) d-Limonene	19.06	68	87644	5.236	ng		90
92) 1,2-Dibromo-3-Chloropr...	19.49	157	150801	12.219	ng		91
93) n-Undecane	17.93	58	3751	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	264310	9.966	ng		99
95) Naphthalene	20.92	128	296485	4.756	ng		99
96) n-Dodecane	18.90	58	7724	No Calib		#	
97) Hexachlorobutadiene	21.28	225	118115	5.993	ng		100
98) Cyclohexanone	15.59	55	107	No Calib		#	
99) tert-Butylbenzene	18.40	119	317668	6.395	ng		100
100) n-Butylbenzene	19.37	91	315783	5.813	ng		98
101) 1,1,1,2-Tetrachloroethane	14.85	131	92424	6.315	ng		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122206.D Vial: 2
Acq On : 12 Aug 2022 1:15 Operator: SC
Sample : LCS R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 03:29:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122207.D Vial: 2
Acq On : 12 Aug 2022 1:47 Operator: SC
Sample : LCSD R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 08:42:42 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/12/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	145408	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	589591	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	119930	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	273144	11.196	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.60%				
57) Toluene-d8 (SS2)	12.40	98	633450	12.585	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.64%				
73) Bromofluorobenzene (SS3)	16.79	174	289702	14.247	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.00%				
Target Compounds							Qvalue
2) Propene	3.26	42	59221	4.251	ng		95
3) Dichlorodifluoromethan...	3.33	85	179607	5.224	ng		100
4) Chloromethane	3.47	50	74551	4.715	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	87940	5.910	ng		98
6) Vinyl Chloride	3.65	62	85543	5.814	ng		99
7) 1,3-Butadiene	3.77	54	69480	6.552	ng		96
8) Bromomethane	3.99	94	57384	5.001	ng		94
9) Chloroethane	4.13	64	34935m	4.400	ng		
10) Ethanol	4.28	45	189156	20.560	ng		100
11) Acetonitrile	4.42	41	100310	3.709	ng		98
12) Acrolein	4.51	56	63771	9.115	ng		96
13) Acetone	4.61	58	191330	22.238	ng	#	85
14) Trichlorofluoromethane	4.73	101	177493	5.120	ng		98
15) 2-Propanol (Isopropanol)	4.83	45	356868	10.312	ng		96
16) Acrylonitrile	4.98	53	136568	9.289	ng		93
17) 1,1-Dichloroethene	5.23	96	67195	5.513	ng		92
18) 2-Methyl-2-Propanol (t...	5.30	59	364664	11.157	ng		97
19) Methylene Chloride	5.34	84	64971	4.889	ng		94
20) 3-Chloro-1-propene (Al...	5.43	41	107122	4.294	ng		95
21) Trichlorotrifluoroethane	5.55	151	81720	5.782	ng		91
22) Carbon Disulfide	5.57	76	426711	9.260	ng		99
23) trans-1,2-Dichloroethene	6.12	61	96643	4.976	ng		94
24) 1,1-Dichloroethane	6.30	63	112811	4.872	ng		99
25) Methyl tert-Butyl Ether	6.34	73	223524	5.230	ng		99
26) Vinyl Acetate	6.42	86	44835	29.214	ng	#	85
27) 2-Butanone (MEK)	6.64	72	74815	9.648	ng		96
28) cis-1,2-Dichloroethene	7.06	61	93752	4.882	ng		93
29) Diisopropyl Ether	7.25	87	106198	10.300	ng	#	51
30) Ethyl Acetate	7.26	61	64869	13.091	ng		95
31) n-Hexane	7.27	57	91346	4.775	ng		99
32) Chloroform	7.34	83	142409	5.139	ng		96
34) Tetrahydrofuran (THF)	7.72	72	72285	9.627	ng		93
35) Ethyl tert-Butyl Ether	7.79	87	167503	10.910	ng		93
36) 1,2-Dichloroethane	8.09	62	128761	5.416	ng		98
38) 1,1,1-Trichloroethane	8.37	97	153380	5.579	ng		98
39) Isopropyl Acetate	9.28	61	18670	No Calib			
40) 1-Butanol	9.18	56	194848	No Calib			
41) Benzene	8.87	78	245536	5.209	ng		99
42) Carbon Tetrachloride	9.04	117	135286	5.714	ng		100
43) Cyclohexane	9.19	84	186253	10.785	ng		93
44) tert-Amyl Methyl Ether	9.56	73	383857	11.114	ng		98
45) 1,2-Dichloropropane	9.83	63	52424	4.665	ng		100
46) Bromodichloromethane	10.05	83	118013	5.429	ng		98
47) Trichloroethene	10.12	130	89897	6.428	ng		99
48) 1,4-Dioxane	10.09	88	53889	6.333	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	225631	4.958	ng		98
50) Methyl Methacrylate	10.37	100	54035	12.292	ng	#	83

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122207.D Vial: 2
Acq On : 12 Aug 2022 1:47 Operator: SC
Sample : LCSD R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 08:42:42 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

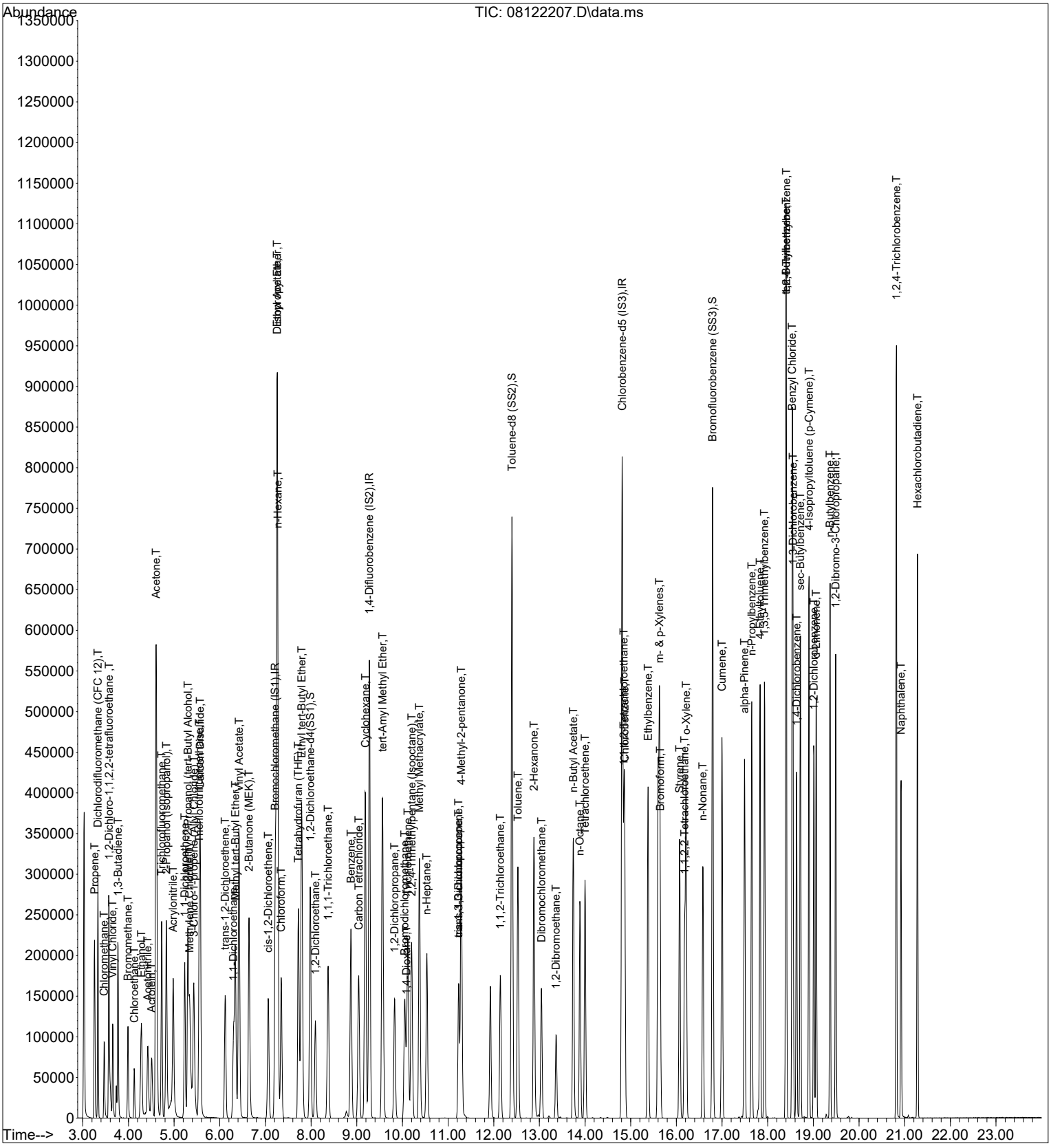
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	54517	5.062	ng		98
52) cis-1,3-Dichloropropene	11.23	75	106269	5.488	ng		99
53) 4-Methyl-2-pentanone	11.29	58	102954	10.438	ng		98
54) trans-1,3-Dichloropropene	11.23	75	106269	5.279	ng		99
55) 1,1,2-Trichloroethane	12.14	97	68574	5.386	ng		92
58) Toluene	12.53	91	283909	5.605	ng		100
59) 2-Hexanone	12.88	43	293982	10.514	ng		100
60) Dibromochloromethane	13.05	129	111407	6.349	ng		99
61) 1,2-Dibromoethane	13.36	107	85669	5.595	ng		98
62) n-Butyl Acetate	13.74	43	312746	10.511	ng		99
63) n-Octane	13.89	57	47142	5.292	ng		94
64) Tetrachloroethene	14.00	166	105590	6.007	ng		97
65) Chlorobenzene	14.87	112	198137	5.738	ng		100
66) Ethylbenzene	15.38	91	345911	5.784	ng		97
67) m- & p-Xylenes	15.62	91	577187	11.620	ng		96
68) Bromoform	15.65	173	100569	6.232	ng		99
69) Styrene	16.07	104	194885	5.764	ng		97
70) o-Xylene	16.21	91	286352	5.957	ng		97
71) n-Nonane	16.58	43	121721	5.063	ng		95
72) 1,1,2,2-Tetrachloroethane	16.18	83	107955	5.046	ng		95
74) Cumene	17.00	105	357817	5.959	ng		96
75) alpha-Pinene	17.49	93	174597	5.989	ng		99
76) n-Propylbenzene	17.65	91	414537	5.786	ng		96
77) 3-Ethyltoluene	17.00	105	357817	No Calib			
78) 4-Ethyltoluene	17.83	105	349447	6.091	ng		95
79) 1,3,5-Trimethylbenzene	17.93	105	307104	6.148	ng		95
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	22382	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	316285	6.127	ng		94
83) n-Decane	16.99	58	1765	No Calib		#	
84) Benzyl Chloride	18.54	91	458729	11.361	ng		98
85) 1,3-Dichlorobenzene	18.55	146	182243	5.712	ng		98
86) 1,4-Dichlorobenzene	18.63	146	175525	5.417	ng		99
87) sec-Butylbenzene	18.72	105	390934	5.844	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	366326	6.390	ng		97
89) 1,2,3-Trimethylbenzene	18.41	105	316285	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	182475	5.919	ng		98
91) d-Limonene	19.06	68	89125	5.334	ng		92
92) 1,2-Dibromo-3-Chloropr...	19.49	157	149992	12.175	ng		92
93) n-Undecane	17.94	58	3922	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	263528	9.953	ng		99
95) Naphthalene	20.92	128	296141	4.759	ng		99
96) n-Dodecane	18.90	58	7318	No Calib		#	
97) Hexachlorobutadiene	21.28	225	117708	5.983	ng		100
98) Cyclohexanone	15.62	55	129	No Calib		#	
99) tert-Butylbenzene	18.40	119	316209	6.376	ng		100
100) n-Butylbenzene	19.37	91	312461	5.762	ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	91264	6.247	ng		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

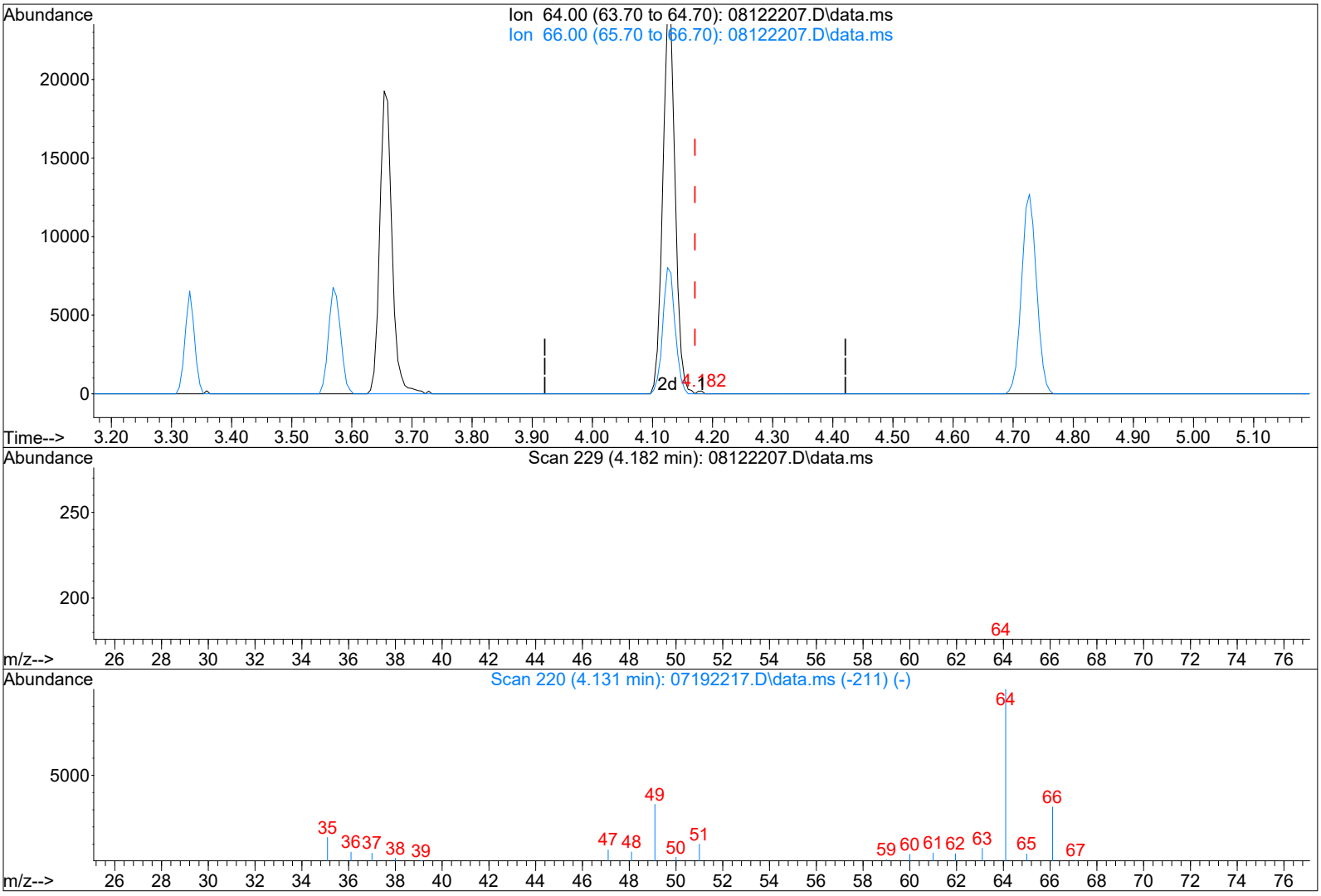
Data File : I:\MS09\DATA\2022_08\12\08122207.D Vial: 2
Acq On : 12 Aug 2022 1:47 Operator: SC
Sample : LCSD R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 08:42:42 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2022_08\12\08122207.D Vial: 2
Acq On : 12 Aug 2022 1:47 Operator: SC
Sample : LCSD R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 03:29:03 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 08122207.D\data.ms

(9) Chloroethane (T)

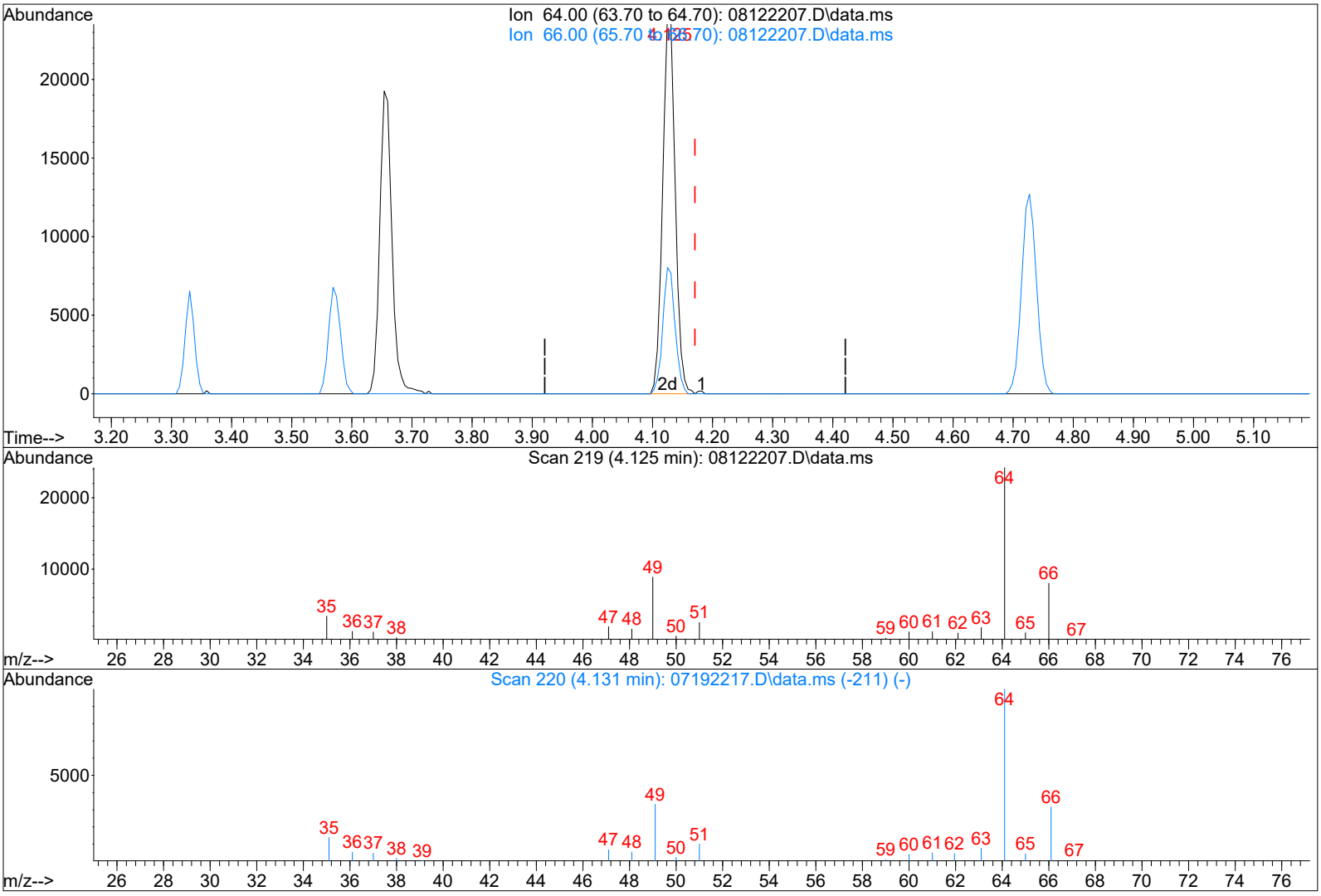
4.182min (+0.011) 0.01ng

response 114

Ion	Exp%	Act%
64.00	100	100
66.00	31.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS09\DATA\2022_08\12\08122207.D Vial: 2
Acq On : 12 Aug 2022 1:47 Operator: SC
Sample : LCSD R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 12 03:29:03 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 08122207.D\data.ms

(9) Chloroethane (T)

4.125min (-0.046) 4.40ng m

response 34935

Ion	Exp%	Act%
64.00	100	100
66.00	31.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

MP

8/12/22

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152205.D Vial: 2
Acq On : 15 Aug 2022 6:44 Operator: SC
Sample : LCS R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:36:39 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	133071	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	543507	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	109356	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	260799	11.681	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.44%				
57) Toluene-d8 (SS2)	12.40	98	574365	12.514	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.08%				
73) Bromofluorobenzene (SS3)	16.79	174	257467	13.886	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.12%				
Target Compounds							Qvalue
2) Propene	3.26	42	54075	4.241	ng		93
3) Dichlorodifluoromethan...	3.33	85	174503	5.546	ng		99
4) Chloromethane	3.47	50	69750	4.820	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	84258	6.187	ng		99
6) Vinyl Chloride	3.65	62	77976	5.791	ng		100
7) 1,3-Butadiene	3.77	54	64245	6.620	ng		98
8) Bromomethane	3.99	94	53193	5.066	ng		95
9) Chloroethane	4.13	64	32524	4.476	ng		100
10) Ethanol	4.29	45	175258	20.815	ng		99
11) Acetonitrile	4.43	41	91528	3.698	ng		98
12) Acrolein	4.51	56	56684	8.854	ng		93
13) Acetone	4.61	58	176788	22.453	ng	#	76
14) Trichlorofluoromethane	4.73	101	174281	5.494	ng		97
15) 2-Propanol (Isopropanol)	4.83	45	332465	10.497	ng		94
16) Acrylonitrile	4.98	53	125606	9.336	ng		93
17) 1,1-Dichloroethene	5.23	96	62977	5.646	ng		93
18) 2-Methyl-2-Propanol (t...	5.31	59	340996	11.400	ng		97
19) Methylene Chloride	5.34	84	60043	4.937	ng		97
20) 3-Chloro-1-propene (Al...	5.43	41	97567	4.273	ng		96
21) Trichlorotrifluoroethane	5.55	151	78782	6.091	ng		89
22) Carbon Disulfide	5.57	76	395016	9.367	ng		99
23) trans-1,2-Dichloroethene	6.12	61	90297	5.080	ng		93
24) 1,1-Dichloroethane	6.31	63	106174	5.010	ng		100
25) Methyl tert-Butyl Ether	6.34	73	211544	5.409	ng		98
26) Vinyl Acetate	6.42	86	40019	28.494	ng	#	92
27) 2-Butanone (MEK)	6.64	72	67356	9.491	ng		97
28) cis-1,2-Dichloroethene	7.06	61	87710	4.991	ng		93
29) Diisopropyl Ether	7.26	87	100833	10.686	ng	#	48
30) Ethyl Acetate	7.26	61	58552	12.912	ng		92
31) n-Hexane	7.27	57	84343	4.817	ng		99
32) Chloroform	7.34	83	136091	5.367	ng		97
34) Tetrahydrofuran (THF)	7.72	72	67122	9.768	ng		92
35) Ethyl tert-Butyl Ether	7.79	87	155789	11.088	ng		92
36) 1,2-Dichloroethane	8.09	62	123390	5.671	ng		99
38) 1,1,1-Trichloroethane	8.37	97	149121	5.884	ng		97
39) Isopropyl Acetate	9.28	61	17873	No Calib		#	
40) 1-Butanol	9.19	56	177030	No Calib			
41) Benzene	8.87	78	226294	5.208	ng		99
42) Carbon Tetrachloride	9.04	117	132188	6.057	ng		98
43) Cyclohexane	9.18	84	172609	10.842	ng		92
44) tert-Amyl Methyl Ether	9.56	73	355830	11.176	ng		98
45) 1,2-Dichloropropane	9.83	63	48585	4.690	ng		100
46) Bromodichloromethane	10.05	83	111896	5.584	ng		97
47) Trichloroethene	10.12	130	84530	6.556	ng		98
48) 1,4-Dioxane	10.09	88	50541	6.443	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	206306	4.918	ng		95
50) Methyl Methacrylate	10.38	100	50464	12.453	ng	#	82

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152205.D Vial: 2
Acq On : 15 Aug 2022 6:44 Operator: SC
Sample : LCS R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:36:39 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

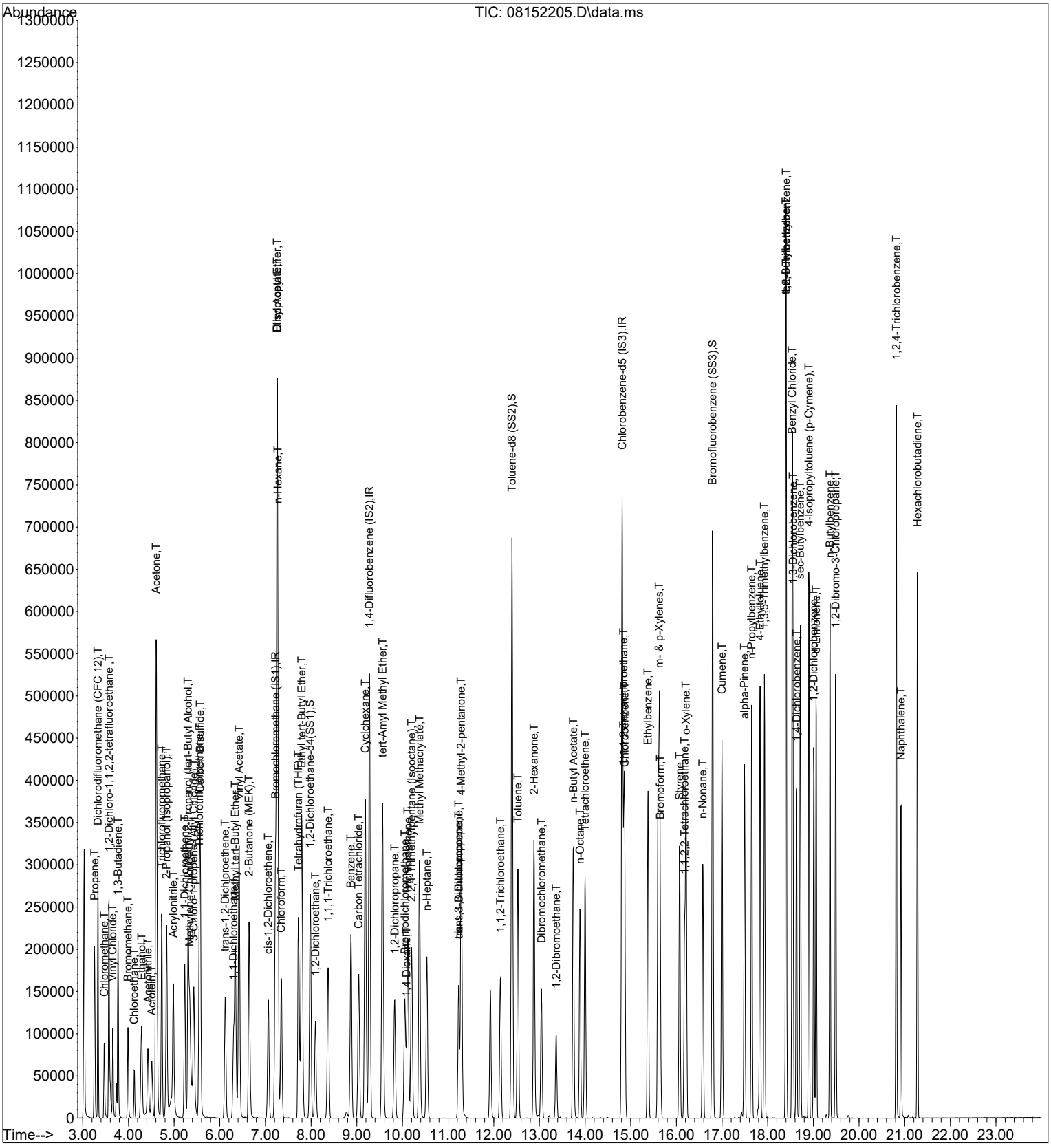
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	50267	5.063	ng		99
52) cis-1,3-Dichloropropene	11.23	75	97394	5.456	ng		99
53) 4-Methyl-2-pentanone	11.29	58	95110	10.460	ng		97
54) trans-1,3-Dichloropropene	11.23	75	97394	5.249	ng		99
55) 1,1,2-Trichloroethane	12.15	97	64396	5.487	ng		91
58) Toluene	12.53	91	265498	5.749	ng		100
59) 2-Hexanone	12.88	43	277048	10.866	ng		96
60) Dibromochloromethane	13.05	129	105931	6.620	ng		99
61) 1,2-Dibromoethane	13.37	107	81021	5.803	ng		98
62) n-Butyl Acetate	13.74	43	289769	10.680	ng		100
63) n-Octane	13.89	57	43241	5.324	ng		93
64) Tetrachloroethene	14.00	166	101746	6.348	ng		98
65) Chlorobenzene	14.87	112	185313	5.885	ng		100
66) Ethylbenzene	15.38	91	324545	5.951	ng		97
67) m- & p-Xylenes	15.62	91	547135	12.080	ng		97
68) Bromoform	15.65	173	97397	6.619	ng		99
69) Styrene	16.07	104	180063	5.840	ng		98
70) o-Xylene	16.21	91	270168	6.164	ng		97
71) n-Nonane	16.58	43	112611	5.137	ng		95
72) 1,1,2,2-Tetrachloroethane	16.18	83	100802	5.167	ng		96
74) Cumene	17.00	105	338485	6.182	ng		96
75) alpha-Pinene	17.49	93	162437	6.110	ng		100
76) n-Propylbenzene	17.65	91	393237	6.020	ng		97
77) 3-Ethyltoluene	17.00	105	338485	No Calib			
78) 4-Ethyltoluene	17.83	105	323925	6.192	ng		95
79) 1,3,5-Trimethylbenzene	17.93	105	290072	6.369	ng		94
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	20488	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	296613	6.302	ng		94
83) n-Decane	16.80	58	121	No Calib		#	
84) Benzyl Chloride	18.54	91	410705	11.156	ng		98
85) 1,3-Dichlorobenzene	18.55	146	171381	5.891	ng		99
86) 1,4-Dichlorobenzene	18.63	146	161921	5.480	ng		98
87) sec-Butylbenzene	18.71	105	367580	6.026	ng		99
88) 4-Isopropyltoluene (p-...	18.90	119	347752	6.652	ng		98
89) 1,2,3-Trimethylbenzene	18.41	105	296613	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	170514	6.066	ng		100
91) d-Limonene	19.06	68	80919	5.311	ng		89
92) 1,2-Dibromo-3-Chloropr...	19.49	157	137305	12.222	ng		94
93) n-Undecane	17.92	58	4489	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	241310	9.995	ng		100
95) Naphthalene	20.92	128	262040	4.618	ng		99
96) n-Dodecane	18.90	58	5088	No Calib		#	
97) Hexachlorobutadiene	21.28	225	110984	6.186	ng		99
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	298751	6.607	ng		99
100) n-Butylbenzene	19.37	91	290512	5.875	ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	88279	6.626	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152205.D Vial: 2
Acq On : 15 Aug 2022 6:44 Operator: SC
Sample : LCS R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:36:39 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152206.D Vial: 2
Acq On : 15 Aug 2022 7:16 Operator: SC
Sample : LCSD R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:39:03 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	133426	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	546458	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	108131	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	260491	11.636	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 93.12%				
57) Toluene-d8 (SS2)	12.40	98	576906	12.712	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.68%				
73) Bromofluorobenzene (SS3)	16.79	174	253367	13.820	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 110.56%				
Target Compounds							Qvalue
2) Propene	3.26	42	55223	4.320	ng		93
3) Dichlorodifluoromethan...	3.33	85	174928	5.545	ng		99
4) Chloromethane	3.47	50	70997	4.893	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	85646	6.272	ng		99
6) Vinyl Chloride	3.65	62	80479	5.961	ng		100
7) 1,3-Butadiene	3.77	54	66205	6.804	ng		98
8) Bromomethane	3.99	94	54082	5.136	ng		94
9) Chloroethane	4.13	64	33479	4.595	ng		100
10) Ethanol	4.28	45	178760	21.175	ng		100
11) Acetonitrile	4.43	41	94021	3.788	ng		98
12) Acrolein	4.51	56	58691	9.143	ng		99
13) Acetone	4.61	58	181822	23.031	ng	#	78
14) Trichlorofluoromethane	4.73	101	175550	5.519	ng		98
15) 2-Propanol (Isopropanol)	4.84	45	342252	10.777	ng		95
16) Acrylonitrile	4.98	53	126612	9.385	ng		93
17) 1,1-Dichloroethene	5.23	96	63747	5.700	ng		94
18) 2-Methyl-2-Propanol (t...	5.31	59	350962	11.702	ng		97
19) Methylene Chloride	5.34	84	61510	5.044	ng		94
20) 3-Chloro-1-propene (Al...	5.43	41	99971	4.367	ng		96
21) Trichlorotrifluoroethane	5.55	151	79375	6.120	ng		90
22) Carbon Disulfide	5.57	76	402909	9.528	ng		99
23) trans-1,2-Dichloroethene	6.12	61	92556	5.193	ng		95
24) 1,1-Dichloroethane	6.31	63	109014	5.131	ng		100
25) Methyl tert-Butyl Ether	6.34	73	215725	5.501	ng		99
26) Vinyl Acetate	6.43	86	41947	29.787	ng	#	91
27) 2-Butanone (MEK)	6.64	72	70451	9.901	ng		98
28) cis-1,2-Dichloroethene	7.06	61	90125	5.114	ng		95
29) Diisopropyl Ether	7.26	87	101634	10.742	ng	#	51
30) Ethyl Acetate	7.26	61	60591	13.326	ng		93
31) n-Hexane	7.27	57	86903	4.950	ng		99
32) Chloroform	7.34	83	137443	5.406	ng		96
34) Tetrahydrofuran (THF)	7.73	72	68959	10.009	ng		91
35) Ethyl tert-Butyl Ether	7.79	87	160858	11.418	ng		92
36) 1,2-Dichloroethane	8.09	62	126191	5.785	ng		98
38) 1,1,1-Trichloroethane	8.37	97	150448	5.904	ng		97
39) Isopropyl Acetate	9.28	61	18094	No Calib			
40) 1-Butanol	9.18	56	181590	No Calib			
41) Benzene	8.87	78	231178	5.292	ng		100
42) Carbon Tetrachloride	9.04	117	134624	6.135	ng		98
43) Cyclohexane	9.18	84	177293	11.076	ng		92
44) tert-Amyl Methyl Ether	9.57	73	371145	11.595	ng		98
45) 1,2-Dichloropropane	9.83	63	50439	4.842	ng		98
46) Bromodichloromethane	10.05	83	114932	5.705	ng		98
47) Trichloroethene	10.12	130	86506	6.673	ng		100
48) 1,4-Dioxane	10.09	88	51086	6.477	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	210392	4.988	ng		94
50) Methyl Methacrylate	10.37	100	51874	12.732	ng	#	83

Data File : I:\MS09\DATA\2022_08\15\08152206.D Vial: 2
Acq On : 15 Aug 2022 7:16 Operator: SC
Sample : LCSD R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:39:03 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

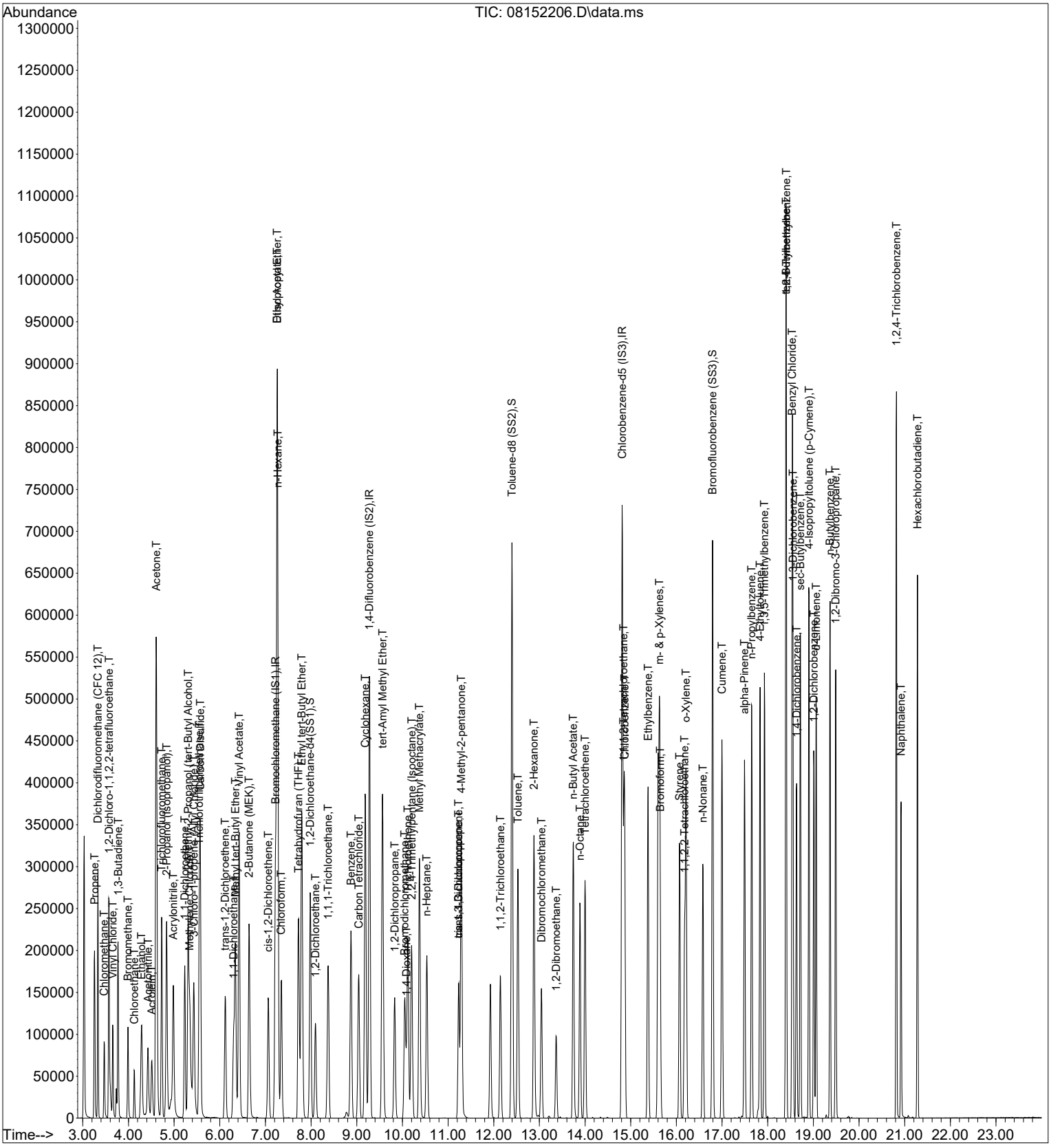
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	51021	5.111	ng		98
52) cis-1,3-Dichloropropene	11.23	75	100459	5.598	ng		99
53) 4-Methyl-2-pentanone	11.29	58	96340	10.538	ng		95
54) trans-1,3-Dichloropropene	11.23	75	100459	5.385	ng		99
55) 1,1,2-Trichloroethane	12.15	97	65693	5.567	ng		91
58) Toluene	12.53	91	271332	5.942	ng		100
59) 2-Hexanone	12.88	43	285363	11.319	ng		96
60) Dibromochloromethane	13.05	129	107852	6.817	ng		99
61) 1,2-Dibromoethane	13.37	107	81722	5.919	ng		98
62) n-Butyl Acetate	13.74	43	299181	11.152	ng		99
63) n-Octane	13.89	57	44582	5.551	ng		93
64) Tetrachloroethene	14.00	166	103410	6.525	ng		98
65) Chlorobenzene	14.87	112	188691	6.060	ng		100
66) Ethylbenzene	15.38	91	332536	6.167	ng		97
67) m- & p-Xylenes	15.62	91	555158	12.396	ng		97
68) Bromoform	15.65	173	98303	6.757	ng		99
69) Styrene	16.07	104	185282	6.078	ng		98
70) o-Xylene	16.21	91	276853	6.388	ng		97
71) n-Nonane	16.58	43	116715	5.385	ng		97
72) 1,1,2,2-Tetrachloroethane	16.18	83	102343	5.305	ng		96
74) Cumene	17.00	105	344077	6.356	ng		96
75) alpha-Pinene	17.49	93	167827	6.384	ng		100
76) n-Propylbenzene	17.65	91	399971	6.192	ng		97
77) 3-Ethyltoluene	17.00	105	344077	No Calib			
78) 4-Ethyltoluene	17.83	105	334062	6.459	ng		96
79) 1,3,5-Trimethylbenzene	17.93	105	295030	6.551	ng		95
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.50	105	21692	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	301924	6.487	ng		94
83) n-Decane	17.00	58	1192	No Calib		#	
84) Benzyl Chloride	18.54	91	428908	11.782	ng		98
85) 1,3-Dichlorobenzene	18.55	146	175119	6.088	ng		99
86) 1,4-Dichlorobenzene	18.63	146	165686	5.671	ng		98
87) sec-Butylbenzene	18.72	105	373330	6.190	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	349427	6.760	ng		97
89) 1,2,3-Trimethylbenzene	18.41	105	301924	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	172333	6.200	ng		98
91) d-Limonene	19.06	68	83784	5.561	ng		89
92) 1,2-Dibromo-3-Chloropr...	19.49	157	139334	12.544	ng		93
93) n-Undecane	17.92	58	4658	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	240199	10.062	ng		99
95) Naphthalene	20.92	128	264749	4.719	ng		99
96) n-Dodecane	18.90	58	4476	No Calib		#	
97) Hexachlorobutadiene	21.28	225	110244	6.215	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	302478	6.765	ng		100
100) n-Butylbenzene	19.37	91	297431	6.083	ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	89114	6.765	ng		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152206.D Vial: 2
Acq On : 15 Aug 2022 7:16 Operator: SC
Sample : LCSD R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07202205 (8/19)

Quant Time: Aug 15 08:39:03 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122230.D Vial: 3
Acq On : 12 Aug 2022 18:41 Operator: SC
Sample : P2203433-004dup (1000mL) Inst : MS09
Misc : S35-07192201

8/15/22

Quant Time: Aug 15 08:30:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	142922	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	587925	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	117914	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	270549	11.282	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.24%				
57) Toluene-d8 (SS2)	12.39	98	628237	12.695	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
73) Bromofluorobenzene (SS3)	16.79	174	272350	13.623	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%				
Target Compounds							Qvalue
2) Propene	0.00	42	0	N.D.	d		
3) Dichlorodifluoromethan...	3.34	85	49698	1.471	ng		98
4) Chloromethane	3.48	50	2073	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	847	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.26	45	18377	2.032	ng		80
11) Acetonitrile	4.42	41	2645	N.D.			
12) Acrolein	4.51	56	1358	N.D.			
13) Acetone	4.60	58	46867	5.542	ng	#	74
14) Trichlorofluoromethane	4.72	101	64394	1.890	ng		99
15) 2-Propanol (Isopropanol)	4.81	45	289524	8.511	ng		91
16) Acrylonitrile	5.00	53	710	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	5.30	59	604	N.D.			
19) Methylene Chloride	5.32	84	1196	N.D.			
20) 3-Chloro-1-propene (Al...	5.36	41	470	N.D.			
21) Trichlorotrifluoroethane	5.54	151	18085	1.302	ng		90
22) Carbon Disulfide	5.57	76	4933	N.D.			
23) trans-1,2-Dichloroethene	6.28	61	122	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	6.36	73	344	N.D.			
26) Vinyl Acetate	6.45	86	217	N.D.			
27) 2-Butanone (MEK)	6.64	72	7280	0.955	ng	#	74
28) cis-1,2-Dichloroethene	7.04	61	504	N.D.			
29) Diisopropyl Ether	7.27	87	624	N.D.			
30) Ethyl Acetate	7.25	61	3302	0.678	ng		79
31) n-Hexane	7.27	57	74133	3.942	ng		98
32) Chloroform	7.32	83	769	N.D.			
34) Tetrahydrofuran (THF)	7.73	72	7556	1.024	ng		97
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.08	62	506	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	9.26	61	18585	No Calib			
40) 1-Butanol	9.18	56	3636	No Calib			
41) Benzene	8.86	78	17544	N.D.			
42) Carbon Tetrachloride	9.03	117	6086	N.D.			
43) Cyclohexane	9.18	84	3701	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	10.11	130	4523	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	10.19	57	8504	N.D.			
50) Methyl Methacrylate	10.55	100	782	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122230.D Vial: 3
Acq On : 12 Aug 2022 18:41 Operator: SC
Sample : P2203433-004dup (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:30:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

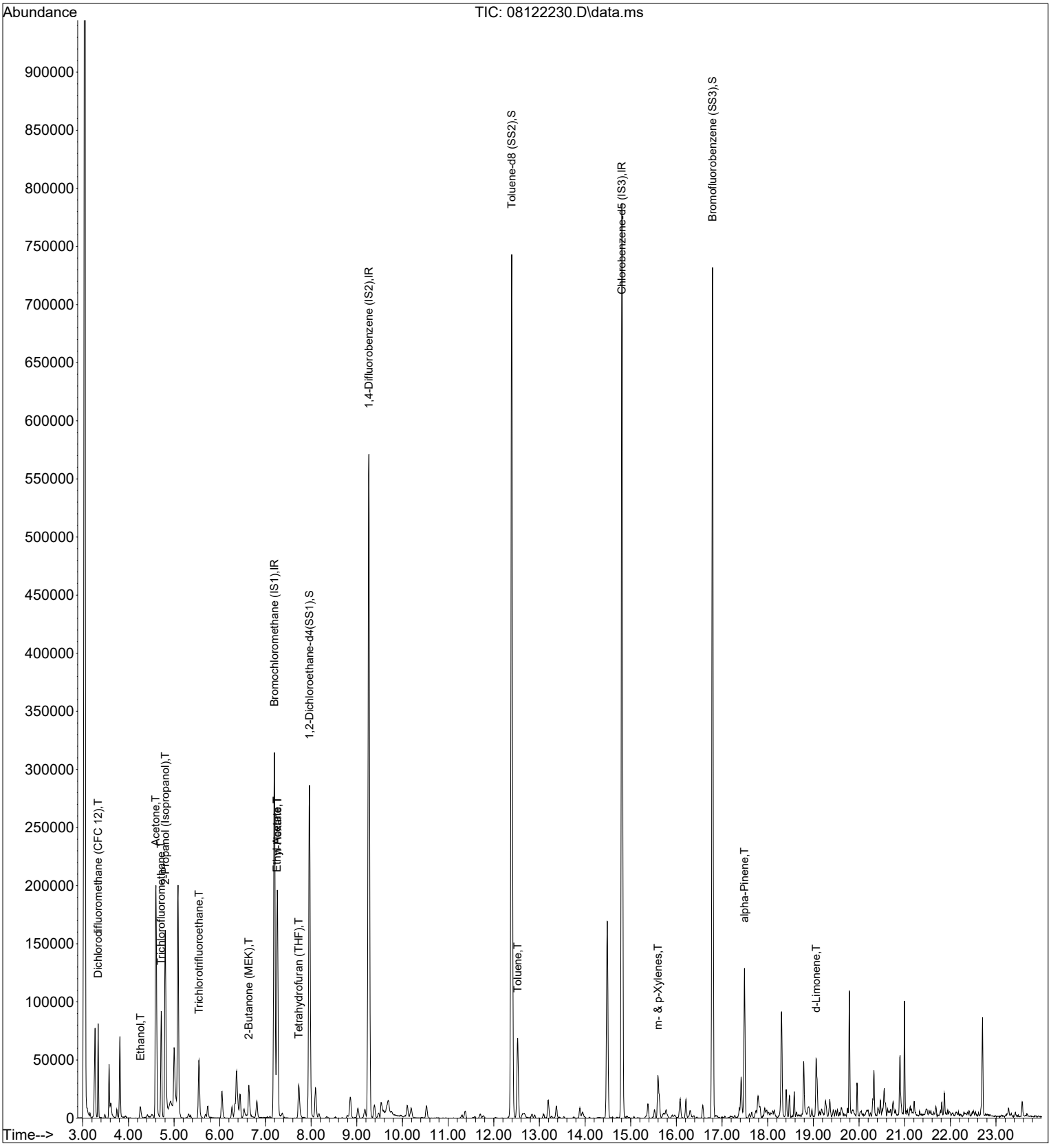
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.52	71	2770	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.30	58	437	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.52	91	59598	1.197 ng		98
59) 2-Hexanone	12.89	43	2286	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.74	43	1384	N.D.		
63) n-Octane	13.89	57	1178	N.D.		
64) Tetrachloroethene	13.99	166	124	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.37	91	11017	N.D.		
67) m- & p-Xylenes	15.60	91	33075	0.677 ng		94
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.07	104	3903	N.D.		
70) o-Xylene	16.21	91	11448	N.D.		
71) n-Nonane	16.58	43	4579	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.00	105	1103	N.D.		
75) alpha-Pinene	17.49	93	50915	1.776 ng		99
76) n-Propylbenzene	17.65	91	4140	N.D.		
77) 3-Ethyltoluene	17.00	105	1103	No Calib		
78) 4-Ethyltoluene	17.83	105	4604	N.D.		
79) 1,3,5-Trimethylbenzene	17.93	105	3073	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.49	105	6401	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.41	105	12368	N.D.		
83) n-Decane	16.80	58	185	No Calib	#	
84) Benzyl Chloride	18.54	91	160	N.D.		
85) 1,3-Dichlorobenzene	18.63	146	2133	N.D.		
86) 1,4-Dichlorobenzene	18.63	146	2133	N.D.		
87) sec-Butylbenzene	18.72	105	563	N.D.		
88) 4-Isopropyltoluene (p-...	18.91	119	4313	N.D.		
89) 1,2,3-Trimethylbenzene	18.41	105	12368	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.06	68	8022	0.488 ng	#	1
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.08	58	678	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	20.92	128	5296	N.D.		
96) n-Dodecane	18.79	58	843	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.60	55	139	No Calib	#	
99) tert-Butylbenzene	18.41	119	1434	N.D.		
100) n-Butylbenzene	19.37	91	2911	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122230.D Vial: 3
Acq On : 12 Aug 2022 18:41 Operator: SC
Sample : P2203433-004dup (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:30:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122230.D Vial: 3
Acq On : 12 Aug 2022 18:41 Operator: SC
Sample : P2203433-004dup (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:30:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

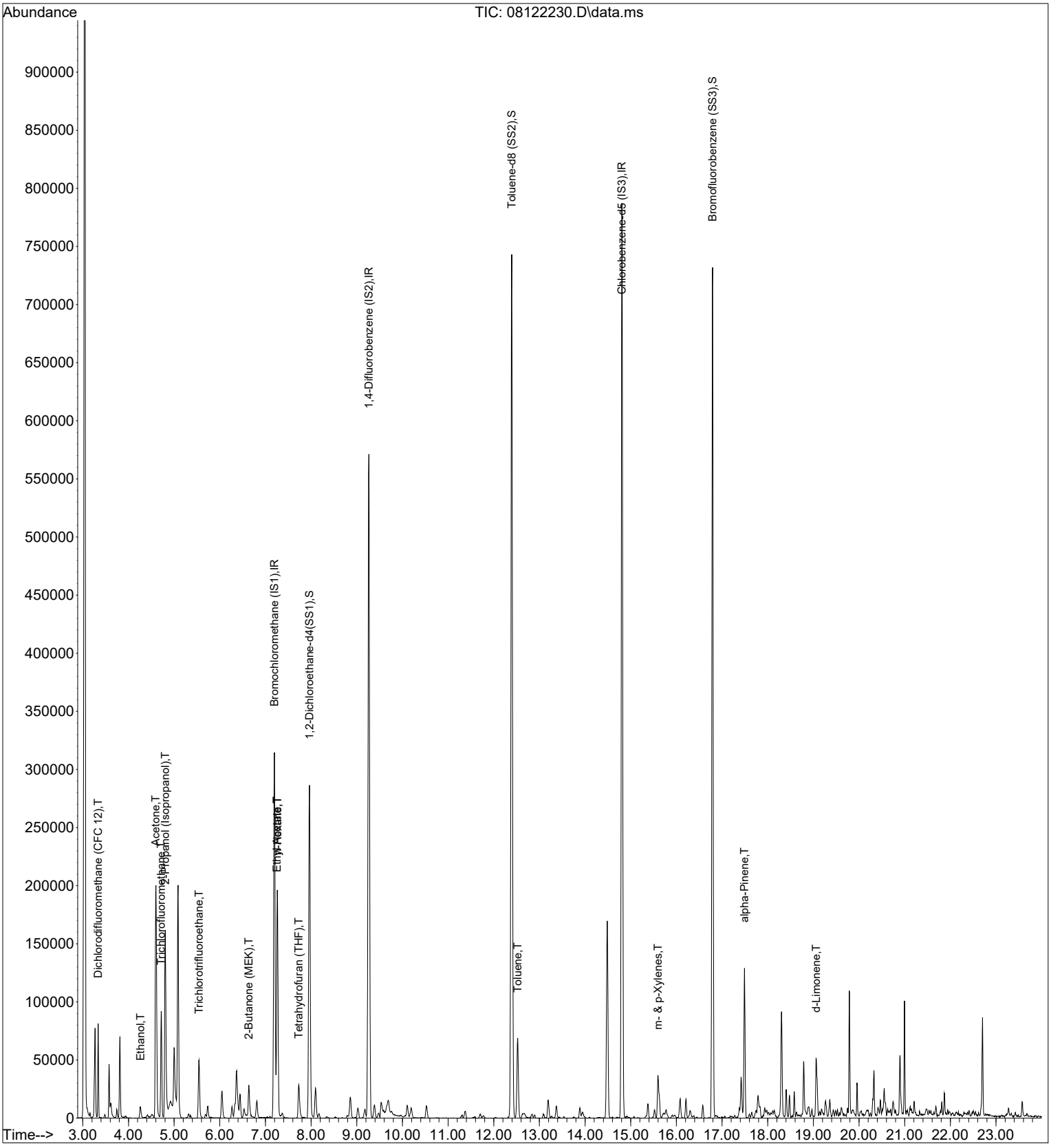
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	142922	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	587925	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	117914	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	270549	11.282	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.24%				
57) Toluene-d8 (SS2)	12.39	98	628237	12.695	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.52%				
73) Bromofluorobenzene (SS3)	16.79	174	272350	13.623	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.34	85	49698	1.471	ng		98
10) Ethanol	4.26	45	18377	2.032	ng		80
13) Acetone	4.60	58	46867	5.542	ng	#	74
14) Trichlorofluoromethane	4.72	101	64394	1.890	ng		99
15) 2-Propanol (Isopropanol)	4.81	45	289524	8.511	ng		91
21) Trichlorotrifluoroethane	5.54	151	18085	1.302	ng		90
27) 2-Butanone (MEK)	6.64	72	7280	0.955	ng	#	74
30) Ethyl Acetate	7.25	61	3302	0.678	ng		79
31) n-Hexane	7.27	57	74133	3.942	ng		98
34) Tetrahydrofuran (THF)	7.73	72	7556	1.024	ng		97
58) Toluene	12.52	91	59598	1.197	ng		98
67) m- & p-Xylenes	15.60	91	33075	0.677	ng		94
75) alpha-Pinene	17.49	93	50915	1.776	ng		99
91) d-Limonene	19.06	68	8022	0.488	ng	#	1

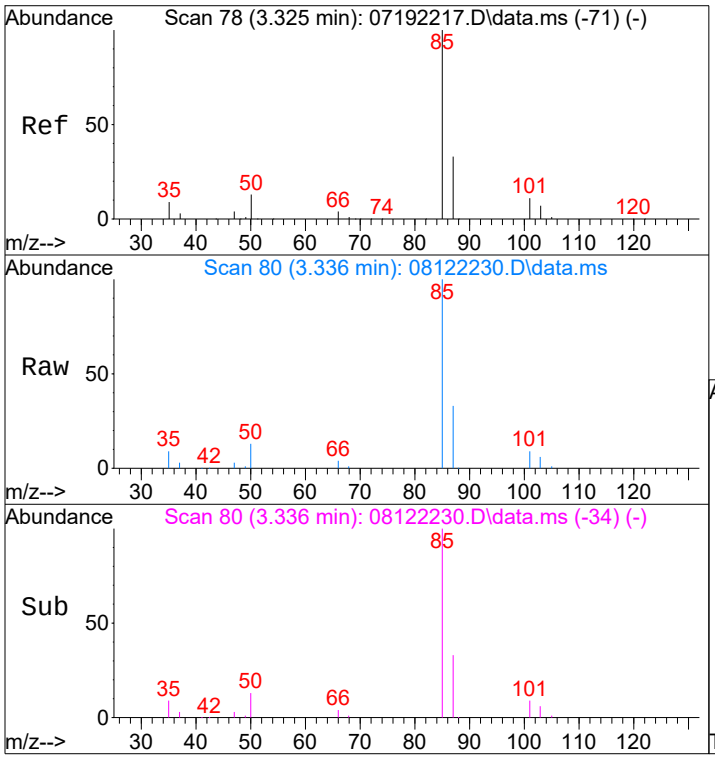
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122230.D Vial: 3
Acq On : 12 Aug 2022 18:41 Operator: SC
Sample : P2203433-004dup (1000mL) Inst : MS09
Misc : S35-07192201

Quant Time: Aug 15 08:30:01 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

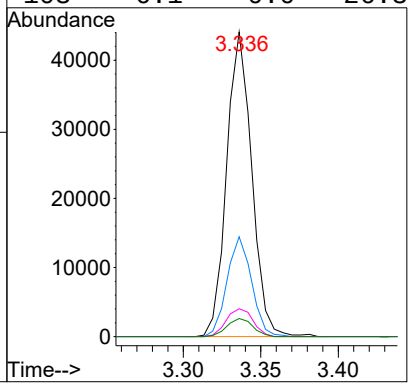


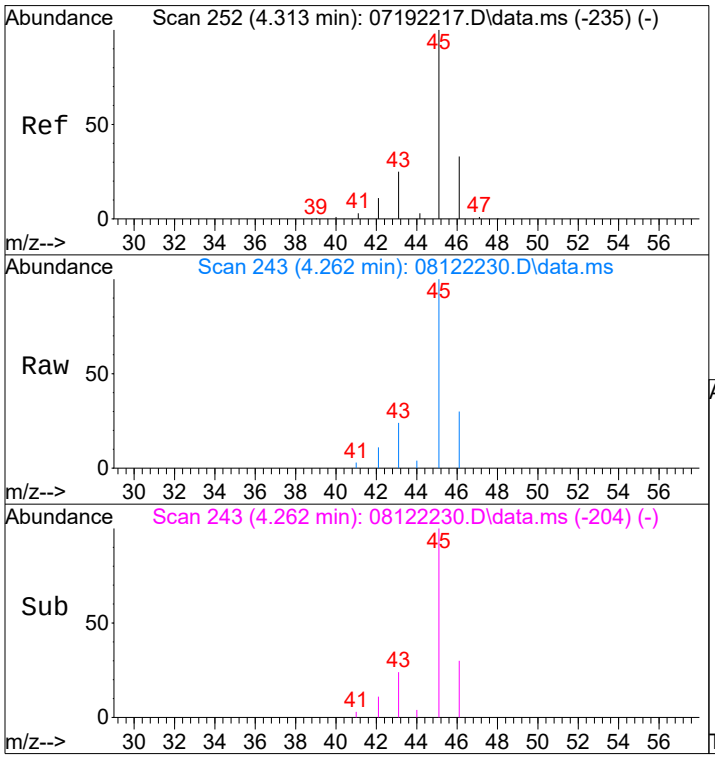


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.47 ng
RT: 3.34 min Scan# 80
Delta R.T. 0.011 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 85 Resp: 49698

Ion	Ratio	Lower	Upper
85	100		
87	31.9	13.1	53.1
101	9.7	0.0	30.1
103	6.1	0.0	26.3

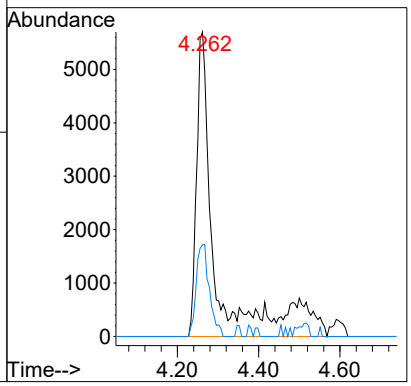


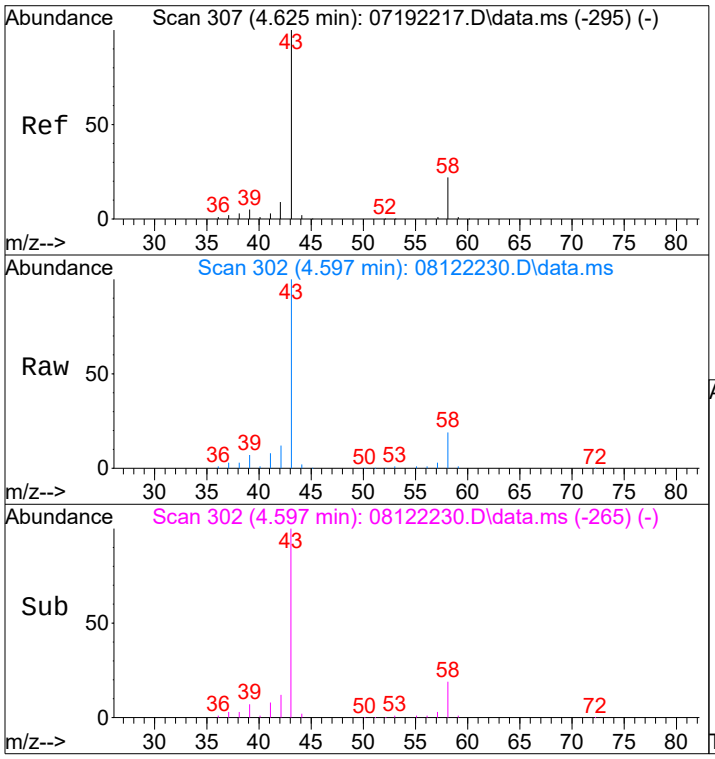


#10
Ethanol
Concen: 2.03 ng
RT: 4.26 min Scan# 243
Delta R.T. -0.029 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 45 Resp: 18377

Ion	Ratio	Lower	Upper
45	100		
46	21.1	12.6	52.6

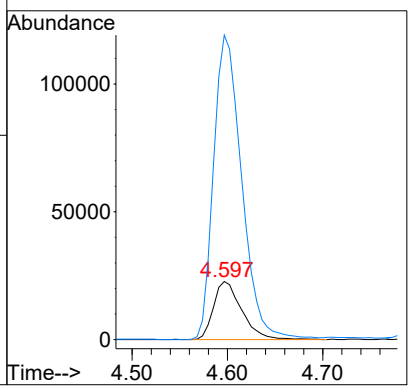


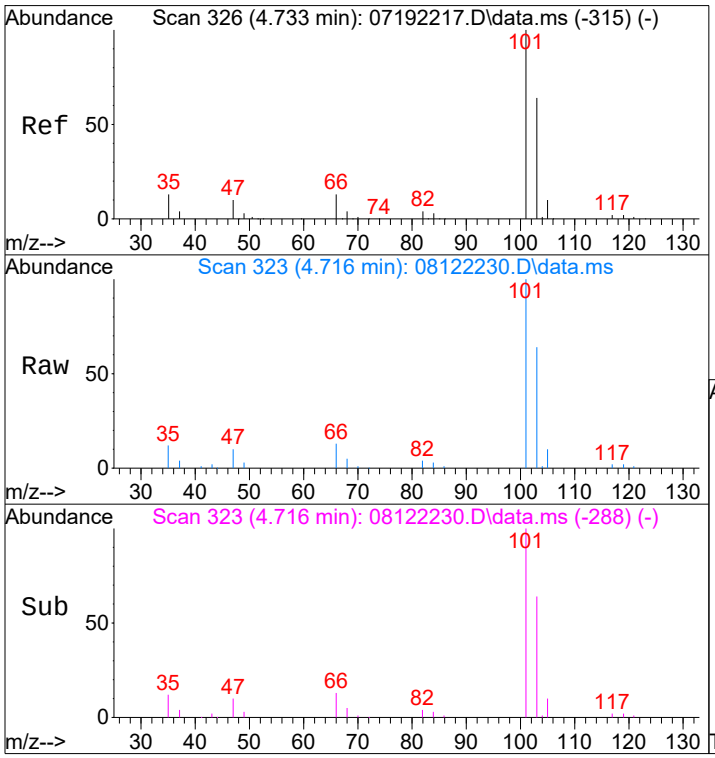


#13
Acetone
Concen: 5.54 ng
RT: 4.60 min Scan# 302
Delta R.T. -0.043 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 58 Resp: 46867

Ion	Ratio	Lower	Upper
58	100		
43	522.4	424.6	484.6#

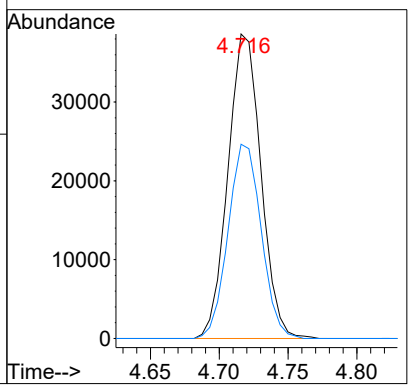


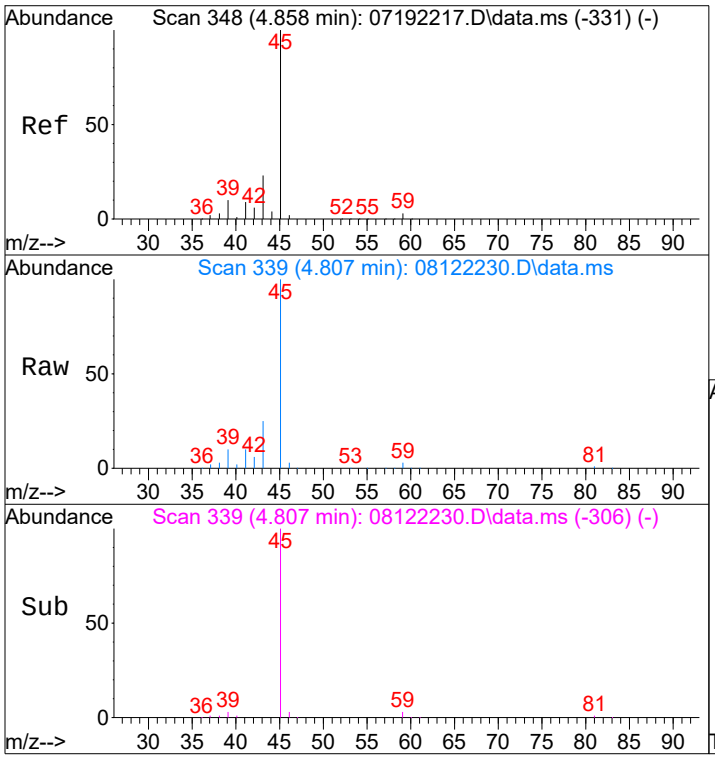


#14
Trichlorofluoromethane
Concen: 1.89 ng
RT: 4.72 min Scan# 323
Delta R.T. -0.049 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion:101 Resp: 64394

Ion	Ratio	Lower	Upper
101	100		
103	64.1	43.7	83.7

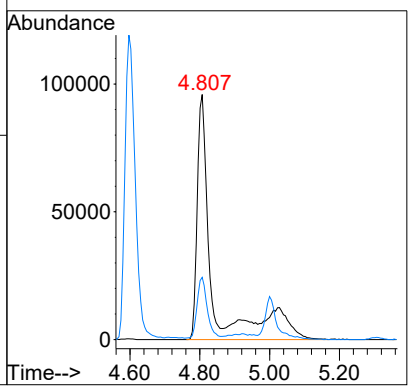


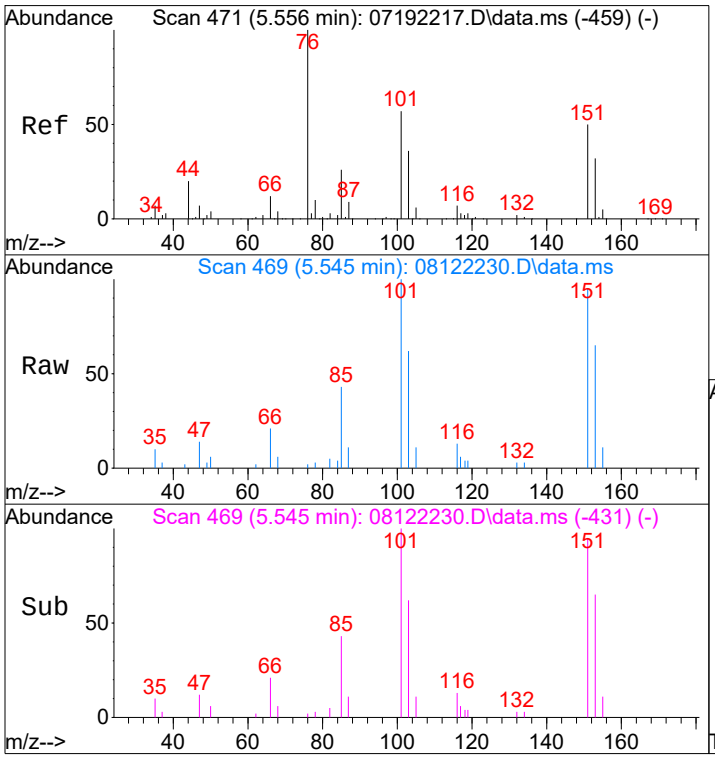


#15
2-Propanol (Isopropanol)
Concen: 8.51 ng
RT: 4.81 min Scan# 339
Delta R.T. -0.061 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 45 Resp: 289524

Ion	Ratio	Lower	Upper
45	100		
43	19.6	4.2	44.2

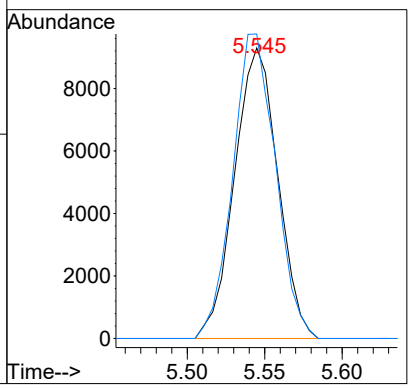


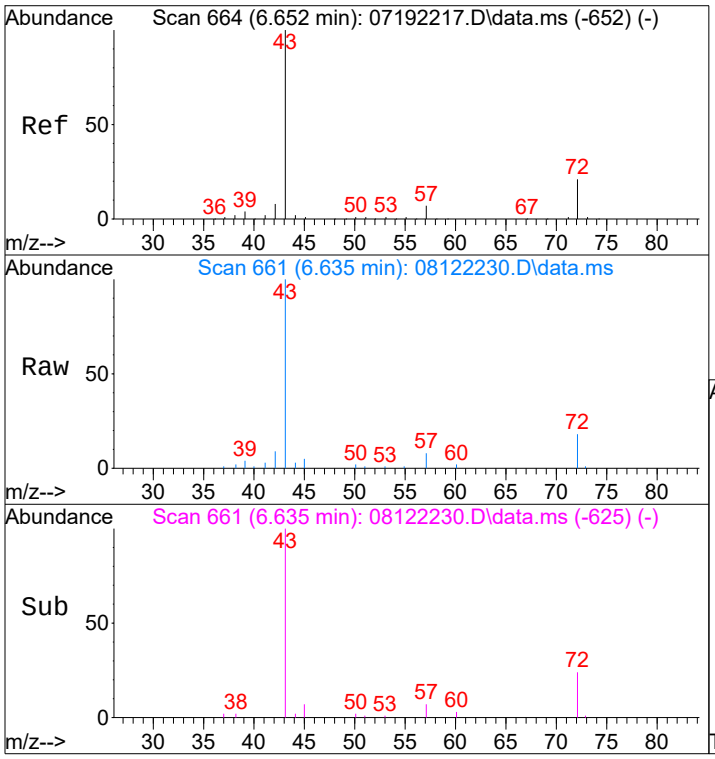


#21
Trichlorotrifluoroethane
Concen: 1.30 ng
RT: 5.54 min Scan# 469
Delta R.T. -0.036 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion:151 Resp: 18085

Ion	Ratio	Lower	Upper
151	100		
101	103.7	94.5	134.5

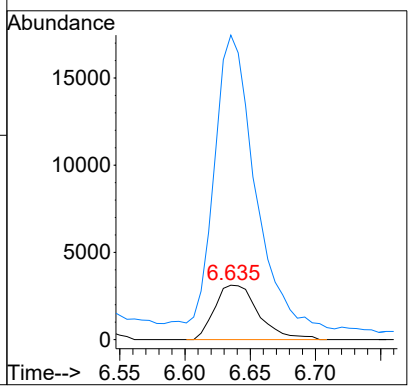


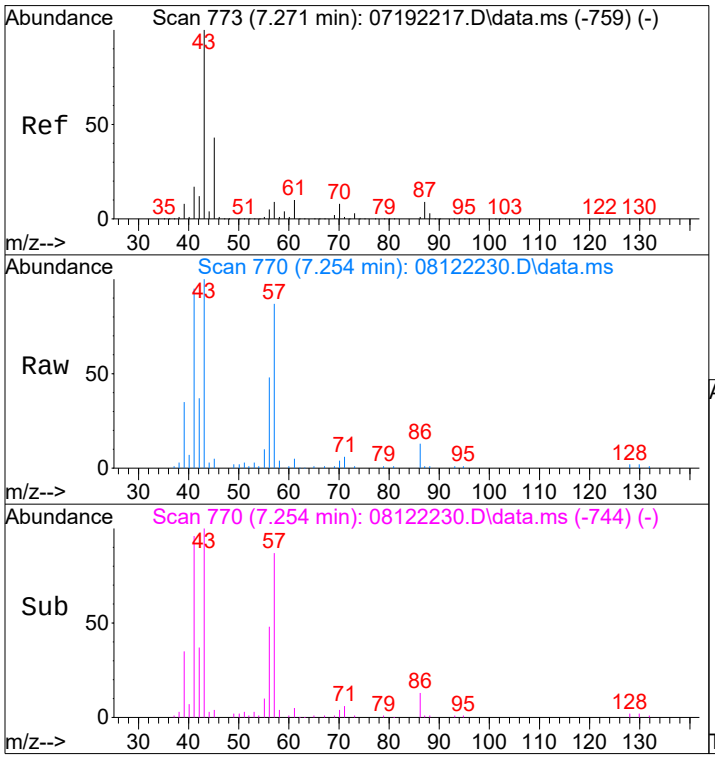


#27
2-Butanone (MEK)
Concen: 0.96 ng
RT: 6.64 min Scan# 661
Delta R.T. -0.048 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 72 Resp: 7280

Ion	Ratio	Lower	Upper
72	100		
43	543.8	454.7	494.7#

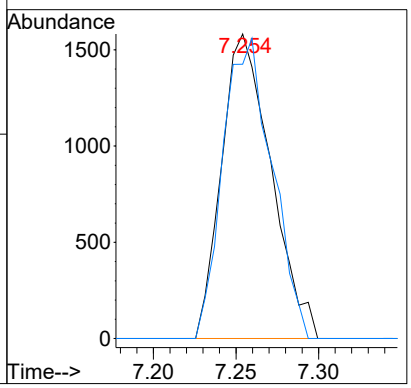


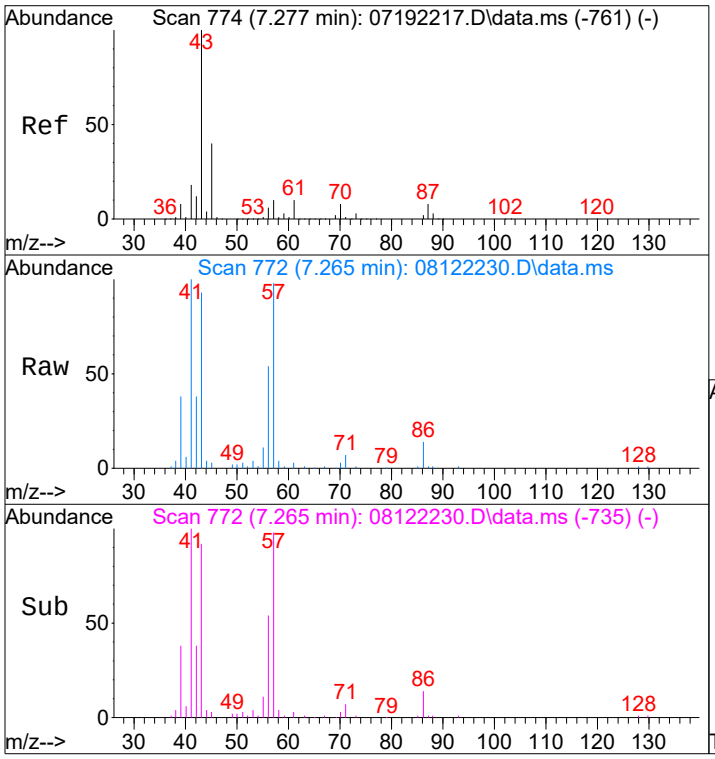


#30
Ethyl Acetate
Concen: 0.68 ng
RT: 7.25 min Scan# 770
Delta R.T. -0.052 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 61 Resp: 3302

Ion	Ratio	Lower	Upper
61	100		
70	97.4	59.3	99.3

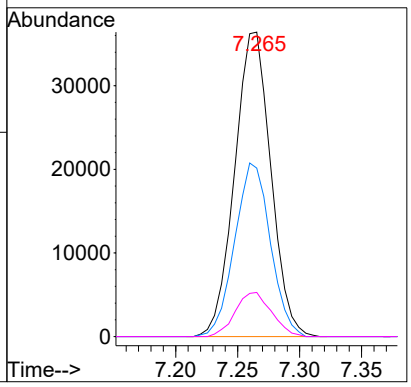


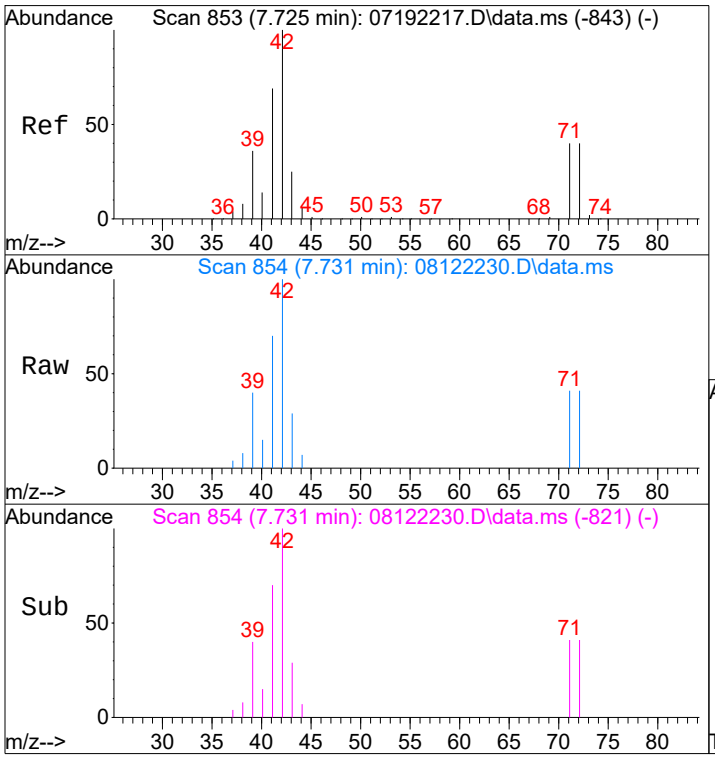


#31
n-Hexane
Concen: 3.94 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.040 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 57 Resp: 74133

Ion	Ratio	Lower	Upper
57	100		
56	56.1	43.3	64.9
86	14.6	11.8	17.6

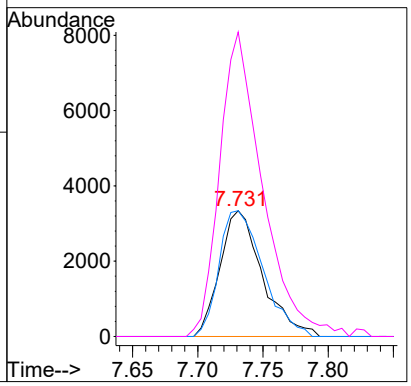


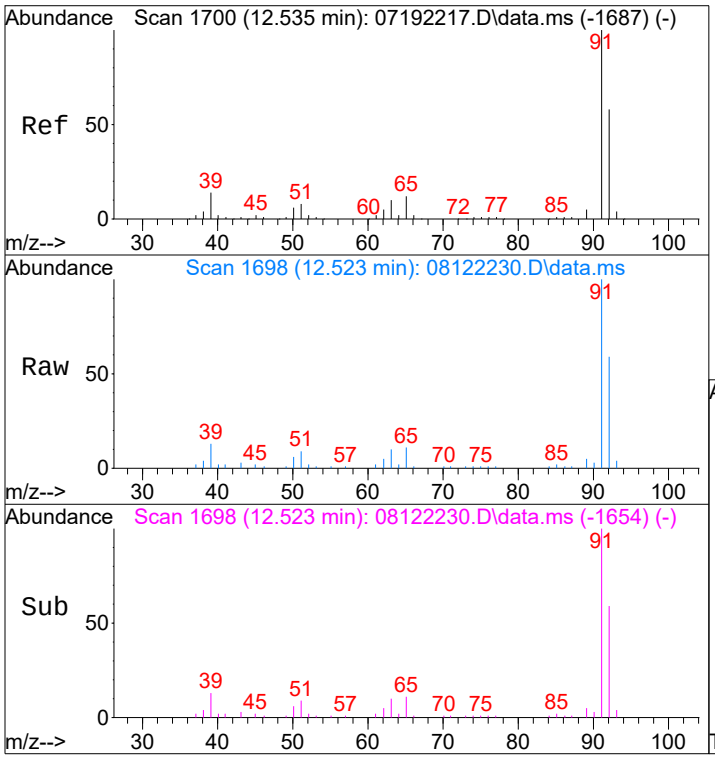


#34
Tetrahydrofuran (THF)
Concen: 1.02 ng
RT: 7.73 min Scan# 854
Delta R.T. -0.060 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 72 Resp: 7556

Ion	Ratio	Lower	Upper
72	100		
71	103.6	80.1	120.1
42	244.7	229.3	269.3

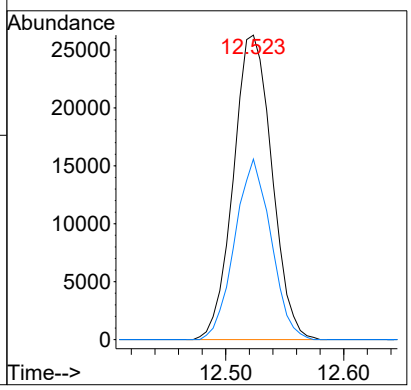


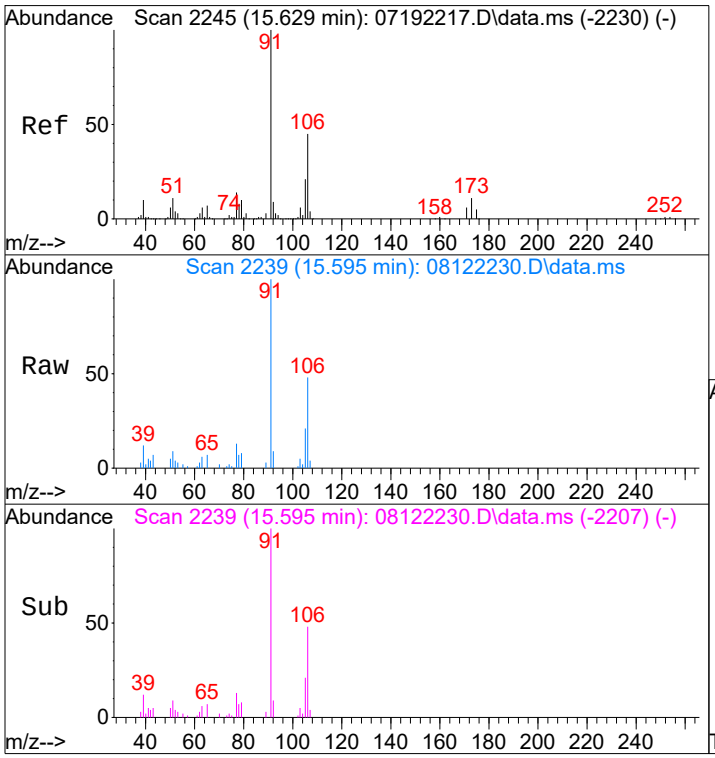


#58
Toluene
Concen: 1.20 ng
RT: 12.52 min Scan# 1698
Delta R.T. -0.000 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 91 Resp: 59598

Ion	Ratio	Lower	Upper
91	100		
92	55.9	37.2	77.2

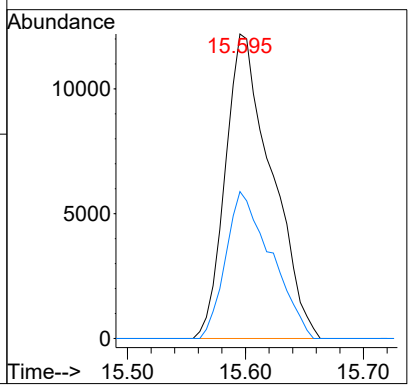


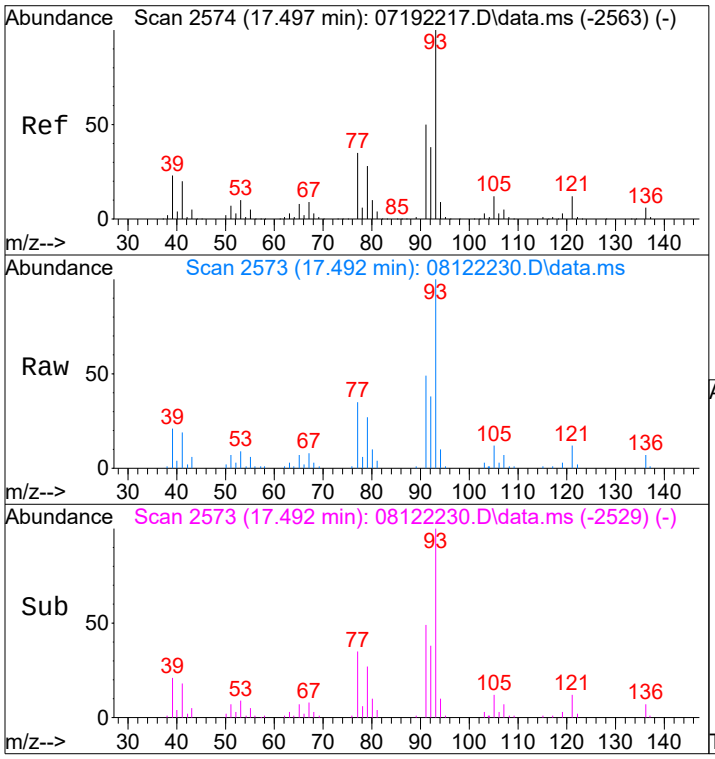


#67
m- & p-Xylenes
Concen: 0.68 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.017 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 91 Resp: 33075

Ion	Ratio	Lower	Upper
91	100		
106	47.6	24.0	64.0

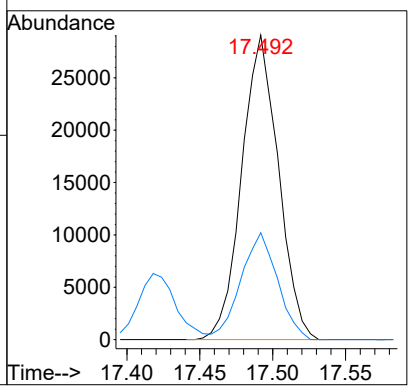


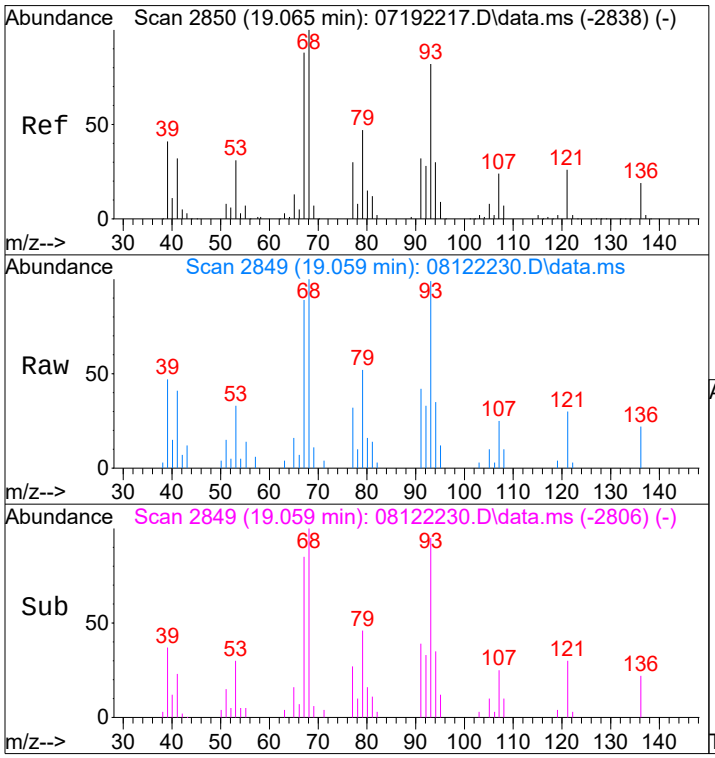


#75
alpha-Pinene
Concen: 1.78 ng
RT: 17.49 min Scan# 2573
Delta R.T. -0.000 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 93 Resp: 50915

Ion	Ratio	Lower	Upper
93	100		
77	35.0	15.4	55.4

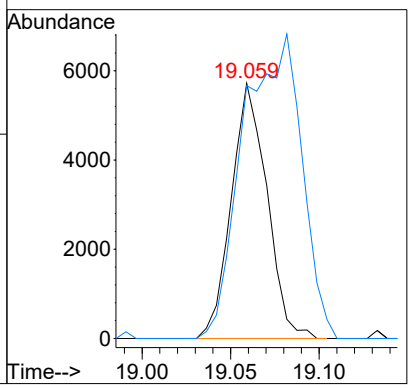




#91
d-Limonene
Concen: 0.49 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.006 min
Lab File: 08122230.D
Acq: 12 Aug 2022 18:41

Tgt Ion: 68 Resp: 8022

Ion	Ratio	Lower	Upper
68	100		
93	194.9	61.3	101.3#



01132068

Method Path : I:\MS09\Methods\
Method File : R9071922.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Jul 20 08:53:45 2022
Response Via : Initial Calibration

7/20/22

Calibration Files
0.1 =07192212.D 0.2 =07192213.D 0.5 =07192214.D 1.0 =07192215.D 5.0 =07192216.D 25 =07192
100 =07192219.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	1.428	1.214	1.486	1.245	1.109	1.075	1.026	0.998	1.198	15.16
3)	T	Dichlorodifluo...	3.602	3.011	3.913	3.212	2.560	2.683	2.419	2.244	2.956	19.93
4)	T	Chloromethane	1.618	1.380	1.869	1.477	1.184	1.308	1.136	0.903	1.359	22.11
5)	T	1,2-Dichloro-1...	1.546	1.311	1.625	1.355	1.077	1.162	1.101	1.057	1.279	17.06
6)	T	Vinyl Chloride	1.435	1.263	1.648	1.345	1.070	1.160	1.093	1.103	1.265	16.00
7)	T	1,3-Butadiene	1.045	0.818	1.144	0.902	0.794	0.881	0.843	0.865	0.912	13.27
8)	T	Bromomethane	1.163	0.973	1.309	1.020	0.837	0.927	0.853	0.808	0.986	17.63
9)	T	Chloroethane	0.804	0.750	0.854	0.725	0.595	0.630	0.566	0.535	0.683	17.15
10)	T	Ethanol	0.841	0.561	1.137	0.917	0.745	0.773	0.695	0.660	0.791	22.41
11)	T	Acetonitrile	2.956	2.434	2.980	2.435	2.011	2.074	1.907	1.804	2.325	19.63
12)	T	Acrolein	0.675	0.614	0.785	0.643	0.546	0.559	0.507	0.481	0.601	16.53
13)	T	Acetone	1.013	0.795	0.954	0.802	0.626	0.627	0.565	0.534	0.740	24.27
14)	T	Trichlorofluor...	3.681	3.098	3.893	3.147	2.554	2.707	2.460	2.299	2.980	19.47
15)	T	2-Propanol (Is...	3.596	2.956	3.999	3.299	2.463	2.837	2.457	2.194	2.975	20.87
16)	T	Acrylonitrile	1.341	1.141	1.657	1.435	1.182	1.214	1.106	1.035	1.264	16.16
17)	T	1,1-Dichloroet...	1.272	1.029	1.329	1.123	0.918	0.973	0.888	0.849	1.048	17.04
18)	T	2-Methyl-2-Pro...	3.198	2.695	3.626	3.084	2.501	2.872	2.559	1.942	2.810	18.15
19)	T	Methylene Chlo...	1.521	1.122	1.431	1.262	0.965	1.022	0.934	0.883	1.142	20.88
20)	T	3-Chloro-1-pro...		2.113	3.140	2.865	1.973	1.811	1.630	1.481	2.145	29.22
21)	T	Trichlorotrifl...	1.621	1.163	1.541	1.243	1.018	1.104	1.035	0.997	1.215	19.83
22)	T	Carbon Disulfide	4.861	3.888	5.126	4.246	3.464	3.668	3.328	3.111	3.961	18.38
23)	T	trans-1,2-Dich...	1.929	1.568	2.171	1.779	1.482	1.582	1.462	1.383	1.670	16.15
24)	T	1,1-Dichloroet...	2.414	2.052	2.553	2.152	1.712	1.815	1.660	1.567	1.991	18.23
25)	T	Methyl tert-Bu...	3.974	3.522	4.730	3.950	3.243	3.592	3.297	3.085	3.674	14.50
26)	T	Vinyl Acetate	0.077	0.084	0.171	0.145	0.132	0.158	0.148	0.140	0.132	25.64
27)	T	2-Butanone (MEK)	0.757	0.615	0.893	0.729	0.598	0.630	0.574	0.539	0.667	17.64
28)	T	cis-1,2-Dichlo...	1.915	1.593	2.202	1.767	1.429	1.540	1.417	1.344	1.651	17.75
29)	T	Diisopropyl Ether	1.114	0.878	1.141	0.933	0.754	0.794	0.745	0.731	0.886	18.55
30)	T	Ethyl Acetate	0.458	0.414	0.540	0.470	0.379	0.399	0.372	0.375	0.426	13.91
31)	T	n-Hexane	2.006	1.737	2.136	1.709	1.384	1.460	1.362	1.363	1.645	18.47
32)	T	Chloroform	2.909	2.370	3.086	2.565	2.058	2.188	1.995	1.884	2.382	18.41
33)	S	1,2-Dichloroet...	2.120	2.144	2.134	2.132	2.111	2.090	2.033	2.014	2.097	2.32
34)	T	Tetrahydrofura...	0.738	0.655	0.807	0.690	0.579	0.614	0.558	0.522	0.645	14.96
35)	T	Ethyl tert-But...	1.483	1.272	1.685	1.379	1.141	1.288	1.183	1.129	1.320	14.43
36)	T	1,2-Dichloroet...	2.457	2.132	2.621	2.176	1.743	1.881	1.716	1.623	2.044	17.84
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.702	0.576	0.742	0.612	0.498	0.545	0.505	0.482	0.583	16.59
39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.315	1.002	1.258	1.048	0.845	0.904	0.832	0.790	0.999	19.79
42)	T	Carbon Tetrach...	0.577	0.460	0.653	0.528	0.436	0.482	0.450	0.430	0.502	15.73
43)	T	Cyclohexane	0.457	0.361	0.466	0.384	0.312	0.337	0.313	0.299	0.366	17.76
44)	T	tert-Amyl Meth...	0.829	0.683	0.908	0.749	0.627	0.728	0.681	0.652	0.732	12.95
45)	T	1,2-Dichloropr...	0.280	0.237	0.320	0.252	0.201	0.220	0.203	0.194	0.238	18.48
46)	T	Bromodichlorom...	0.562	0.428	0.575	0.476	0.403	0.438	0.412	0.393	0.461	15.49
47)	T	Trichloroethene	0.336	0.287	0.371	0.310	0.254	0.285	0.268	0.260	0.297	13.57
48)	T	1,4-Dioxane	0.167	0.144	0.232	0.187	0.174	0.191	0.178	0.171	0.180	13.94
49)	T	2,2,4-Trimethy...	1.192	0.949	1.238	1.035	0.825	0.887	0.819	0.774	0.965	18.15
50)	T	Methyl Methacr...	0.083	0.081	0.119	0.099	0.087	0.097	0.091	0.089	0.093	13.26
51)	T	n-Heptane	0.267	0.221	0.288	0.248	0.200	0.215	0.199	0.189	0.228	15.68
52)	T	cis-1,3-Dichlo...	0.445	0.372	0.505	0.426	0.368	0.411	0.387	0.371	0.411	11.57
53)	T	4-Methyl-2-pen...	0.229	0.187	0.266	0.225	0.185	0.206	0.192	0.184	0.209	13.79
54)	T	trans-1,3-Dich...	0.462	0.386	0.525	0.442	0.382	0.428	0.402	0.386	0.427	11.57

55)	T	1,1,2-Trichlor...	0.329	0.251	0.344	0.287	0.233	0.253	0.236	0.227	0.270	16.72
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	5.380	5.335	5.282	5.301	5.315	5.163	5.118	5.077	5.246	2.13
58)	T	Toluene	6.783	5.176	6.864	5.633	4.534	4.741	4.394	4.107	5.279	20.14
59)	T	2-Hexanone	3.219	2.658	3.675	3.154	2.661	2.844	2.636	2.467	2.914	13.86
60)	T	Dibromochlorom...	2.011	1.751	2.229	1.941	1.620	1.796	1.683	1.601	1.829	11.86
61)	T	1,2-Dibromoethane	1.952	1.504	2.015	1.668	1.398	1.496	1.401	1.333	1.596	16.28
62)	T	n-Butyl Acetate	3.247	2.795	3.890	3.352	2.891	3.097	2.866	2.672	3.101	12.68
63)	T	n-Octane	1.002	0.868	1.252	1.008	0.836	0.877	0.811	0.773	0.928	16.74
64)	T	Tetrachloroethene	2.215	1.769	2.324	1.892	1.567	1.708	1.623	1.558	1.832	15.99
65)	T	Chlorobenzene	4.613	3.568	4.500	3.791	3.044	3.262	3.074	2.942	3.599	18.21
66)	T	Ethylbenzene	7.546	5.877	7.958	6.699	5.502	5.841	5.407	5.039	6.234	16.98
67)	T	m- & p-Xylenes	6.099	4.936	6.577	5.488	4.566	4.882	4.564	4.304	5.177	15.59
68)	T	Bromoform	1.670	1.440	1.954	1.694	1.524	1.802	1.720	1.652	1.682	9.39
69)	T	Styrene	3.911	3.029	4.264	3.779	3.227	3.546	3.314	3.123	3.524	12.23
70)	T	o-Xylene	5.662	4.774	6.414	5.490	4.437	4.749	4.407	4.148	5.010	15.44
71)	T	n-Nonane	2.873	2.376	3.248	2.691	2.256	2.368	2.183	2.050	2.506	16.03
72)	T	1,1,2,2-Tetrac...	2.636	2.151	2.834	2.405	1.989	2.072	1.927	1.826	2.230	16.12
73)	S	Bromofluoroben...	2.095	2.082	2.080	2.104	2.157	2.140	2.162	2.135	2.119	1.57
74)	T	Cumene	7.317	6.045	8.036	6.735	5.488	5.911	5.464	5.071	6.258	16.33
75)	T	alpha-Pinene	3.394	2.902	3.722	3.134	2.681	3.020	2.810	2.647	3.039	12.15
76)	T	n-Propylbenzene	8.518	7.058	9.634	8.206	6.753	7.071	6.500	5.997	7.467	16.22
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	6.762	5.261	7.702	6.561	5.373	5.841	5.305	5.030	5.979	15.71
79)	T	1,3,5-Trimethy...	5.603	4.917	6.673	5.632	4.716	5.047	4.685	4.375	5.206	14.16
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	5.662	4.929	6.859	5.809	4.869	5.323	4.974	4.616	5.380	13.46
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride	3.723	3.118	4.797	4.323	4.073	4.840	4.603	4.188	4.208	13.79
85)	T	1,3-Dichlorobe...	3.515	3.198	4.077	3.511	2.932	3.292	3.136	2.942	3.325	11.31
86)	T	1,4-Dichlorobe...	3.767	3.281	4.253	3.528	2.933	3.259	3.081	2.918	3.377	13.53
87)	T	sec-Butylbenzene	8.300	6.562	8.980	7.634	6.154	6.559	6.029	5.561	6.972	17.24
88)	T	4-Isopropyltol...	6.687	5.437	7.505	6.482	5.448	5.843	5.431	4.968	5.975	14.14
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	3.763	3.034	3.960	3.421	2.776	3.090	2.913	2.750	3.213	14.15
91)	T	d-Limonene	1.857	1.486	2.191	1.853	1.598	1.749	1.635	1.565	1.742	12.94
92)	T	1,2-Dibromo-3-...	1.233	1.117	1.552	1.322	1.187	1.346	1.289	1.226	1.284	10.21
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	2.544	2.205	3.340	2.940	2.543	3.104	2.892	2.510	2.760	13.48
95)	T	Naphthalene	5.666	4.794	7.659	6.899	6.207	7.410	6.941	6.310	6.486	14.57
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	2.373	1.885	2.565	2.157	1.810	2.017	1.896	1.703	2.051	14.40
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	5.901	4.855	6.539	5.571	4.552	5.003	4.645	4.284	5.169	14.87
100)	T	n-Butylbenzene	5.979	5.265	7.239	6.235	5.178	5.541	5.100	4.679	5.652	14.35
101)	T	1,1,1,2-Tetrac...	1.760	1.440	1.936	1.600	1.329	1.448	1.371	1.299	1.523	14.80

(#) = Out of Range

R9071922.M Wed Jul 20 09:38:42 2022

Primary Source Standards Concentrations (Working & Initial Calibration)

7/20/22

1ng/L Std. ID:
4ng/L Std. ID: S35-07192211
20ng/L Std. ID: S35-07192210
40ng/L Std. ID:
200ng/L Std. ID: S35-07192209
1000ng/L Std. ID:

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Dichlorodifluoromethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Chloromethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Freon-114	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Vinyl Chloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,3-Butadiene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Chloroethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Ethanol	3.62	3620	724	144.8	72.4	14.48	3.62		0.362	0.724	1.810	3.62	18.10	90.50	181.0	362
Acetonitrile	0.93	930	186	37.2	18.6	3.72	0.93		0.093	0.186	0.465	0.93	4.65	23.25	46.5	93
Acrolein	2.00	2000	400	80.0	40.0	8.00	2.00		0.200	0.400	1.000	2.00	10.00	50.00	100.0	200
Acetone	5.19	5190	1038	207.6	103.8	20.76	5.19		0.519	1.038	2.595	5.19	25.95	129.75	259.5	519
Trichlorofluoromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Isopropanol	2.02	2020	404	80.8	40.4	8.08	2.02		0.202	0.404	1.010	2.02	10.10	50.50	101.0	202
Acrylonitrile	2.03	2030	406	81.2	40.6	8.12	2.03		0.203	0.406	1.015	2.03	10.15	50.75	101.5	203
1,1-Dichloroethene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
tert-Butanol	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
Methylene Chloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Allyl Chloride	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Carbon Disulfide	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
trans-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1-Dichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Methyl tert-Butyl Ether	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Vinyl Acetate	3.40	3400	680	136.0	68.0	13.60	3.40		0.340	0.680	1.700	3.40	17.00	85.00	170.0	340
2-Butanone	2.06	2060	412	82.4	41.2	8.24	2.06		0.206	0.412	1.030	2.06	10.30	51.50	103.0	206
cis-1,2-Dichloroethene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Ethyl Acetate	4.08	4080	816	163.2	81.6	16.32	4.08		0.408	0.816	2.040	4.08	20.40	102.00	204.0	408
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Chloroform	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Tetrahydrofuran	1.97	1970	394	78.8	39.4	7.88	1.97		0.197	0.394	0.985	1.97	9.85	49.25	98.5	197
Ethyl tert-Butyl Ether	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
1,2-Dichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,1-Trichloroethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Benzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Carbon Tetrachloride	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Cyclohexane	2.07	2070	414	82.8	41.4	8.28	2.07		0.207	0.414	1.035	2.07	10.35	51.75	103.5	207
tert-Amyl Methyl Ether	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
1,2-Dichloropropane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Bromodichloromethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Trichloroethene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
1,4-Dioxane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Isooctane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Methyl Methacrylate	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
n-Heptane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105

Form 0881.021

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
4ng/L Std. ID: S35-07192211
20ng/L Std. ID: S35-07192210
40ng/L Std. ID:
200ng/L Std. ID: S35-07192209
1000ng/L Std. ID:

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
4-Methyl-2-pentanone	2.08	2080	416	83.2	41.6	8.32	2.08		0.208	0.416	1.040	2.08	10.40	52.00	104.0	208
trans-1,3-Dichloropropene	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
1,1,2-Trichloroethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Toluene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
2-Hexanone	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Dibromochloromethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
n-Butyl Acetate	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
n-Octane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Tetrachloroethene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Chlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Ethylbenzene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
m-&p-Xylene	2.06	2060	412	82.4	41.2	8.24	2.06		0.206	0.412	1.030	2.06	10.30	51.50	103.0	206
Bromoform	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Styrene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
o-Xylene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
n-Nonane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,1,2,2-Tetrachloroethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Cumene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
alpha-Pinene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
n-Propylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
4-Ethyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,3,5-Trimethylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,2,4-Trimethylbenzene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Benzyl Chloride	2.06	2060	412	82.4	41.2	8.24	2.06		0.206	0.412	1.030	2.06	10.30	51.50	103.0	206
1,3-Dichlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,4-Dichlorobenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
sec-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
p-Isopropyltoluene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,2-Dichlorobenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
d-Limonene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,2-Dibromo-3-chloropropane	2.00	2000	400	80.0	40.0	8.00	2.00		0.200	0.400	1.000	2.00	10.00	50.00	100.0	200
1,2,4-Trichlorobenzene	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
Naphthalene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Hexachloro-1,3-butadiene	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
tert-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
n-Butylbenzene	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,1,1,2-Tetrachloroethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104

TO15 MS09

Calibration Status Report MS09

Method : I:\MS09\Methods\R9071922.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration

7/20/22

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS09\DATA\2022_07\19\07192212.D
2	0.2	0	13	I:\MS09\DATA\2022_07\19\07192213.D
3	0.5	1	13	I:\MS09\DATA\2022_07\19\07192214.D
4	1.0	1	13	I:\MS09\DATA\2022_07\19\07192215.D
5	5.0	5	13	I:\MS09\DATA\2022_07\19\07192216.D
6	25	26	13	I:\MS09\DATA\2022_07\19\07192217.D
7	50	52	13	I:\MS09\DATA\2022_07\19\07192218.D
8	100	104	13	I:\MS09\DATA\2022_07\19\07192219.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Jul 20 08:42 2022	Jul 20 08:37 2022	19 Jul 2022 15:22
2	0.2	Jul 20 08:49 2022	Jul 20 08:48 2022	19 Jul 2022 15:54
3	0.5	Jul 20 08:42 2022	Jul 20 08:33 2022	19 Jul 2022 16:26
4	1.0	Jul 20 08:43 2022	Jul 20 08:32 2022	19 Jul 2022 16:57
5	5.0	Jul 20 08:43 2022	Jul 20 08:31 2022	19 Jul 2022 17:29
6	25	Jul 20 08:43 2022	Jul 20 08:30 2022	19 Jul 2022 18:01
7	50	Jul 20 08:43 2022	Jul 20 08:39 2022	19 Jul 2022 18:33
8	100	Jul 20 08:43 2022	Jul 20 08:40 2022	19 Jul 2022 19:05

R9071922.M Wed Jul 20 09:38:13 2022

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192212.D Vial: 5
Acq On : 19 Jul 2022 15:22 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:37:29 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.19	130	139128	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	599227	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	122199	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	295020	13.184	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.44%				
57) Toluene-d8 (SS2)	12.39	98	657399	13.716	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.76%				
73) Bromofluorobenzene (SS3)	16.79	174	255964	14.117	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.96%				
Target Compounds							Qvalue
2) Propene	3.29	42	1653	0.085	ng		93
3) Dichlorodifluoromethan...	3.36	85	4210	0.131	ng		98
4) Chloromethane	3.51	50	1837	0.098	ng		95
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	1858	0.142	ng		96
6) Vinyl Chloride	3.69	62	1661	0.108	ng		95
7) 1,3-Butadiene	3.80	54	1210	0.117	ng		90
8) Bromomethane	4.02	94	1320	0.132	ng		96
9) Chloroethane	4.15	64	913	0.104	ng	#	43
10) Ethanol	4.28	45	3387	0.297	ng		96
11) Acetonitrile	4.44	41	3060	0.081	ng	#	21
12) Acrolein	4.52	56	1502	0.192	ng		92
13) Acetone	4.62	58	5852	0.636	ng		98
14) Trichlorofluoromethane	4.74	101	4220	0.140	ng		97
15) 2-Propanol (Isopropanol)	4.84	45	8084	0.231	ng		87
16) Acrylonitrile	4.97	53	3031	0.173	ng		97
17) 1,1-Dichloroethene	5.24	96	1515	0.125	ng		92
18) 2-Methyl-2-Propanol (t...	5.36	59	7474	0.260	ng		77
19) Methylene Chloride	5.33	84	1761	0.132	ng		97
20) 3-Chloro-1-propene (Al...	5.43	41	3471	0.109	ng		79
21) Trichlorotrifluoroethane	5.56	151	1949	0.156	ng		89
22) Carbon Disulfide	5.60	76	11362	0.265	ng		95
23) trans-1,2-Dichloroethene	6.11	61	2276	0.116	ng		99
24) 1,1-Dichloroethane	6.29	63	2821	0.117	ng		95
25) Methyl tert-Butyl Ether	6.37	73	4644	0.120	ng		98
26) Vinyl Acetate	6.42	86	290	0.166	ng	#	1
27) 2-Butanone (MEK)	6.65	72	1736	0.220	ng	#	74
28) cis-1,2-Dichloroethene	7.04	61	2217	0.117	ng		94
29) Diisopropyl Ether	7.26	87	2629	0.270	ng	#	85
30) Ethyl Acetate	7.27	61	2078	0.401	ng		93
31) n-Hexane	7.27	57	2344	0.107	ng		97
32) Chloroform	7.32	83	3464	0.139	ng		97
34) Tetrahydrofuran (THF)	7.75	72	1619	0.210	ng	#	79
35) Ethyl tert-Butyl Ether	7.80	87	3467	0.242	ng		98
36) 1,2-Dichloroethane	8.07	62	2899	0.137	ng		97
38) 1,1,1-Trichloroethane	8.36	97	3502	0.141	ng		97
39) Isopropyl Acetate	9.26	61	21496	No Calib			
40) 1-Butanol	9.18	56	5205	No Calib			
41) Benzene	8.86	78	6558	0.132	ng		91
42) Carbon Tetrachloride	9.03	117	2902	0.130	ng		99
43) Cyclohexane	9.18	84	4531	0.251	ng		98
44) tert-Amyl Methyl Ether	9.58	73	8307	0.244	ng		97
45) 1,2-Dichloropropane	9.83	63	1383	0.106	ng		100
46) Bromodichloromethane	10.04	83	2831	0.143	ng		84
47) Trichloroethene	10.10	130	1659	0.121	ng		95
48) 1,4-Dioxane	10.13	88	834	0.086	ng	#	43
49) 2,2,4-Trimethylpentane...	10.20	57	6057	0.109	ng		97
50) Methyl Methacrylate	10.39	100	823	0.179	ng	#	64

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192212.D Vial: 5
Acq On : 19 Jul 2022 15:22 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:37:29 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

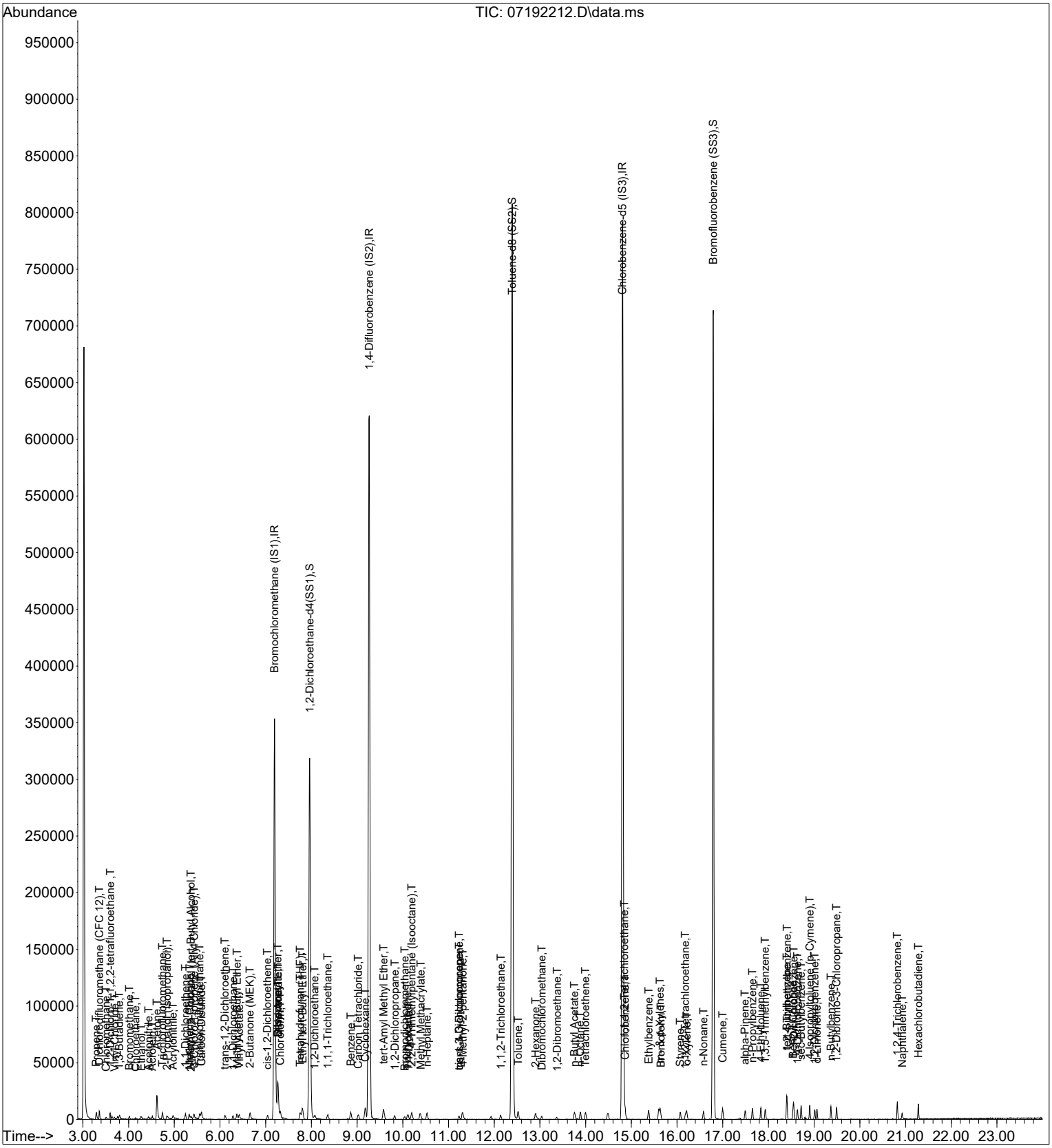
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	1344	0.118	ng		92
52) cis-1,3-Dichloropropene	11.23	75	2238	0.115	ng		92
53) 4-Methyl-2-pentanone	11.31	58	2279	0.196	ng	#	95
54) trans-1,3-Dichloropropene	11.23	75	2238	0.111	ng		92
55) 1,1,2-Trichloroethane	12.14	97	1640	0.127	ng		91
58) Toluene	12.52	91	6830	0.145	ng		97
59) 2-Hexanone	12.90	43	6452	0.196	ng		95
60) Dibromochloromethane	13.04	129	2064	0.141	ng		99
61) 1,2-Dibromoethane	13.37	107	1985	0.142	ng		86
62) n-Butyl Acetate	13.76	43	6476	0.183	ng		97
63) n-Octane	13.88	57	1029	0.105	ng		99
64) Tetrachloroethene	13.99	166	2252	0.152	ng		94
65) Chlorobenzene	14.86	112	4690	0.151	ng		97
66) Ethylbenzene	15.38	91	7598	0.138	ng		96
67) m- & p-Xylenes	15.62	91	12283m	0.277	ng		
68) Bromoform	15.65	173	1698	0.126	ng		97
69) Styrene	16.07	104	3938	0.126	ng		98
70) o-Xylene	16.21	91	5757	0.132	ng		99
71) n-Nonane	16.58	43	2921	0.104	ng		95
72) 1,1,2,2-Tetrachloroethane	16.18	83	2680	0.137	ng		95
74) Cumene	17.00	105	7439	0.141	ng		99
75) alpha-Pinene	17.49	93	3583	0.133	ng		97
76) n-Propylbenzene	17.65	91	8743	0.132	ng		99
77) 3-Ethyltoluene	17.00	105	7439	No Calib			
78) 4-Ethyltoluene	17.83	105	7007	0.139	ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	5697	0.131	ng		97
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	505	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	5701	0.127	ng		98
83) n-Decane	16.78	58	163	No Calib		#	
84) Benzyl Chloride	18.54	91	7498	0.214	ng		91
85) 1,3-Dichlorobenzene	18.55	146	3574	0.126	ng		95
86) 1,4-Dichlorobenzene	18.63	146	3830	0.137	ng		99
87) sec-Butylbenzene	18.72	105	8439	0.145	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	6799	0.134	ng		98
89) 1,2,3-Trimethylbenzene	18.41	105	5701	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	3863	0.145	ng		99
91) d-Limonene	19.06	68	1906	0.123	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	2411	0.231	ng	#	77
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.82	180	5073	0.218	ng		99
95) Naphthalene	20.93	128	5761	0.104	ng		97
96) n-Dodecane	0.00	58	0	N.D.			
97) Hexachlorobutadiene	21.28	225	2389	0.141	ng		96
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	6000	0.138	ng		99
100) n-Butylbenzene	19.37	91	6079	0.122	ng		98
101) 1,1,1,2-Tetrachloroethane	14.85	131	1789	0.149	ng		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

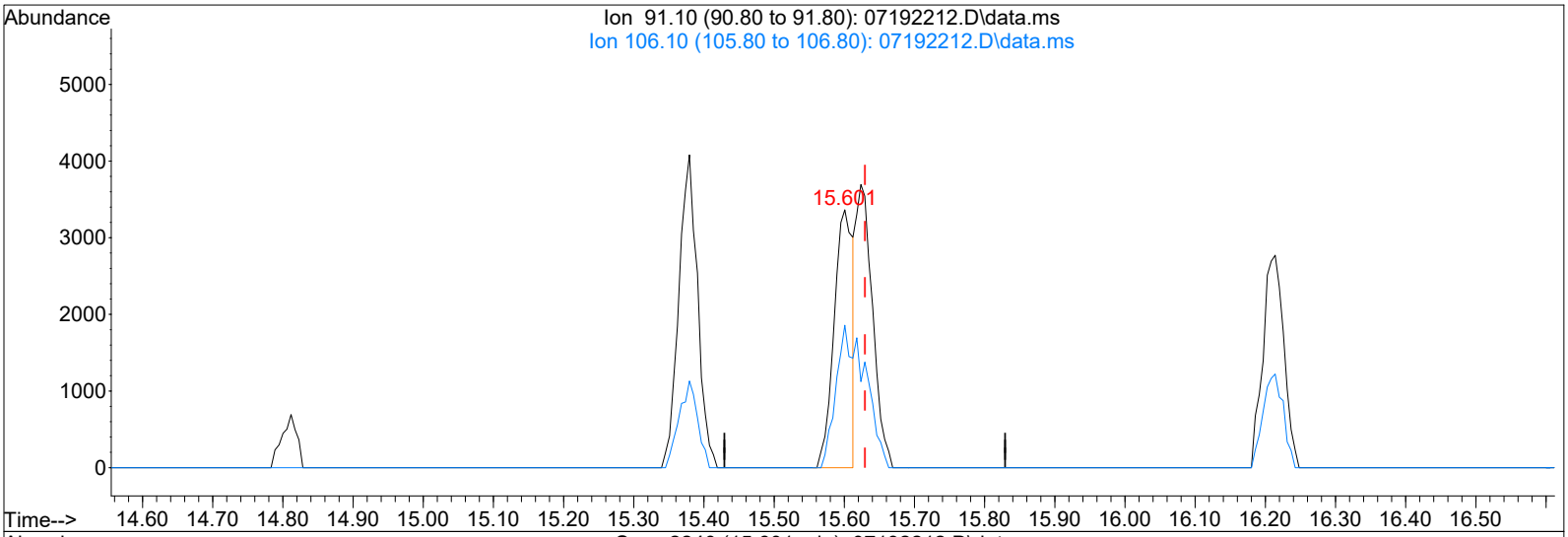
Data File : I:\MS09\DATA\2022_07\19\07192212.D Vial: 5
Acq On : 19 Jul 2022 15:22 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

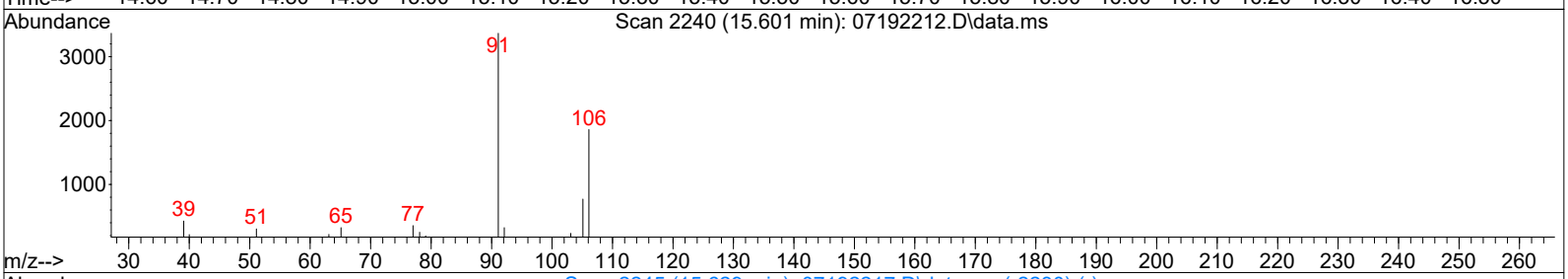
Quant Time: Jul 20 08:37:29 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

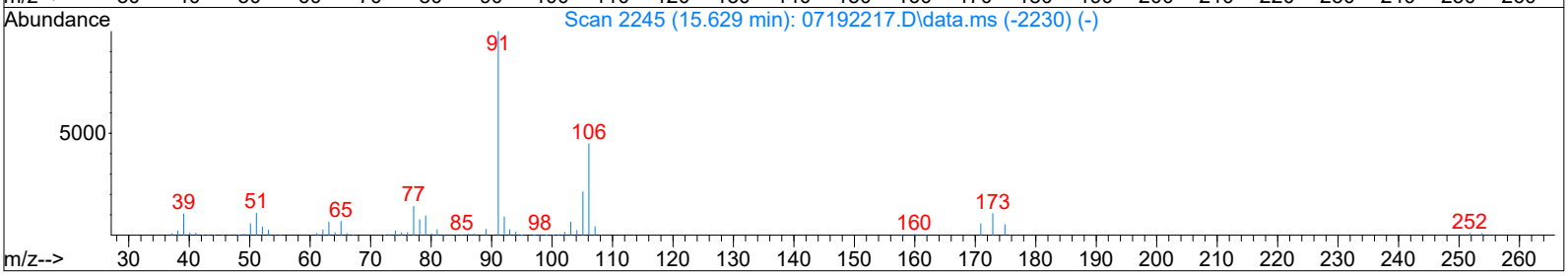


Data File : I:\MS09\DATA\2022_07\19\07192212.D Vial: 5
Acq On : 19 Jul 2022 15:22 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:36:37 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 07192212.D\data.ms

(67) m- & p-Xylenes (T)

15.601min (-0.028) 0.14ng

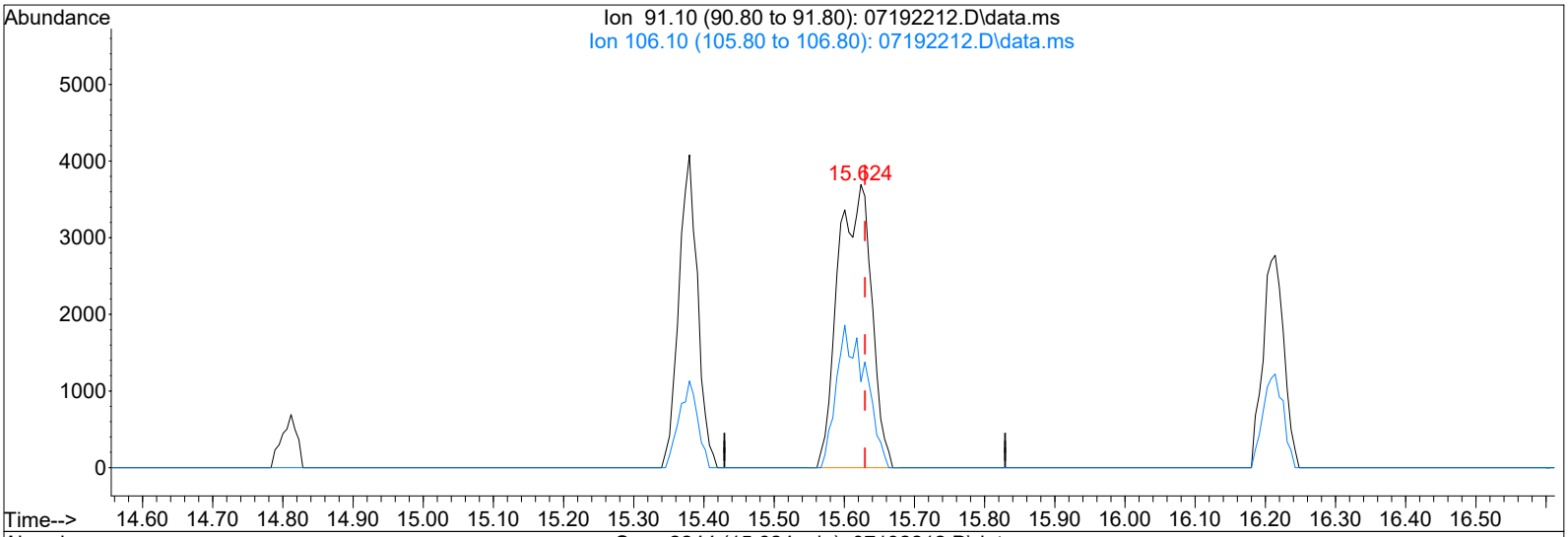
response 6219

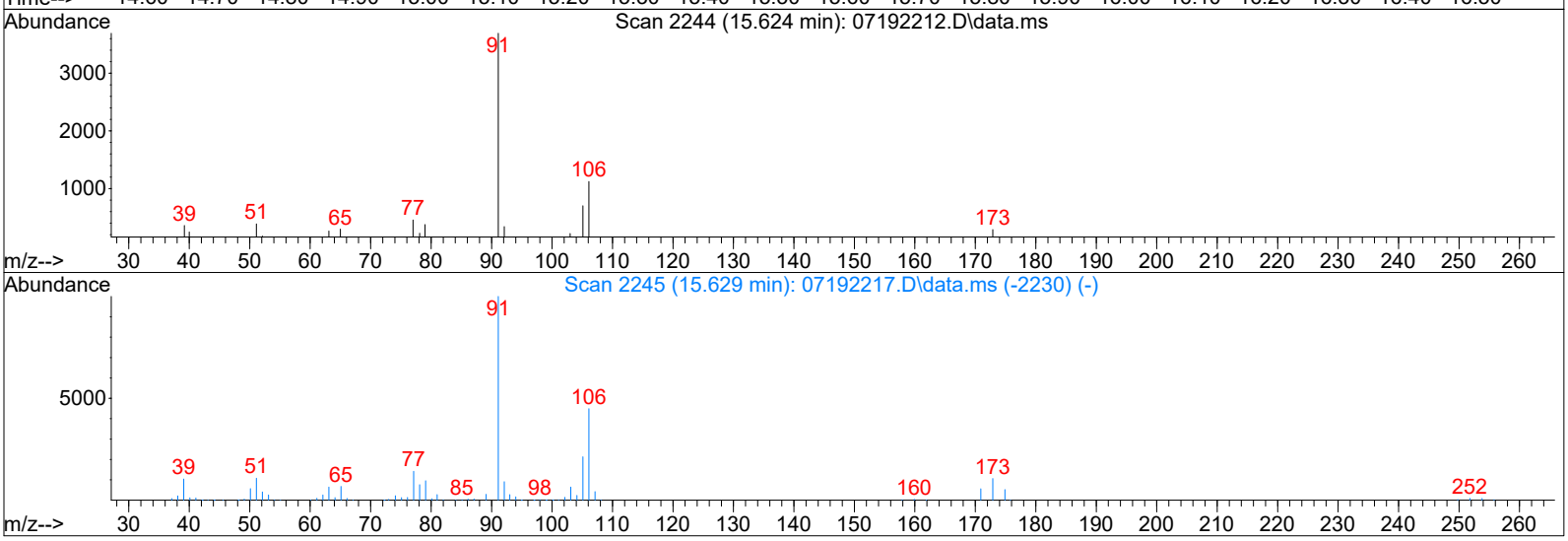
Ion	Exp%	Act%
91.10	100	100
106.10	44.00	86.49#
0.00	0.00	0.00
0.00	0.00	0.00

01132077

Data File : I:\MS09\DATA\2022_07\19\07192212.D Vial: 5
Acq On : 19 Jul 2022 15:22 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:36:37 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 07192212.D\data.ms

(67) m- & p-Xylenes (T)

15.624min (-0.006) 0.28ng m

response 12283

Ion	Exp%	Act%
91.10	100	100
106.10	44.00	43.79
0.00	0.00	0.00
0.00	0.00	0.00

SP

7/20/22

7/27/22

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192213.D Vial: 5
Acq On : 19 Jul 2022 15:54 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:48:23 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	140804	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	615398	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	125729	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	301924	13.332	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.64%				
57) Toluene-d8 (SS2)	12.39	98	670733	13.602	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.80%				
73) Bromofluorobenzene (SS3)	16.79	174	261743	14.030	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.24%				
Target Compounds							Qvalue
2) Propene	3.29	42	2844	0.144	ng		99
3) Dichlorodifluoromethan...	3.36	85	7122	0.219	ng		97
4) Chloromethane	3.50	50	3171	0.167	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	3189	0.240	ng		96
6) Vinyl Chloride	3.69	62	2959	0.191	ng		95
7) 1,3-Butadiene	3.80	54	1916	0.183	ng		88
8) Bromomethane	4.01	94	2237	0.222	ng		91
9) Chloroethane	4.15	64	1723	0.193	ng		85
10) Ethanol	4.27	45	4573	0.396	ng		89
11) Acetonitrile	4.43	41	5099	0.133	ng	#	55
12) Acrolein	4.52	56	2768	0.349	ng		90
13) Acetone	4.61	58	9293	0.998	ng		94
14) Trichlorofluoromethane	4.74	101	7189	0.236	ng		99
15) 2-Propanol (Isopropanol)	4.84	45	13452	0.380	ng		85
16) Acrylonitrile	4.97	53	5216	0.294	ng		98
17) 1,1-Dichloroethene	5.24	96	2480	0.202	ng		100
18) 2-Methyl-2-Propanol (t...	5.37	59	12752	0.438	ng		78
19) Methylene Chloride	5.32	84	2628	0.194	ng		93
20) 3-Chloro-1-propene (Al...	5.43	41	4998m	0.155	ng		
21) Trichlorotrifluoroethane	5.55	151	2829	0.224	ng		97
22) Carbon Disulfide	5.59	76	18394	0.423	ng		96
23) trans-1,2-Dichloroethene	6.11	61	3745	0.189	ng		95
24) 1,1-Dichloroethane	6.29	63	4855	0.199	ng		99
25) Methyl tert-Butyl Ether	6.36	73	8331	0.213	ng		100
26) Vinyl Acetate	6.42	86	646	0.365	ng	#	13
27) 2-Butanone (MEK)	6.65	72	2852	0.357	ng	#	77
28) cis-1,2-Dichloroethene	7.04	61	3732	0.195	ng		98
29) Diisopropyl Ether	7.27	87	4192	0.426	ng		99
30) Ethyl Acetate	7.27	61	3809	0.726	ng		93
31) n-Hexane	7.27	57	4109	0.186	ng		93
32) Chloroform	7.32	83	5714	0.226	ng		97
34) Tetrahydrofuran (THF)	7.75	72	2906	0.373	ng		95
35) Ethyl tert-Butyl Ether	7.80	87	6017	0.415	ng		99
36) 1,2-Dichloroethane	8.08	62	5091	0.238	ng		98
38) 1,1,1-Trichloroethane	8.36	97	5902	0.232	ng		95
39) Isopropyl Acetate	9.26	61	21864	No Calib			
40) 1-Butanol	9.18	56	8245	No Calib			
41) Benzene	8.86	78	10263	0.201	ng		99
42) Carbon Tetrachloride	9.03	117	4754	0.207	ng		98
43) Cyclohexane	9.18	84	7357	0.396	ng		99
44) tert-Amyl Methyl Ether	9.57	73	14063	0.402	ng		97
45) 1,2-Dichloropropane	9.83	63	2400	0.178	ng		98
46) Bromodichloromethane	10.04	83	4424	0.218	ng		100
47) Trichloroethene	10.11	130	2914	0.206	ng		99
48) 1,4-Dioxane	10.12	88	1473	0.148	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	9903	0.174	ng		97
50) Methyl Methacrylate	10.38	100	1650	0.350	ng		89

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192213.D Vial: 5
Acq On : 19 Jul 2022 15:54 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

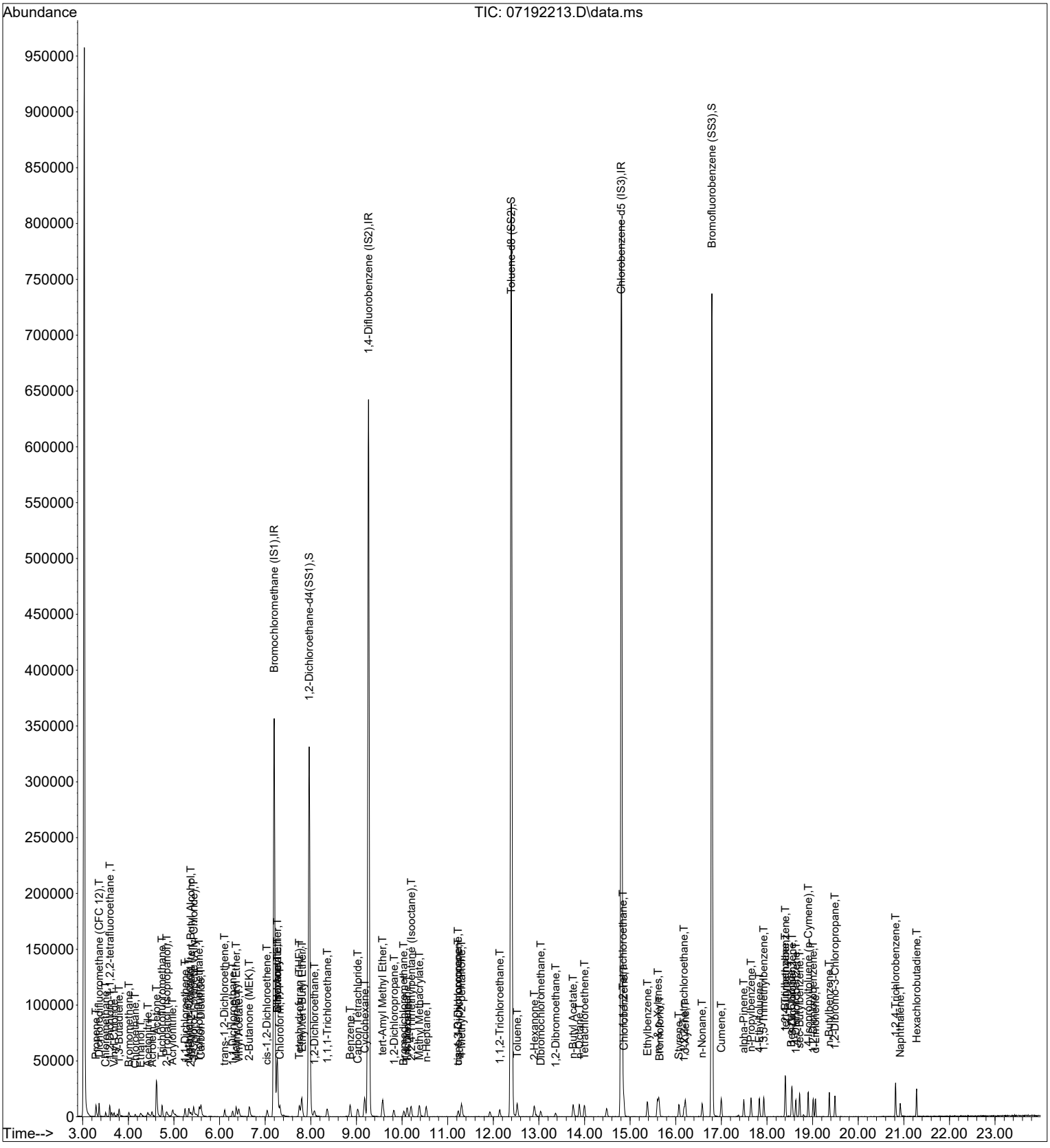
Quant Time: Jul 20 08:48:23 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	2283	0.195	ng		98
52) cis-1,3-Dichloropropene	11.23	75	3842	0.192	ng		91
53) 4-Methyl-2-pentanone	11.30	58	3821	0.320	ng		95
54) trans-1,3-Dichloropropene	11.23	75	3842	0.185	ng		91
55) 1,1,2-Trichloroethane	12.14	97	2573	0.194	ng		94
58) Toluene	12.52	91	10725	0.221	ng		96
59) 2-Hexanone	12.90	43	10963	0.324	ng		97
60) Dibromochloromethane	13.04	129	3698	0.245	ng		91
61) 1,2-Dibromoethane	13.37	107	3146	0.219	ng		97
62) n-Butyl Acetate	13.75	43	11472	0.316	ng		98
63) n-Octane	13.89	57	1833	0.181	ng		94
64) Tetrachloroethene	14.00	166	3702	0.243	ng		99
65) Chlorobenzene	14.86	112	7464	0.233	ng		97
66) Ethylbenzene	15.38	91	12177	0.215	ng		97
67) m- & p-Xylenes	15.61	91	20456	0.448	ng		99
68) Bromoform	15.65	173	3012	0.218	ng		96
69) Styrene	16.07	104	6276	0.195	ng		99
70) o-Xylene	16.21	91	9988	0.222	ng		100
71) n-Nonane	16.58	43	4971	0.172	ng		94
72) 1,1,2,2-Tetrachloroethane	16.18	83	4501	0.223	ng		99
74) Cumene	17.00	105	12646	0.232	ng		99
75) alpha-Pinene	17.49	93	6305	0.227	ng		96
76) n-Propylbenzene	17.65	91	14909	0.218	ng		99
77) 3-Ethyltoluene	17.00	105	12646	No Calib			
78) 4-Ethyltoluene	17.83	105	11218	0.216	ng		98
79) 1,3,5-Trimethylbenzene	17.93	105	10287	0.230	ng		99
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.50	105	860	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	10213	0.220	ng		99
83) n-Decane	16.79	58	119	No Calib		#	
84) Benzyl Chloride	18.54	91	12921	0.358	ng		93
85) 1,3-Dichlorobenzene	18.55	146	6691	0.230	ng		100
86) 1,4-Dichlorobenzene	18.63	146	6865	0.239	ng		96
87) sec-Butylbenzene	18.72	105	13729	0.229	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	11375	0.218	ng		97
89) 1,2,3-Trimethylbenzene	18.41	105	10213	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	6408	0.233	ng		98
91) d-Limonene	19.06	68	3139	0.197	ng		97
92) 1,2-Dibromo-3-Chloropr...	19.49	157	4496	0.418	ng		87
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.82	180	9047	0.378	ng		98
95) Naphthalene	20.92	128	10029	0.176	ng		94
96) n-Dodecane	18.90	58	384	No Calib		#	
97) Hexachlorobutadiene	21.28	225	3905	0.223	ng		98
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	10158	0.227	ng		98
100) n-Butylbenzene	19.37	91	11015	0.214	ng		97
101) 1,1,1,2-Tetrachloroethane	14.85	131	3013	0.245	ng		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_07\19\07192213.D Vial: 5
Acq On : 19 Jul 2022 15:54 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

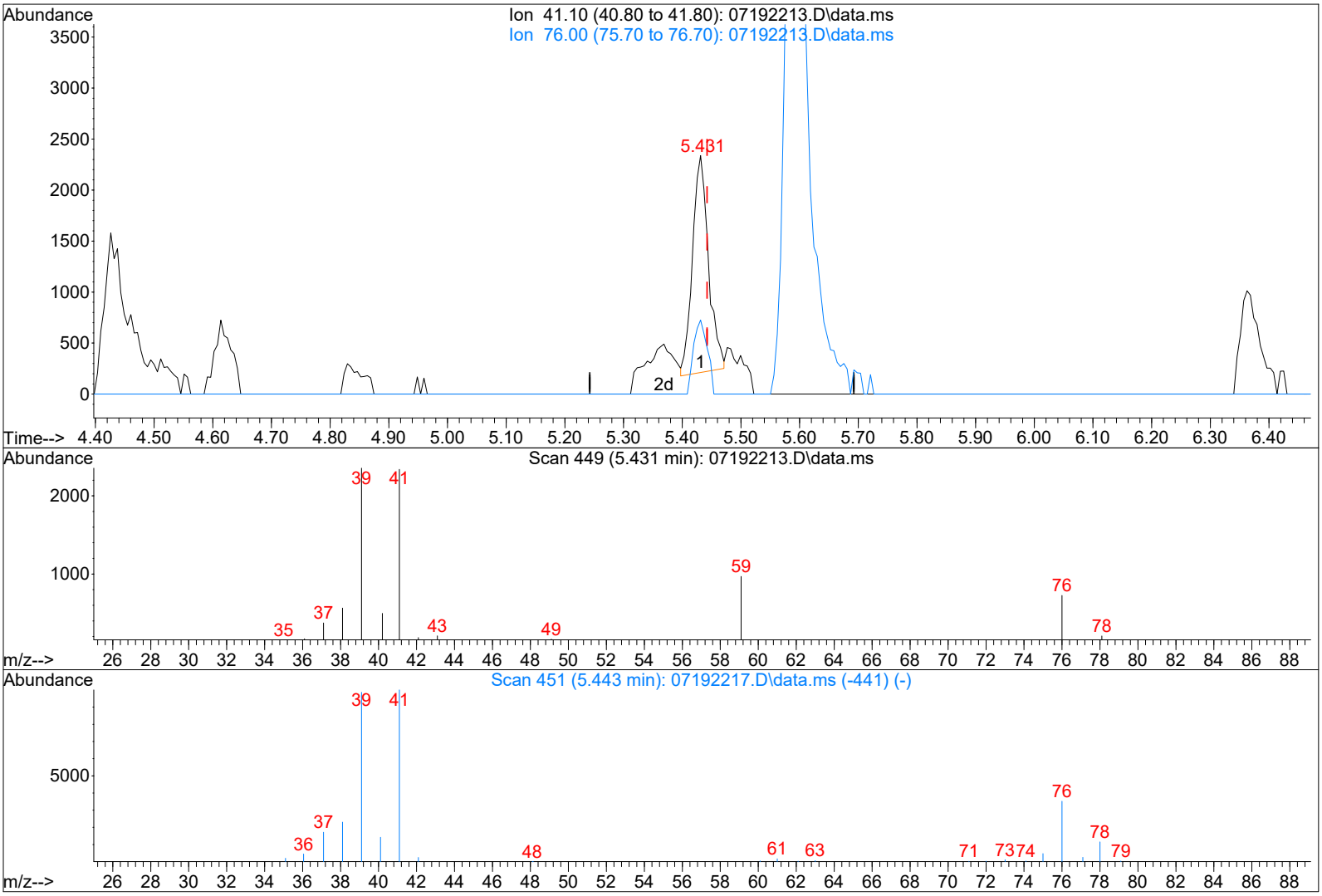
Quant Time: Jul 20 08:48:23 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2022_07\19\07192213.D Vial: 5
Acq On : 19 Jul 2022 15:54 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:35:09 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 07192213.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.431min (-0.011) 0.13ng

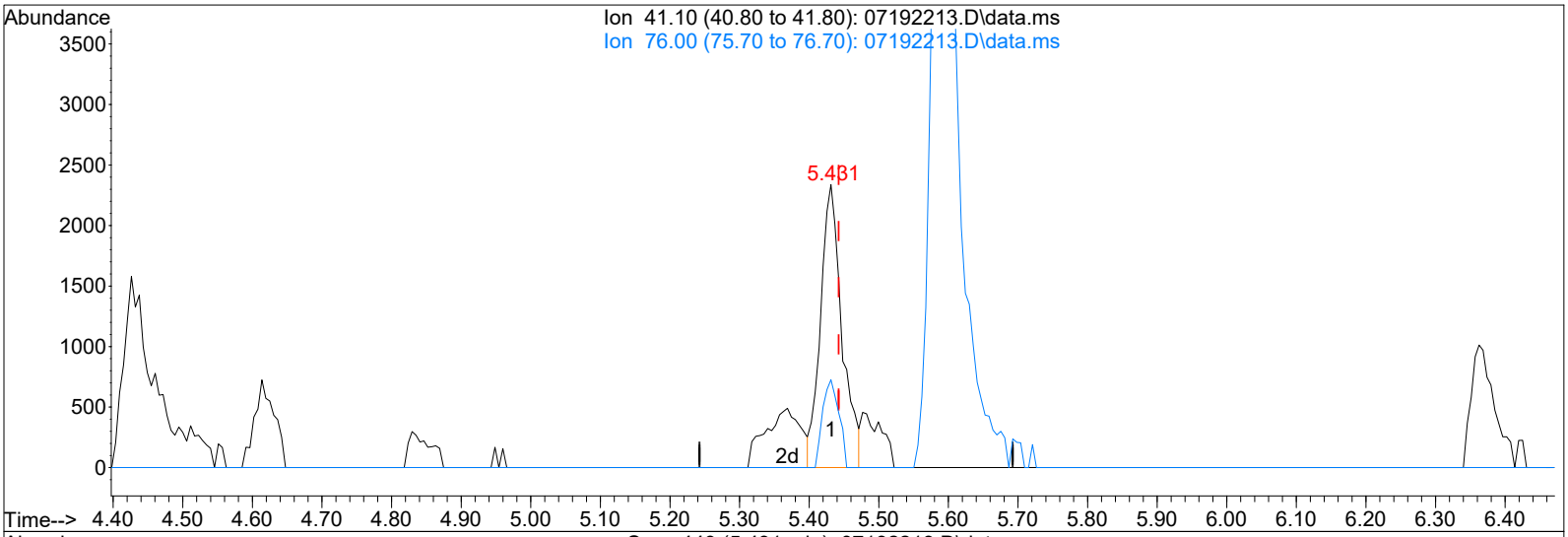
response 4048

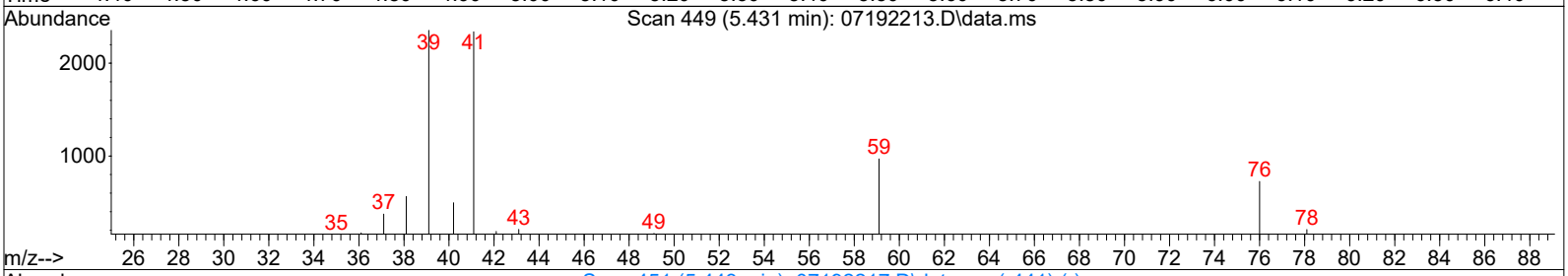
Ion	Exp%	Act%
41.10	100	100
76.00	30.40	29.17
0.00	0.00	0.00
0.00	0.00	0.00

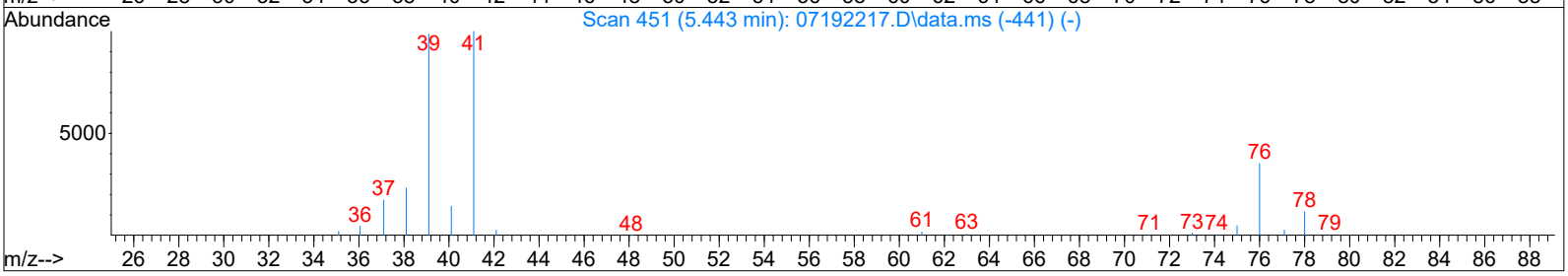
Quantitation Report (Qedit)

Data File : I:\MS09\DATA\2022_07\19\07192213.D Vial: 5
Acq On : 19 Jul 2022 15:54 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192211 (8/18)

Quant Time: Jul 20 08:35:09 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 07192213.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.431min (-0.011) 0.15ng m

response 4998

Ion	Exp%	Act%
41.10	100	100
76.00	30.40	23.63
0.00	0.00	0.00
0.00	0.00	0.00

BLC

7/20/22 7/27/22

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192214.D Vial: 6
Acq On : 19 Jul 2022 16:26 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:33:46 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	142495	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	615389	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	127009	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	304016	13.265	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.16%				
57) Toluene-d8 (SS2)	12.39	98	670892	13.468	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.76%				
73) Bromofluorobenzene (SS3)	16.79	174	264134	14.016	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 112.16%				
Target Compounds							Qvalue
2) Propene	3.28	42	8809	0.442	ng		98
3) Dichlorodifluoromethan...	3.35	85	23421	0.713	ng		99
4) Chloromethane	3.49	50	10866	0.564	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	10004	0.744	ng		99
6) Vinyl Chloride	3.67	62	9769	0.623	ng		99
7) 1,3-Butadiene	3.78	54	6782	0.641	ng		97
8) Bromomethane	4.00	94	7610	0.746	ng		96
9) Chloroethane	4.14	64	4963	0.550	ng		97
10) Ethanol	4.26	45	23459	2.008	ng		92
11) Acetonitrile	4.42	41	15794	0.407	ng		81
12) Acrolein	4.51	56	8953	1.116	ng		93
13) Acetone	4.61	58	28216	2.995	ng		100
14) Trichlorofluoromethane	4.73	101	22854	0.742	ng		98
15) 2-Propanol (Isopropanol)	4.81	45	46043	1.284	ng		91
16) Acrylonitrile	4.97	53	19175	1.066	ng		94
17) 1,1-Dichloroethene	5.23	96	8108	0.654	ng		100
18) 2-Methyl-2-Propanol (t...	5.29	59	43407	1.475	ng		94
19) Methylene Chloride	5.32	84	8484	0.620	ng		95
20) 3-Chloro-1-propene (Al...	5.43	41	18790	0.574	ng		84
21) Trichlorotrifluoroethane	5.56	151	9485	0.742	ng		98
22) Carbon Disulfide	5.58	76	61356	1.395	ng		99
23) trans-1,2-Dichloroethene	6.11	61	13117	0.653	ng		99
24) 1,1-Dichloroethane	6.29	63	15277	0.619	ng		99
25) Methyl tert-Butyl Ether	6.35	73	28306	0.717	ng		99
26) Vinyl Acetate	6.41	86	3307	1.847	ng	#	94
27) 2-Butanone (MEK)	6.64	72	10480	1.295	ng		96
28) cis-1,2-Dichloroethene	7.04	61	13054	0.674	ng		96
29) Diisopropyl Ether	7.26	87	13790	1.385	ng		98
30) Ethyl Acetate	7.26	61	12565	2.365	ng		93
31) n-Hexane	7.27	57	12784	0.572	ng		98
32) Chloroform	7.33	83	18823	0.736	ng		99
34) Tetrahydrofuran (THF)	7.74	72	9067	1.150	ng	#	85
35) Ethyl tert-Butyl Ether	7.79	87	20166	1.376	ng		99
36) 1,2-Dichloroethane	8.08	62	15834	0.733	ng		99
38) 1,1,1-Trichloroethane	8.36	97	19005	0.746	ng		100
39) Isopropyl Acetate	9.26	61	22145	No Calib			
40) 1-Butanol	9.18	56	27312	No Calib			
41) Benzene	8.86	78	32199	0.630	ng		98
42) Carbon Tetrachloride	9.03	117	16887	0.734	ng		100
43) Cyclohexane	9.18	84	23745	1.279	ng		99
44) tert-Amyl Methyl Ether	9.56	73	46708	1.336	ng		96
45) 1,2-Dichloropropane	9.82	63	8107	0.603	ng		96
46) Bromodichloromethane	10.04	83	14874	0.733	ng		100
47) Trichloroethene	10.11	130	9399	0.666	ng		99
48) 1,4-Dioxane	10.11	88	5932	0.594	ng		97
49) 2,2,4-Trimethylpentane...	10.20	57	32306	0.566	ng		97
50) Methyl Methacrylate	10.37	100	6105	1.295	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192214.D Vial: 6
Acq On : 19 Jul 2022 16:26 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

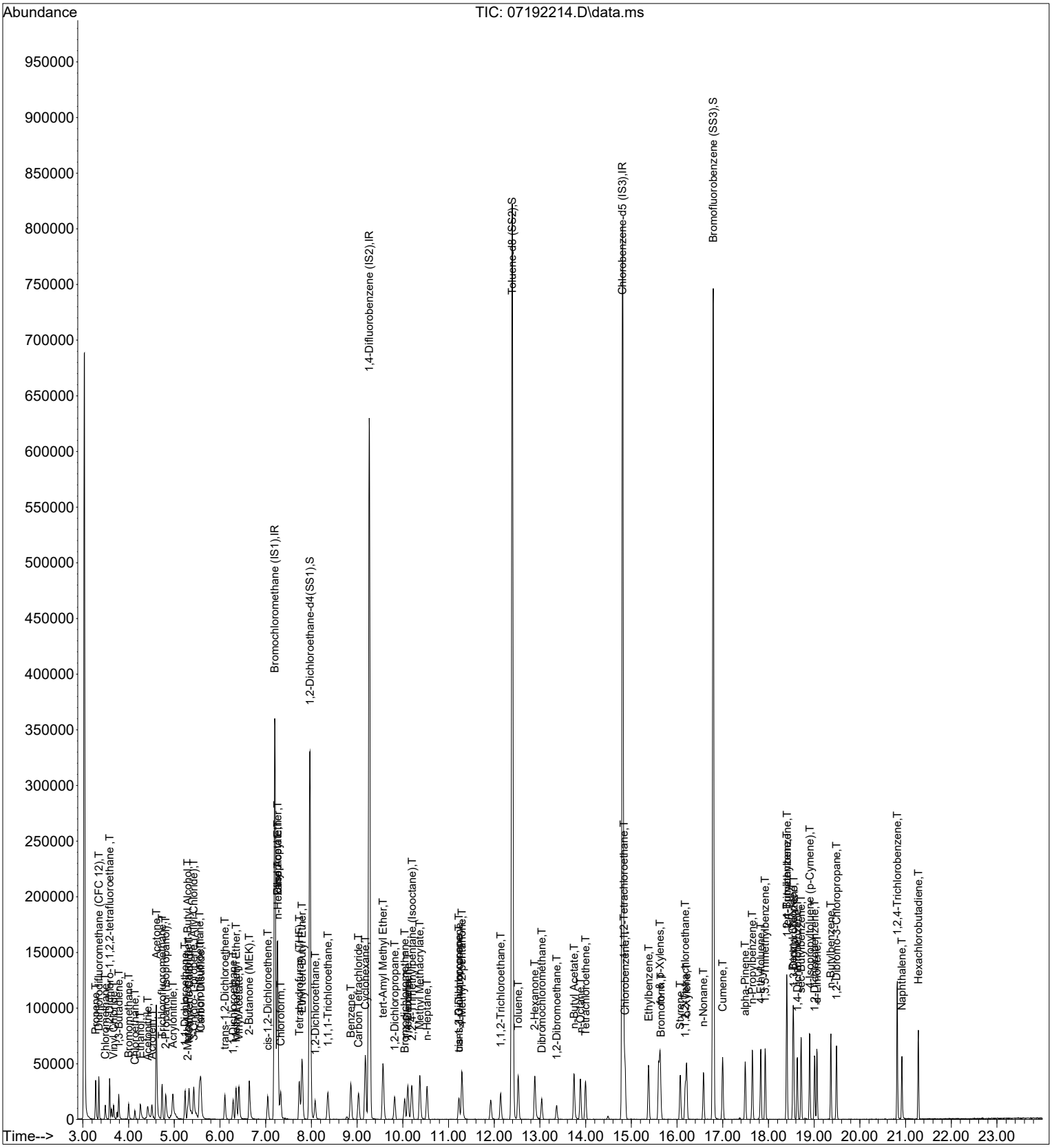
Quant Time: Jul 20 08:33:46 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	7451	0.636	ng		98
52) cis-1,3-Dichloropropene	11.23	75	13055	0.653	ng		98
53) 4-Methyl-2-pentanone	11.30	58	13596	1.137	ng		98
54) trans-1,3-Dichloropropene	11.23	75	13055	0.628	ng		98
55) 1,1,2-Trichloroethane	12.14	97	8797	0.663	ng		99
58) Toluene	12.52	91	35916	0.732	ng		99
59) 2-Hexanone	12.89	43	38275	1.119	ng		99
60) Dibromochloromethane	13.04	129	11888	0.781	ng		97
61) 1,2-Dibromoethane	13.37	107	10647	0.735	ng		99
62) n-Butyl Acetate	13.75	43	40312	1.099	ng		99
63) n-Octane	13.89	57	6676	0.654	ng		99
64) Tetrachloroethene	14.00	166	12281	0.799	ng		100
65) Chlorobenzene	14.86	112	23778	0.736	ng		100
66) Ethylbenzene	15.38	91	41645	0.726	ng		100
67) m- & p-Xylenes	15.62	91	68828	1.492	ng	#	67
68) Bromoform	15.65	173	10323	0.738	ng		99
69) Styrene	16.07	104	22312	0.685	ng		100
70) o-Xylene	16.21	91	33890	0.747	ng		98
71) n-Nonane	16.58	43	17159	0.589	ng		99
72) 1,1,2,2-Tetrachloroethane	16.18	83	14972	0.734	ng		97
74) Cumene	17.00	105	42461	0.773	ng		100
75) alpha-Pinene	17.49	93	20424	0.728	ng		96
76) n-Propylbenzene	17.65	91	51393	0.745	ng		99
77) 3-Ethyltoluene	17.00	105	42461	No Calib			
78) 4-Ethyltoluene	17.83	105	41478	0.792	ng		99
79) 1,3,5-Trimethylbenzene	17.93	105	35259	0.779	ng		99
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	2787	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	35894	0.767	ng		99
83) n-Decane	16.79	58	248	No Calib		#	
84) Benzyl Chloride	18.54	91	50202	1.378	ng		97
85) 1,3-Dichlorobenzene	18.55	146	21541	0.733	ng		100
86) 1,4-Dichlorobenzene	18.63	146	22471	0.774	ng		97
87) sec-Butylbenzene	18.72	105	47444	0.784	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	39654	0.753	ng		99
89) 1,2,3-Trimethylbenzene	18.41	105	35894	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	21123	0.761	ng		97
91) d-Limonene	19.06	68	11686	0.727	ng		98
92) 1,2-Dibromo-3-Chloropr...	19.49	157	15773	1.453	ng		90
93) n-Undecane	17.93	58	593	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.82	180	34612	1.431	ng		98
95) Naphthalene	20.92	128	40469	0.701	ng		99
96) n-Dodecane	18.71	58	124	No Calib		#	
97) Hexachlorobutadiene	21.28	225	13421	0.759	ng		99
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	34548	0.764	ng		98
100) n-Butylbenzene	19.37	91	38248	0.736	ng		98
101) 1,1,1,2-Tetrachloroethane	14.84	131	10228	0.822	ng		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_07\19\07192214.D Vial: 6
Acq On : 19 Jul 2022 16:26 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:33:46 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192215.D Vial: 6
Acq On : 19 Jul 2022 16:57 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:32:25 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	140047	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	608267	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	124358	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	298592	13.257	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.08%				
57) Toluene-d8 (SS2)	12.39	98	659206	13.515	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.16%				
73) Bromofluorobenzene (SS3)	16.79	174	261688	14.182	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 113.44%				
Target Compounds							Qvalue
2) Propene	3.27	42	14502	0.740	ng		98
3) Dichlorodifluoromethan...	3.34	85	37784	1.170	ng		98
4) Chloromethane	3.48	50	16878	0.892	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	16398	1.242	ng		99
6) Vinyl Chloride	3.66	62	15675	1.017	ng		100
7) 1,3-Butadiene	3.77	54	10509	1.011	ng		93
8) Bromomethane	3.99	94	11659	1.163	ng		97
9) Chloroethane	4.13	64	8289	0.934	ng		99
10) Ethanol	4.26	45	37182	3.239	ng		98
11) Acetonitrile	4.41	41	25368	0.665	ng		96
12) Acrolein	4.50	56	14398	1.827	ng		100
13) Acetone	4.60	58	46642	5.037	ng		97
14) Trichlorofluoromethane	4.73	101	36311	1.199	ng		100
15) 2-Propanol (Isopropanol)	4.81	45	74662	2.119	ng		91
16) Acrylonitrile	4.96	53	32640	1.847	ng		94
17) 1,1-Dichloroethene	5.23	96	13465	1.105	ng		96
18) 2-Methyl-2-Propanol (t...	5.28	59	72550	2.508	ng		94
19) Methylene Chloride	5.32	84	14699	1.092	ng		96
20) 3-Chloro-1-propene (Al...	5.42	41	33706	1.048	ng		83
21) Trichlorotrifluoroethane	5.54	151	15035	1.197	ng		97
22) Carbon Disulfide	5.57	76	99903	2.311	ng		100
23) trans-1,2-Dichloroethene	6.10	61	21133	1.071	ng		99
24) 1,1-Dichloroethane	6.28	63	25315	1.044	ng		99
25) Methyl tert-Butyl Ether	6.34	73	46472	1.197	ng		100
26) Vinyl Acetate	6.41	86	5539	3.148	ng		99
27) 2-Butanone (MEK)	6.63	72	16816	2.114	ng	#	90
28) cis-1,2-Dichloroethene	7.04	61	20589	1.082	ng		99
29) Diisopropyl Ether	7.25	87	22170	2.265	ng		98
30) Ethyl Acetate	7.25	61	21488	4.116	ng		98
31) n-Hexane	7.27	57	20109	0.916	ng		98
32) Chloroform	7.32	83	30752	1.223	ng		99
34) Tetrahydrofuran (THF)	7.73	72	15239	1.967	ng	#	88
35) Ethyl tert-Butyl Ether	7.79	87	32445	2.252	ng		97
36) 1,2-Dichloroethane	8.08	62	25845	1.217	ng		98
38) 1,1,1-Trichloroethane	8.36	97	30969	1.229	ng		99
39) Isopropyl Acetate	9.26	61	20964	No Calib			
40) 1-Butanol	9.18	56	43766	No Calib			
41) Benzene	8.86	78	53046	1.049	ng		100
42) Carbon Tetrachloride	9.03	117	26989	1.187	ng		100
43) Cyclohexane	9.17	84	38720	2.110	ng		99
44) tert-Amyl Methyl Ether	9.56	73	76183	2.204	ng		98
45) 1,2-Dichloropropane	9.81	63	12650	0.951	ng		97
46) Bromodichloromethane	10.04	83	24309	1.212	ng		99
47) Trichloroethene	10.10	130	15533	1.113	ng		98
48) 1,4-Dioxane	10.09	88	9444	0.957	ng		99
49) 2,2,4-Trimethylpentane...	10.20	57	53375	0.946	ng		98
50) Methyl Methacrylate	10.37	100	10055	2.158	ng		94

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192215.D Vial: 6
Acq On : 19 Jul 2022 16:57 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

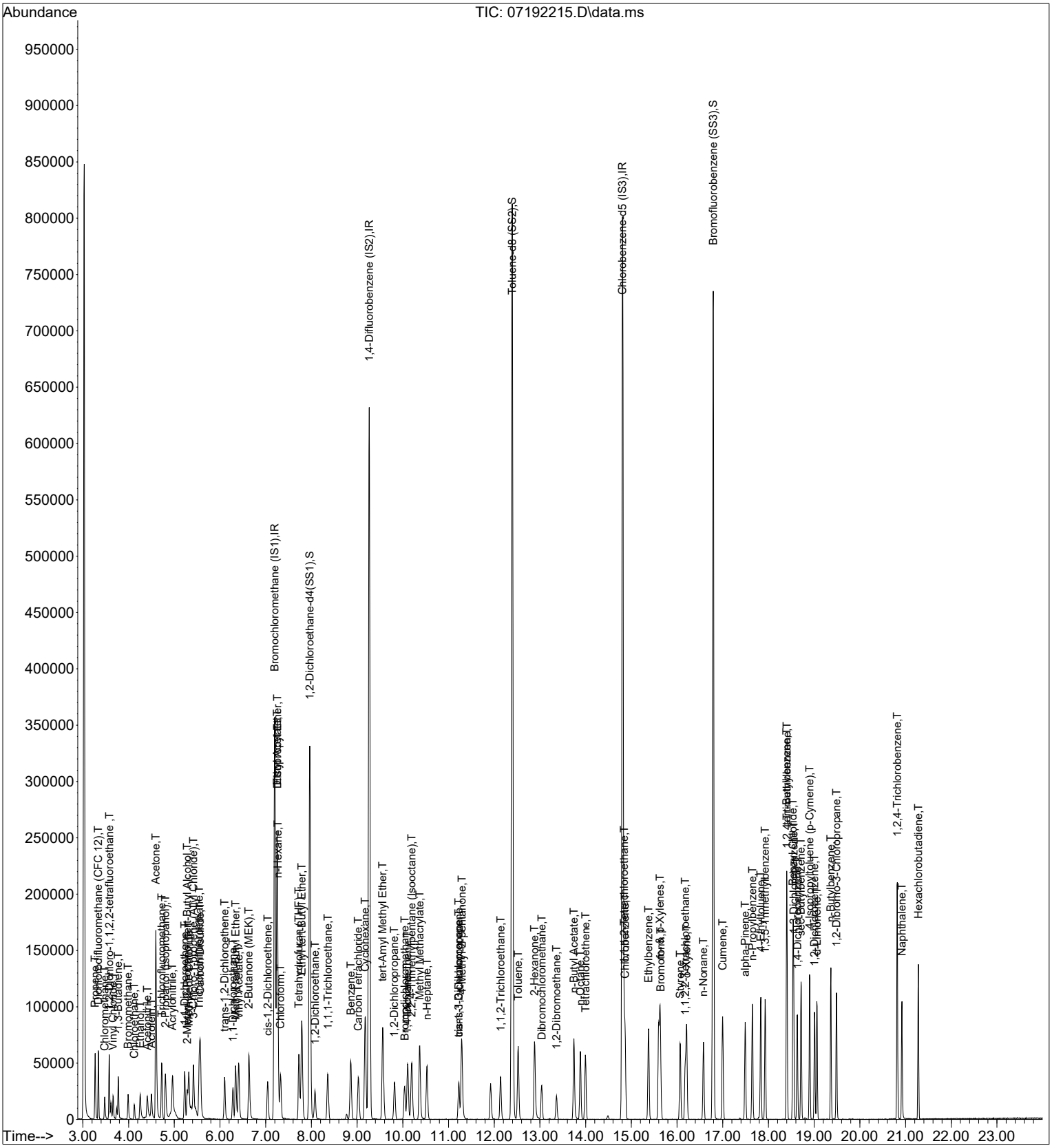
Quant Time: Jul 20 08:32:25 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.53	71	12693	1.097	ng		99
52) cis-1,3-Dichloropropene	11.22	75	21745	1.100	ng		99
53) 4-Methyl-2-pentanone	11.29	58	22745	1.925	ng		99
54) trans-1,3-Dichloropropene	11.22	75	21745	1.058	ng		99
55) 1,1,2-Trichloroethane	12.14	97	14537	1.109	ng		98
58) Toluene	12.52	91	57718	1.202	ng		99
59) 2-Hexanone	12.88	43	64328	1.921	ng		100
60) Dibromochloromethane	13.04	129	20280	1.360	ng		100
61) 1,2-Dibromoethane	13.36	107	17253	1.216	ng		98
62) n-Butyl Acetate	13.74	43	68022	1.894	ng		99
63) n-Octane	13.89	57	10533	1.053	ng		97
64) Tetrachloroethene	14.00	166	19578	1.301	ng		99
65) Chlorobenzene	14.86	112	39220	1.240	ng		99
66) Ethylbenzene	15.37	91	68646	1.223	ng		99
67) m- & p-Xylenes	15.62	91	112463	2.491	ng		100
68) Bromoform	15.64	173	17524	1.280	ng		100
69) Styrene	16.07	104	38722	1.214	ng		99
70) o-Xylene	16.21	91	56798	1.278	ng		99
71) n-Nonane	16.58	43	27843	0.976	ng		99
72) 1,1,2,2-Tetrachloroethane	16.18	83	24880	1.247	ng		100
74) Cumene	17.00	105	69682	1.295	ng		99
75) alpha-Pinene	17.49	93	33668	1.226	ng		95
76) n-Propylbenzene	17.65	91	85718	1.270	ng		98
77) 3-Ethyltoluene	17.00	105	69682	No Calib			
78) 4-Ethyltoluene	17.83	105	69188	1.350	ng		99
79) 1,3,5-Trimethylbenzene	17.93	105	58275	1.315	ng		100
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	4396	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	59527	1.298	ng		100
83) n-Decane	16.99	58	317	No Calib		#	
84) Benzyl Chloride	18.54	91	88606	2.483	ng		97
85) 1,3-Dichlorobenzene	18.55	146	36332	1.262	ng		99
86) 1,4-Dichlorobenzene	18.63	146	36498	1.284	ng		99
87) sec-Butylbenzene	18.71	105	78983	1.333	ng		98
88) 4-Isopropyltoluene (p-...	18.90	119	67071	1.301	ng		99
89) 1,2,3-Trimethylbenzene	18.41	105	59527	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	35732	1.314	ng		97
91) d-Limonene	19.06	68	19352	1.230	ng		98
92) 1,2-Dibromo-3-Chloropr...	19.49	157	26311	2.475	ng		92
93) n-Undecane	17.93	58	1351	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.82	180	59659	2.518	ng		99
95) Naphthalene	20.92	128	71383	1.263	ng		99
96) n-Dodecane	18.71	58	335	No Calib		#	
97) Hexachlorobutadiene	21.28	225	22104	1.278	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	57642	1.302	ng		97
100) n-Butylbenzene	19.37	91	64511	1.268	ng		97
101) 1,1,1,2-Tetrachloroethane	14.85	131	16553	1.359	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_07\19\07192215.D Vial: 6
Acq On : 19 Jul 2022 16:57 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:32:25 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192216.D Vial: 6
Acq On : 19 Jul 2022 17:29 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:31:07 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	143957	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	620781	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	127996	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.98	65	303918	13.126	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%			
57) Toluene-d8 (SS2)	12.40	98	680332	13.552	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.40%			
73) Bromofluorobenzene (SS3)	16.79	174	276130	14.539	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.32%			
Target Compounds						Qvalue
2) Propene	3.26	42	66411	3.299	ng	98
3) Dichlorodifluoromethan...	3.33	85	154809	4.662	ng	100
4) Chloromethane	3.47	50	69543	3.575	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	66965	4.933	ng	99
6) Vinyl Chloride	3.65	62	64097	4.044	ng	100
7) 1,3-Butadiene	3.77	54	47557	4.452	ng	99
8) Bromomethane	3.99	94	49142	4.767	ng	99
9) Chloroethane	4.13	64	34970	3.835	ng	99
10) Ethanol	4.27	45	155302	13.160	ng	99
11) Acetonitrile	4.42	41	107704	2.746	ng	98
12) Acrolein	4.51	56	62925	7.767	ng	94
13) Acetone	4.61	58	187218	19.669	ng	95
14) Trichlorofluoromethane	4.73	101	151484	4.866	ng	100
15) 2-Propanol (Isopropanol)	4.82	45	286486	7.911	ng	94
16) Acrylonitrile	4.98	53	138156	7.605	ng	98
17) 1,1-Dichloroethene	5.23	96	56539	4.513	ng	100
18) 2-Methyl-2-Propanol (t...	5.29	59	302416	10.170	ng	95
19) Methylene Chloride	5.33	84	57771	4.176	ng	99
20) 3-Chloro-1-propene (Al...	5.43	41	119277	3.608	ng	90
21) Trichlorotrifluoroethane	5.55	151	63282	4.899	ng	98
22) Carbon Disulfide	5.57	76	418912	9.428	ng	100
23) trans-1,2-Dichloroethene	6.12	61	90475	4.461	ng	99
24) 1,1-Dichloroethane	6.30	63	103535	4.155	ng	100
25) Methyl tert-Butyl Ether	6.34	73	196051	4.913	ng	100
26) Vinyl Acetate	6.42	86	25871	14.302	ng	98
27) 2-Butanone (MEK)	6.64	72	70885	8.668	ng	99
28) cis-1,2-Dichloroethene	7.06	61	85598	4.376	ng	100
29) Diisopropyl Ether	7.25	87	92001	9.143	ng	98
30) Ethyl Acetate	7.25	61	88966	16.578	ng	99
31) n-Hexane	7.27	57	83685	3.708	ng	99
32) Chloroform	7.34	83	126831	4.907	ng	100
34) Tetrahydrofuran (THF)	7.72	72	65653	8.242	ng	92
35) Ethyl tert-Butyl Ether	7.79	87	137980	9.316	ng	99
36) 1,2-Dichloroethane	8.09	62	106414	4.876	ng	100
38) 1,1,1-Trichloroethane	8.37	97	128693	5.006	ng	99
39) Isopropyl Acetate	9.28	61	21656	No Calib		
40) 1-Butanol	9.18	56	182654	No Calib		
41) Benzene	8.87	78	218303	4.232	ng	98
42) Carbon Tetrachloride	9.04	117	113583	4.896	ng	100
43) Cyclohexane	9.19	84	160533	8.571	ng	99
44) tert-Amyl Methyl Ether	9.56	73	325401	9.226	ng	99
45) 1,2-Dichloropropane	9.83	63	51483	3.794	ng	98
46) Bromodichloromethane	10.05	83	104950	5.127	ng	99
47) Trichloroethene	10.12	130	65083	4.569	ng	100
48) 1,4-Dioxane	10.09	88	45037	4.472	ng	96
49) 2,2,4-Trimethylpentane...	10.20	57	217253	3.774	ng	99
50) Methyl Methacrylate	10.38	100	44861	9.432	ng	97

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192216.D Vial: 6
Acq On : 19 Jul 2022 17:29 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

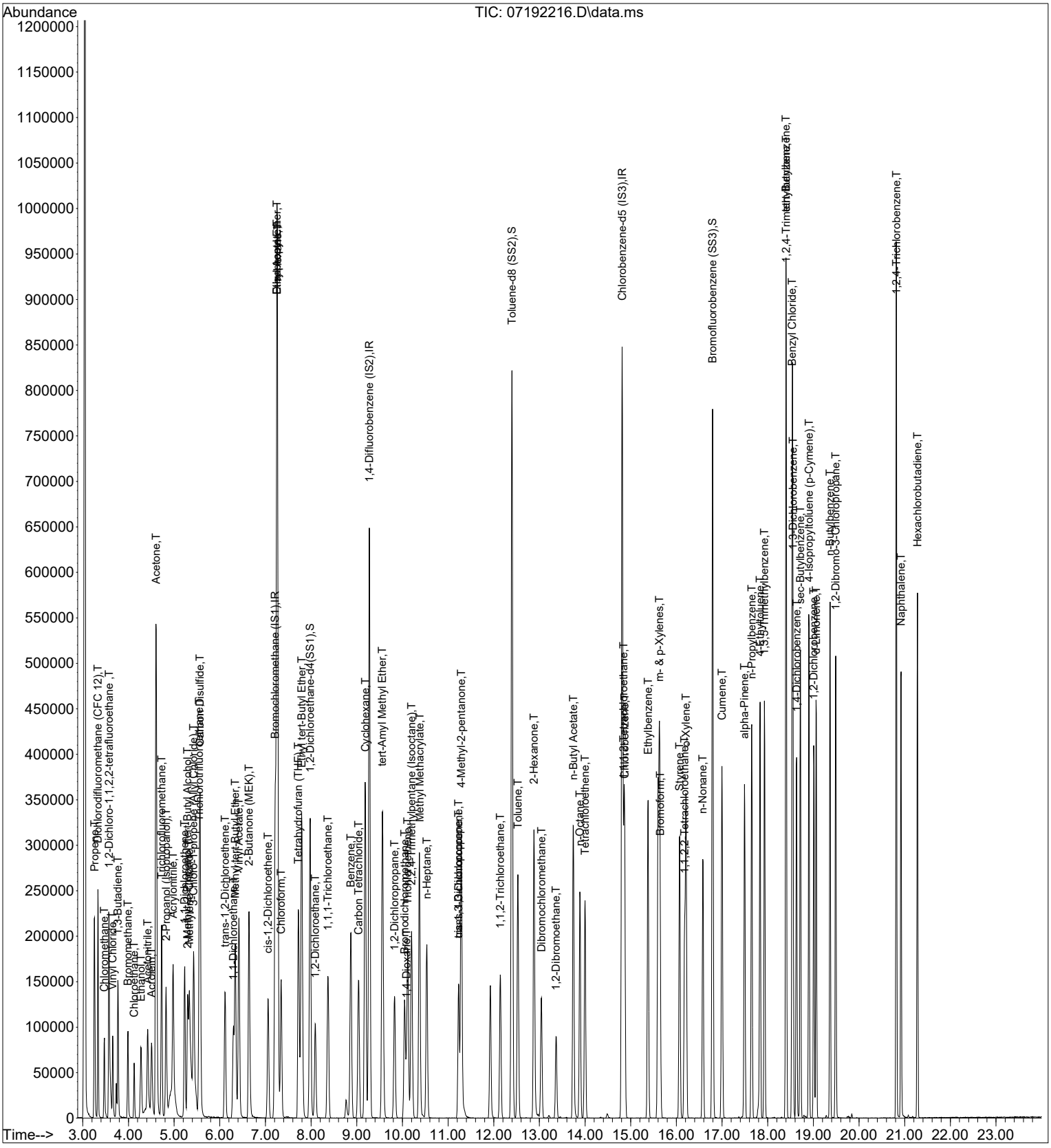
Quant Time: Jul 20 08:31:07 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	52168	4.416	ng		99
52) cis-1,3-Dichloropropene	11.23	75	95912	4.756	ng		99
53) 4-Methyl-2-pentanone	11.29	58	95649	7.931	ng		97
54) trans-1,3-Dichloropropene	11.23	75	95912	4.574	ng		99
55) 1,1,2-Trichloroethane	12.14	97	60180	4.497	ng		99
58) Toluene	12.53	91	239108	4.839	ng		100
59) 2-Hexanone	12.88	43	279260	8.104	ng		100
60) Dibromochloromethane	13.05	129	87063	5.672	ng		99
61) 1,2-Dibromoethane	13.36	107	74447	5.098	ng		100
62) n-Butyl Acetate	13.74	43	301939	8.168	ng		100
63) n-Octane	13.89	57	44953	4.367	ng		100
64) Tetrachloroethene	14.00	166	83430	5.387	ng		100
65) Chlorobenzene	14.87	112	162104	4.981	ng		100
66) Ethylbenzene	15.38	91	290141	5.022	ng		100
67) m- & p-Xylenes	15.62	91	481606	10.363	ng		100
68) Bromoform	15.65	173	81149	5.758	ng		100
69) Styrene	16.07	104	170195	5.184	ng		100
70) o-Xylene	16.21	91	236250	5.166	ng		100
71) n-Nonane	16.58	43	120117	4.091	ng		99
72) 1,1,2,2-Tetrachloroethane	16.18	83	105908	5.156	ng		98
74) Cumene	17.00	105	292224	5.277	ng		99
75) alpha-Pinene	17.49	93	148259	5.246	ng		99
76) n-Propylbenzene	17.65	91	363017	5.224	ng		99
77) 3-Ethyltoluene	17.00	105	292224	No Calib			
78) 4-Ethyltoluene	17.83	105	291592	5.526	ng		99
79) 1,3,5-Trimethylbenzene	17.93	105	251099	5.506	ng		100
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.44	105	624	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	256743	5.441	ng		99
83) n-Decane	16.99	58	837	No Calib		#	
84) Benzyl Chloride	18.54	91	429623	11.699	ng		98
85) 1,3-Dichlorobenzene	18.55	146	156111	5.269	ng		100
86) 1,4-Dichlorobenzene	18.63	146	156157	5.336	ng		100
87) sec-Butylbenzene	18.72	105	327695	5.375	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	290083	5.468	ng		99
89) 1,2,3-Trimethylbenzene	18.41	105	256743	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	149209	5.333	ng		99
91) d-Limonene	19.06	68	85893	5.303	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	121513	11.105	ng		97
93) n-Undecane	17.93	58	3787	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	265590	10.892	ng		99
95) Naphthalene	20.92	128	330503	5.682	ng		99
96) n-Dodecane	18.72	58	1400	No Calib		#	
97) Hexachlorobutadiene	21.28	225	95462	5.360	ng		98
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	242397	5.321	ng		99
100) n-Butylbenzene	19.37	91	275704	5.265	ng		98
101) 1,1,1,2-Tetrachloroethane	14.85	131	70765	5.646	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_07\19\07192216.D Vial: 6
Acq On : 19 Jul 2022 17:29 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192210 (8/18)

Quant Time: Jul 20 08:31:07 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192217.D Vial: 7
Acq On : 19 Jul 2022 18:01 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:30:17 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	146047	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	619764	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.82	54	131120	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	305271	12.996	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.00%			
57) Toluene-d8 (SS2)	12.40	98	676914	13.163	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.28%			
73) Bromofluorobenzene (SS3)	16.80	174	280622	14.424	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.36%			
Target Compounds						Qvalue
2) Propene	3.25	42	326538	15.989	ng	100
3) Dichlorodifluoromethan...	3.32	85	822730	24.421	ng	100
4) Chloromethane	3.47	50	389628	19.740	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	366558	26.615	ng	100
6) Vinyl Chloride	3.65	62	352490	21.923	ng	100
7) 1,3-Butadiene	3.77	54	267756	24.707	ng	100
8) Bromomethane	3.99	94	276285	26.417	ng	100
9) Chloroethane	4.13	64	187804	20.300	ng	100
10) Ethanol	4.31	45	816841	68.225	ng	100
11) Acetonitrile	4.44	41	563354	14.159	ng	100
12) Acrolein	4.52	56	326643	39.742	ng	100
13) Acetone	4.62	58	950401	98.422	ng	100
14) Trichlorofluoromethane	4.73	101	814449	25.790	ng	100
15) 2-Propanol (Isopropanol)	4.86	45	1673875	45.560	ng	100
16) Acrylonitrile	5.00	53	719783	39.053	ng	100
17) 1,1-Dichloroethene	5.24	96	304220	23.936	ng	100
18) 2-Methyl-2-Propanol (t...	5.33	59	1761868	58.405	ng	100
19) Methylene Chloride	5.36	84	310410	22.116	ng	100
20) 3-Chloro-1-propene (Al...	5.44	41	555400	16.560	ng	100
21) Trichlorotrifluoroethane	5.56	151	348141	26.568	ng	100
22) Carbon Disulfide	5.58	76	2249813	49.908	ng	100
23) trans-1,2-Dichloroethene	6.14	61	489919	23.809	ng	100
24) 1,1-Dichloroethane	6.32	63	556731	22.022	ng	100
25) Methyl tert-Butyl Ether	6.35	73	1101534	27.212	ng	100
26) Vinyl Acetate	6.44	86	156790	85.439	ng	100
27) 2-Butanone (MEK)	6.65	72	379020	45.684	ng	100
28) cis-1,2-Dichloroethene	7.08	61	467687	23.569	ng	100
29) Diisopropyl Ether	7.27	87	491700	48.166	ng	100
30) Ethyl Acetate	7.27	61	476089	87.443	ng	100
31) n-Hexane	7.28	57	447793	19.556	ng	100
32) Chloroform	7.37	83	683841	26.077	ng	100
34) Tetrahydrofuran (THF)	7.73	72	353189	43.706	ng	100
35) Ethyl tert-Butyl Ether	7.80	87	789761	52.560	ng	100
36) 1,2-Dichloroethane	8.11	62	582477	26.307	ng	100
38) 1,1,1-Trichloroethane	8.38	97	702655	27.378	ng	100
39) Isopropyl Acetate	9.29	61	21911	No Calib		
40) 1-Butanol	9.20	56	977930	No Calib		
41) Benzene	8.88	78	1165753	22.635	ng	100
42) Carbon Tetrachloride	9.05	117	627303	27.082	ng	100
43) Cyclohexane	9.20	84	864359	46.224	ng	100
44) tert-Amyl Methyl Ether	9.57	73	1884956	53.532	ng	100
45) 1,2-Dichloropropane	9.84	63	280617	20.712	ng	100
46) Bromodichloromethane	10.06	83	569524	27.870	ng	100
47) Trichloroethene	10.13	130	364232	25.612	ng	100
48) 1,4-Dioxane	10.09	88	246119	24.481	ng	100
49) 2,2,4-Trimethylpentane...	10.21	57	1165536	20.279	ng	100
50) Methyl Methacrylate	10.38	100	250530	52.759	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192217.D Vial: 7
Acq On : 19 Jul 2022 18:01 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:30:17 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

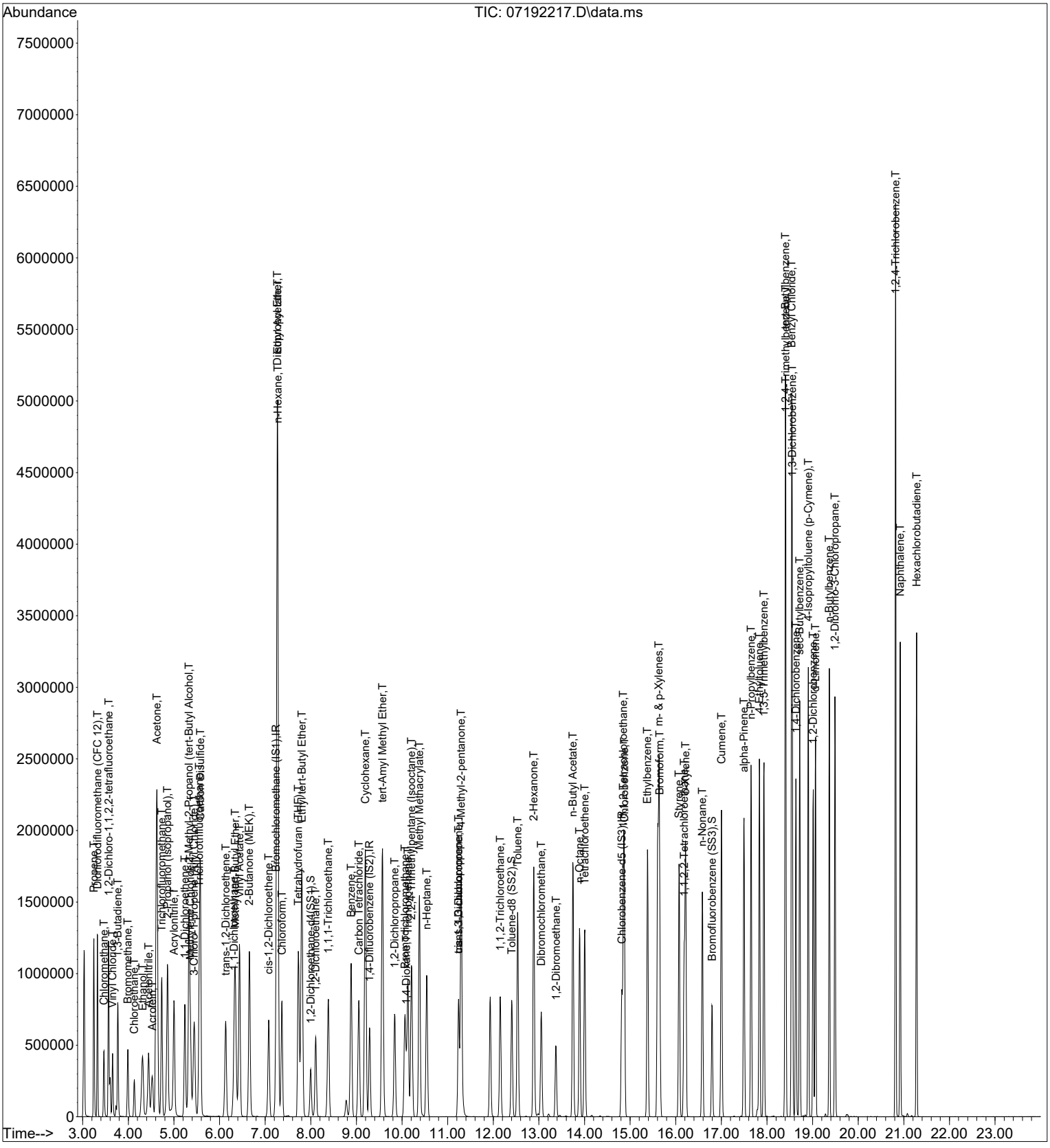
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	279317	23.684	ng		100
52) cis-1,3-Dichloropropene	11.24	75	535477	26.594	ng		100
53) 4-Methyl-2-pentanone	11.30	58	531999	44.182	ng		100
54) trans-1,3-Dichloropropene	11.24	75	535477	25.581	ng		100
55) 1,1,2-Trichloroethane	12.15	97	325575	24.366	ng		100
58) Toluene	12.53	91	1280619	25.298	ng		100
59) 2-Hexanone	12.89	43	1528810	43.310	ng		100
60) Dibromochloromethane	13.05	129	494579	31.455	ng		100
61) 1,2-Dibromoethane	13.38	107	408070	27.277	ng		100
62) n-Butyl Acetate	13.74	43	1656968	43.754	ng		100
63) n-Octane	13.89	57	241478	22.902	ng		100
64) Tetrachloroethene	14.01	166	465905	29.367	ng		100
65) Chlorobenzene	14.87	112	889655	26.685	ng		100
66) Ethylbenzene	15.38	91	1577753	26.656	ng		100
67) m- & p-Xylenes	15.63	91	2637592	55.400	ng		100
68) Bromoform	15.65	173	491576	34.051	ng		100
69) Styrene	16.07	104	957820	28.480	ng		100
70) o-Xylene	16.21	91	1295105	27.643	ng		100
71) n-Nonane	16.58	43	645825	21.472	ng		100
72) 1,1,2,2-Tetrachloroethane	16.19	83	565160	26.856	ng		100
74) Cumene	17.00	105	1612098	28.420	ng		100
75) alpha-Pinene	17.50	93	855373	29.545	ng		100
76) n-Propylbenzene	17.65	91	1947061	27.350	ng		100
77) 3-Ethyltoluene	17.00	105	1612098	No Calib			
78) 4-Ethyltoluene	17.83	105	1623709	30.040	ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	1376484	29.466	ng		100
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.43	105	1828	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	1437797	29.743	ng		100
83) n-Decane	17.00	58	8786	No Calib		#	
84) Benzyl Chloride	18.54	91	2614809	69.506	ng		100
85) 1,3-Dichlorobenzene	18.55	146	897825	29.579	ng		100
86) 1,4-Dichlorobenzene	18.63	146	888894	29.653	ng		100
87) sec-Butylbenzene	18.72	105	1788792	28.641	ng		100
88) 4-Isopropyltoluene (p-...	18.91	119	1593481	29.319	ng		100
89) 1,2,3-Trimethylbenzene	18.41	105	1437797	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	850890	29.687	ng		100
91) d-Limonene	19.06	68	481491	29.016	ng		100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	705695	62.956	ng		100
93) n-Undecane	17.93	58	19326	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	1660401	66.475	ng		100
95) Naphthalene	20.92	128	2021021	33.919	ng		100
96) n-Dodecane	18.72	58	8262	No Calib		#	
97) Hexachlorobutadiene	21.28	225	544770	29.862	ng		100
98) Cyclohexanone	15.62	55	816	No Calib		#	
99) tert-Butylbenzene	18.41	119	1364488	29.238	ng		100
100) n-Butylbenzene	19.37	91	1511223	28.169	ng		100
101) 1,1,1,2-Tetrachloroethane	14.85	131	394818	30.748	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192217.D Vial: 7
Acq On : 19 Jul 2022 18:01 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:30:17 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192218.D Vial: 7
Acq On : 19 Jul 2022 18:33 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:39:19 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	151621	12.500	ng		0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	634185	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.82	54	134500	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	308237	12.640	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.12%				
57) Toluene-d8 (SS2)	12.41	98	688310	13.048	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.40%				
73) Bromofluorobenzene (SS3)	16.80	174	290837	14.573	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 116.56%				
Target Compounds							Qvalue
2) Propene	3.24	42	647372	30.533	ng		99
3) Dichlorodifluoromethan...	3.32	85	1540428	44.043	ng		99
4) Chloromethane	3.47	50	702597	34.288	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	721340	50.450	ng		100
6) Vinyl Chloride	3.66	62	689305	41.295	ng		99
7) 1,3-Butadiene	3.77	54	531991	47.284	ng		99
8) Bromomethane	3.99	94	527972	48.625	ng		100
9) Chloroethane	4.14	64	350366	36.480	ng		100
10) Ethanol	4.33	45	1525424	122.725	ng		99
11) Acetonitrile	4.46	41	1075831	26.045	ng		100
12) Acrolein	4.53	56	615299	72.111	ng		100
13) Acetone	4.64	58	1779531	177.510	ng		100
14) Trichlorofluoromethane	4.74	101	1536907	46.877	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	3010315	78.924	ng		99
16) Acrylonitrile	5.02	53	1361397	71.149	ng		100
17) 1,1-Dichloroethene	5.24	96	576371	43.682	ng		100
18) 2-Methyl-2-Propanol (t...	5.35	59	3259816	104.088	ng		99
19) Methylene Chloride	5.37	84	589104	40.429	ng		100
20) 3-Chloro-1-propene (Al...	5.45	41	1038100	29.815	ng		99
21) Trichlorotrifluoroethane	5.56	151	677721	49.818	ng		98
22) Carbon Disulfide	5.58	76	4238422	90.565	ng		99
23) trans-1,2-Dichloroethene	6.14	61	939875	43.997	ng		99
24) 1,1-Dichloroethane	6.33	63	1056827	40.266	ng		100
25) Methyl tert-Butyl Ether	6.35	73	2099782	49.965	ng		100
26) Vinyl Acetate	6.45	86	305396	160.300	ng	#	96
27) 2-Butanone (MEK)	6.66	72	717032	83.248	ng		99
28) cis-1,2-Dichloroethene	7.09	61	893988	43.395	ng		99
29) Diisopropyl Ether	7.27	87	958511	90.441	ng	#	93
30) Ethyl Acetate	7.28	61	920710	162.889	ng		98
31) n-Hexane	7.28	57	867252	36.482	ng		100
32) Chloroform	7.38	83	1294888	47.563	ng		100
34) Tetrahydrofuran (THF)	7.74	72	667201	79.529	ng		100
35) Ethyl tert-Butyl Ether	7.81	87	1506576	96.579	ng		100
36) 1,2-Dichloroethane	8.12	62	1103063	47.988	ng		100
38) 1,1,1-Trichloroethane	8.39	97	1331940	50.716	ng		100
39) Isopropyl Acetate	9.30	61	21970	No Calib			
40) 1-Butanol	9.20	56	1858521	No Calib			
41) Benzene	8.89	78	2193829	41.627	ng		100
42) Carbon Tetrachloride	9.06	117	1199029	50.587	ng		100
43) Cyclohexane	9.20	84	1642131	85.820	ng		100
44) tert-Amyl Methyl Ether	9.58	73	3612751	100.267	ng		100
45) 1,2-Dichloropropane	9.85	63	529454	38.190	ng		99
46) Bromodichloromethane	10.07	83	1097900	52.504	ng		99
47) Trichloroethene	10.14	130	700936	48.168	ng		100
48) 1,4-Dioxane	10.10	88	468786	45.568	ng		99
49) 2,2,4-Trimethylpentane...	10.21	57	2201253	37.428	ng		100
50) Methyl Methacrylate	10.39	100	480034	98.792	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192218.D Vial: 7
Acq On : 19 Jul 2022 18:33 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:39:19 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

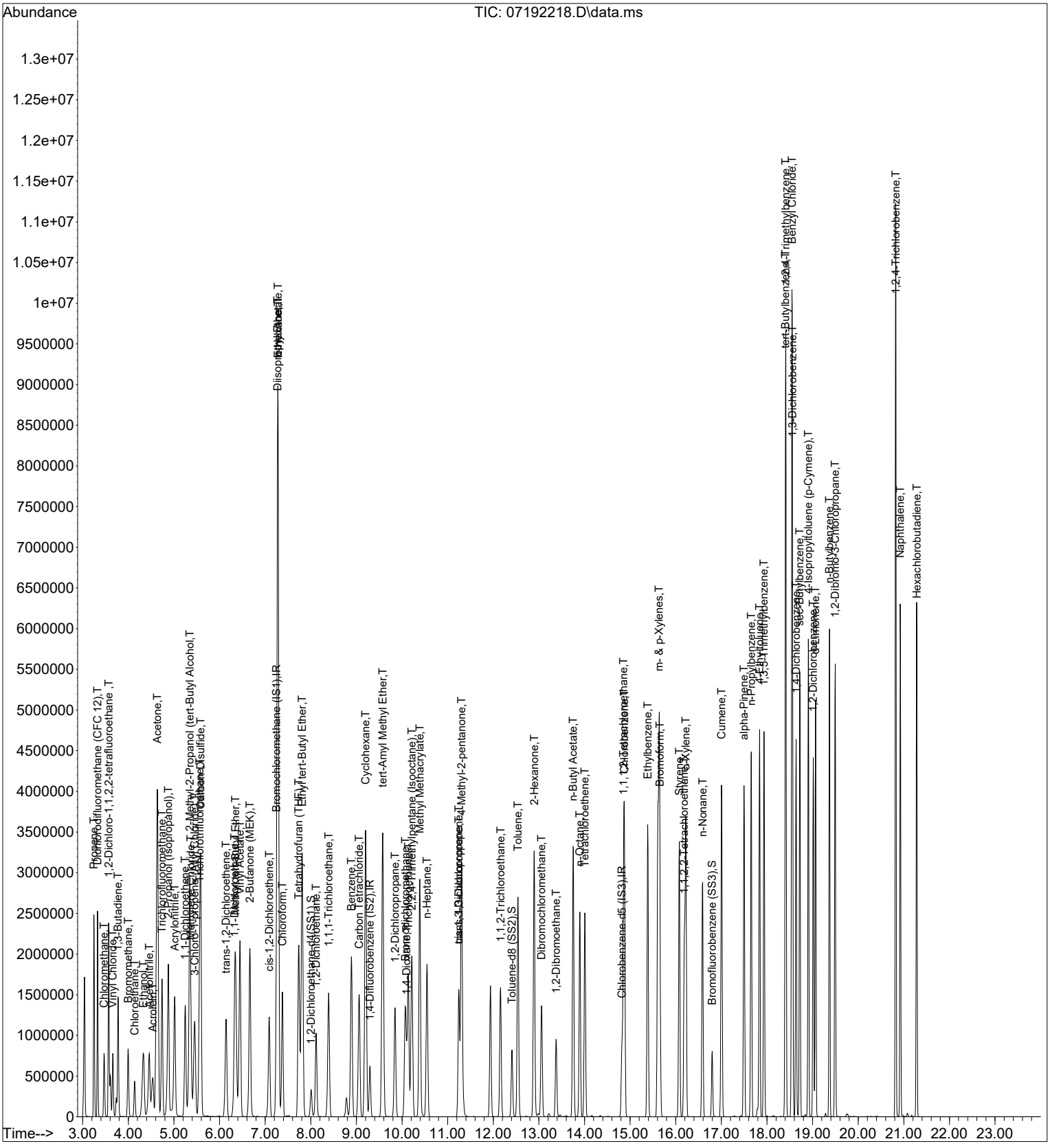
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.55	71	529268	43.858	ng		100
52) cis-1,3-Dichloropropene	11.25	75	1029958	49.989	ng		100
53) 4-Methyl-2-pentanone	11.30	58	1014093	82.304	ng		99
54) trans-1,3-Dichloropropene	11.25	75	1029958	48.085	ng		100
55) 1,1,2-Trichloroethane	12.16	97	622062	45.497	ng		100
58) Toluene	12.54	91	2434818	46.890	ng		100
59) 2-Hexanone	12.90	43	2907427	80.295	ng		100
60) Dibromochloromethane	13.06	129	950822	58.953	ng		99
61) 1,2-Dibromoethane	13.37	107	783985	51.088	ng		100
62) n-Butyl Acetate	13.75	43	3145336	80.970	ng		100
63) n-Octane	13.90	57	458036	42.349	ng		99
64) Tetrachloroethene	14.01	166	908250	55.810	ng		100
65) Chlorobenzene	14.87	112	1719838	50.291	ng		100
66) Ethylbenzene	15.39	91	2996097	49.347	ng		99
67) m- & p-Xylenes	15.63	91	5057932	103.568	ng		99
68) Bromoform	15.65	173	962218	64.976	ng		99
69) Styrene	16.08	104	1836546	53.235	ng		99
70) o-Xylene	16.22	91	2465904	51.310	ng		99
71) n-Nonane	16.59	43	1221622	39.594	ng		99
72) 1,1,2,2-Tetrachloroethane	16.19	83	1077981	49.938	ng		99
74) Cumene	17.00	105	3057379	52.544	ng		99
75) alpha-Pinene	17.50	93	1632826	54.980	ng		99
76) n-Propylbenzene	17.66	91	3672016	50.283	ng		99
77) 3-Ethyltoluene	17.00	105	3057379	No Calib			
78) 4-Ethyltoluene	17.84	105	3025114	54.560	ng		98
79) 1,3,5-Trimethylbenzene	17.93	105	2621376	54.705	ng		99
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.43	105	3610	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.41	105	2756050	55.581	ng		99
83) n-Decane	17.00	58	14595	No Calib		#	
84) Benzyl Chloride	18.55	91	5101354	132.195	ng		99
85) 1,3-Dichlorobenzene	18.56	146	1754558	56.351	ng		100
86) 1,4-Dichlorobenzene	18.64	146	1723731	56.058	ng		100
87) sec-Butylbenzene	18.72	105	3373202	52.653	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	3038912	54.510	ng		100
89) 1,2,3-Trimethylbenzene	18.41	105	2756050	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	1645820	55.979	ng		99
91) d-Limonene	19.06	68	923777	54.271	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.50	157	1386750	120.606	ng		99
93) n-Undecane	17.93	58	36982	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	3174135	123.884	ng		100
95) Naphthalene	20.92	128	3883364	63.537	ng		99
96) n-Dodecane	18.72	58	16465	No Calib		#	
97) Hexachlorobutadiene	21.28	225	1050598	56.141	ng		100
98) Cyclohexanone	15.62	55	3469	No Calib		#	
99) tert-Butylbenzene	18.41	119	2599148	54.295	ng		99
100) n-Butylbenzene	19.37	91	2853427	51.852	ng		99
101) 1,1,1,2-Tetrachloroethane	14.86	131	767068	58.238	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192218.D Vial: 7
Acq On : 19 Jul 2022 18:33 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:39:19 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192219.D Vial: 7
Acq On : 19 Jul 2022 19:05 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:40:42 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.26	130	156179	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	645807	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.82	54	139229	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	314540	12.522	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.16%				
57) Toluene-d8 (SS2)	12.42	98	706821	12.944	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.52%				
73) Bromofluorobenzene (SS3)	16.80	174	297190	14.386	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 115.12%				
Target Compounds							Qvalue
2) Propene	3.25	42	1296906	59.382	ng		99
3) Dichlorodifluoromethan...	3.33	85	2944383	81.727	ng		99
4) Chloromethane	3.47	50	1151040	54.534	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	1426056	96.826	ng		99
6) Vinyl Chloride	3.67	62	1433498	83.371	ng		99
7) 1,3-Butadiene	3.78	54	1123393	96.935	ng		96
8) Bromomethane	4.00	94	1030256	92.116	ng		100
9) Chloroethane	4.15	64	682138	68.951	ng		100
10) Ethanol	4.35	45	2984413	233.097	ng		100
11) Acetonitrile	4.48	41	2095972	49.261	ng		99
12) Acrolein	4.55	56	1203105	136.885	ng		99
13) Acetone	4.65	58	3465569	335.605	ng		96
14) Trichlorofluoromethane	4.74	101	2958868	87.615	ng		100
15) 2-Propanol (Isopropanol)	4.90	45	5538038	140.957	ng		99
16) Acrylonitrile	5.03	53	2624443	133.154	ng		99
17) 1,1-Dichloroethene	5.26	96	1134964	83.506	ng		99
18) 2-Methyl-2-Propanol (t...	5.37	59	5094248	157.915	ng		98
19) Methylene Chloride	5.38	84	1147779	76.471	ng		99
20) 3-Chloro-1-propene (Al...	5.47	41	1942954	54.174	ng		96
21) Trichlorotrifluoroethane	5.57	151	1345455	96.015	ng		97
22) Carbon Disulfide	5.60	76	8162080	169.315	ng		99
23) trans-1,2-Dichloroethene	6.15	61	1831368	83.228	ng		99
24) 1,1-Dichloroethane	6.34	63	2055478	76.030	ng		100
25) Methyl tert-Butyl Ether	6.36	73	4047018	93.489	ng		100
26) Vinyl Acetate	6.46	86	595958	303.685	ng	#	92
27) 2-Butanone (MEK)	6.68	72	1386782	156.308	ng		98
28) cis-1,2-Dichloroethene	7.10	61	1745971	82.278	ng		99
29) Diisopropyl Ether	7.28	87	1936592	177.397	ng	#	85
30) Ethyl Acetate	7.30	61	1912448	328.470	ng		98
31) n-Hexane	7.29	57	1787795	73.012	ng		100
32) Chloroform	7.40	83	2518869	89.821	ng		100
34) Tetrahydrofuran (THF)	7.75	72	1284469	148.637	ng		99
35) Ethyl tert-Butyl Ether	7.82	87	2960973	184.273	ng		99
36) 1,2-Dichloroethane	8.13	62	2149509	90.784	ng		100
38) 1,1,1-Trichloroethane	8.40	97	2589064	96.810	ng		99
39) Isopropyl Acetate	9.30	61	22400	No Calib		#	
40) 1-Butanol	9.21	56	3623433	No Calib			
41) Benzene	8.90	78	4243398	79.069	ng		100
42) Carbon Tetrachloride	9.07	117	2332211	96.625	ng		99
43) Cyclohexane	9.21	84	3200988	164.278	ng		100
44) tert-Amyl Methyl Ether	9.58	73	7043427	191.964	ng		99
45) 1,2-Dichloropropane	9.85	63	1029914	72.952	ng		100
46) Bromodichloromethane	10.08	83	2132029	100.123	ng		100
47) Trichloroethene	10.14	130	1384687	93.442	ng		100
48) 1,4-Dioxane	10.11	88	917622	87.592	ng		99
49) 2,2,4-Trimethylpentane...	10.22	57	4238221	70.767	ng		99
50) Methyl Methacrylate	10.40	100	955316	193.068	ng		96

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192219.D Vial: 7
Acq On : 19 Jul 2022 19:05 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

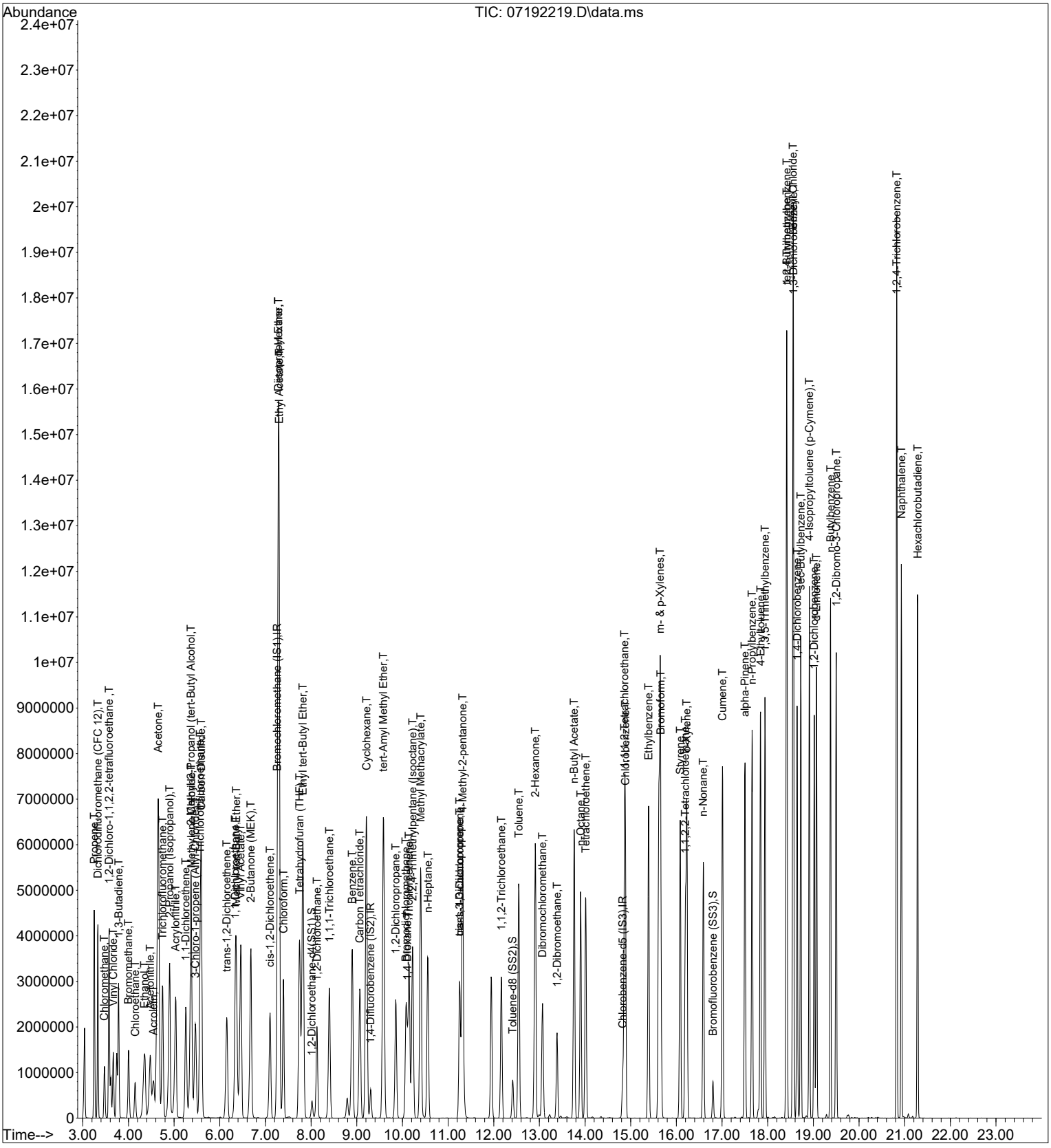
Quant Time: Jul 20 08:40:42 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.56	71	1024104	83.336	ng		99
52) cis-1,3-Dichloropropene	11.25	75	2013599	95.971	ng		100
53) 4-Methyl-2-pentanone	11.32	58	1975284	157.430	ng		98
54) trans-1,3-Dichloropropene	11.25	75	2013599	92.315	ng		100
55) 1,1,2-Trichloroethane	12.17	97	1218856	87.542	ng		99
58) Toluene	12.55	91	4712036	87.662	ng		99
59) 2-Hexanone	12.91	43	5633098	150.287	ng		99
60) Dibromochloromethane	13.07	129	1872701	112.167	ng		99
61) 1,2-Dibromoethane	13.39	107	1544354	97.219	ng		100
62) n-Butyl Acetate	13.76	43	6070829	150.972	ng		99
63) n-Octane	13.90	57	904088	80.751	ng		99
64) Tetrachloroethene	14.02	166	1804584	107.122	ng		99
65) Chlorobenzene	14.89	112	3408280	96.278	ng		100
66) Ethylbenzene	15.39	91	5781071	91.982	ng		98
67) m- & p-Xylenes	15.64	91	9875384	195.343	ng		98
68) Bromoform	15.66	173	1913297	124.812	ng		100
69) Styrene	16.08	104	3582462	100.317	ng		99
70) o-Xylene	16.23	91	4804444	96.574	ng		99
71) n-Nonane	16.59	43	2374189	74.337	ng		99
72) 1,1,2,2-Tetrachloroethane	16.20	83	2115277	94.663	ng		99
74) Cumene	17.01	105	5873845	97.519	ng		98
75) alpha-Pinene	17.50	93	3184028	103.571	ng		99
76) n-Propylbenzene	17.66	91	7014052	92.786	ng		98
77) 3-Ethyltoluene	17.01	105	5873845	No Calib			
78) 4-Ethyltoluene	17.84	105	5938771	103.472	ng		97
79) 1,3,5-Trimethylbenzene	17.94	105	5068248	102.175	ng		98
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.43	105	5962	No Calib		#	
82) 1,2,4-Trimethylbenzene	18.42	105	5295919	103.174	ng		99
83) n-Decane	17.01	58	32566	No Calib		#	
84) Benzyl Chloride	18.55	91	9609570	240.562	ng		96
85) 1,3-Dichlorobenzene	18.56	146	3408047	105.739	ng		100
86) 1,4-Dichlorobenzene	18.64	146	3380339	106.199	ng		99
87) sec-Butylbenzene	18.72	105	6441990	97.139	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	5755081	99.724	ng		98
89) 1,2,3-Trimethylbenzene	18.42	105	5295919	No Calib			
90) 1,2-Dichlorobenzene	19.02	146	3216253	105.679	ng		99
91) d-Limonene	19.07	68	1830767	103.903	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.50	157	2732118	229.542	ng		97
93) n-Undecane	17.94	58	74361	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	5704318	215.073	ng		99
95) Naphthalene	20.93	128	7309281	115.527	ng		97
96) n-Dodecane	18.72	58	32809	No Calib		#	
97) Hexachlorobutadiene	21.28	225	1953627	100.851	ng		100
98) Cyclohexanone	15.64	55	7224	No Calib		#	
99) tert-Butylbenzene	18.42	119	4962625	100.145	ng		98
100) n-Butylbenzene	19.38	91	5420068	95.146	ng		97
101) 1,1,1,2-Tetrachloroethane	14.86	131	1505205	110.398	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2022_07\19\07192219.D Vial: 7
Acq On : 19 Jul 2022 19:05 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-07192201/S35-07192209 (8/18)

Quant Time: Jul 20 08:40:42 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:30:01 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:55:08 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

7/20/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.23	130	154549	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.29	114	658534	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	137435	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.99	65	316403	12.202	ng		0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.60%				
57) Toluene-d8 (SS2)	12.40	98	718788	12.461	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.68%				
73) Bromofluorobenzene (SS3)	16.79	174	301081	12.921	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
2) Propene	3.24	42	331278m	22.373	ng		
3) Dichlorodifluoromethan...	3.32	85	829362	22.696	ng		100
4) Chloromethane	3.46	50	398187m	23.692	ng		
5) 1,2-Dichloro-1,1,2,2-t...	3.56	135	384587	24.317	ng		100
6) Vinyl Chloride	3.65	62	401118	25.652	ng		100
7) 1,3-Butadiene	3.77	54	290826	25.804	ng		98
8) Bromomethane	3.98	94	295021	24.190	ng		100
9) Chloroethane	4.13	64	194148	23.006	ng		100
10) Ethanol	4.31	45	1031651	105.499	ng		100
11) Acetonitrile	4.44	41	580650	20.199	ng		100
12) Acrolein	4.52	56	319236	42.933	ng		99
13) Acetone	4.62	58	967839	105.837	ng		97
14) Trichlorofluoromethane	4.73	101	821681	22.302	ng		99
15) 2-Propanol (Isopropanol)	4.86	45	1808902	49.176	ng		99
16) Acrylonitrile	5.00	53	733202	46.922	ng		100
17) 1,1-Dichloroethene	5.23	96	315337	24.343	ng		98
18) 2-Methyl-2-Propanol (t...	5.33	59	1843196	53.059	ng		99
19) Methylene Chloride	5.35	84	321593	22.768	ng		98
20) 3-Chloro-1-propene (Al...	5.44	41	546579	20.613	ng		99
21) Trichlorotrifluoroethane	5.55	151	359646	23.940	ng		99
22) Carbon Disulfide	5.57	76	2251596	45.970	ng		100
23) trans-1,2-Dichloroethene	6.13	61	501560	24.296	ng		99
24) 1,1-Dichloroethane	6.32	63	584530	23.750	ng		99
25) Methyl tert-Butyl Ether	6.35	73	1111363	24.466	ng		100
26) Vinyl Acetate	6.44	86	256666	157.351	ng	#	96
27) 2-Butanone (MEK)	6.65	72	386202	46.857	ng		100
28) cis-1,2-Dichloroethene	7.07	61	478904	23.462	ng		100
29) Diisopropyl Ether	7.26	87	502542	45.858	ng	#	63
30) Ethyl Acetate	7.27	61	339666	64.493	ng		99
31) n-Hexane	7.27	57	460038	22.624	ng		100
32) Chloroform	7.36	83	697682	23.689	ng		100
34) Tetrahydrofuran (THF)	7.73	72	376515	47.178	ng		99
35) Ethyl tert-Butyl Ether	7.80	87	811425	49.724	ng		99
36) 1,2-Dichloroethane	8.11	62	588815	23.303	ng		100
38) 1,1,1-Trichloroethane	8.38	97	714681	23.273	ng		100
39) Isopropyl Acetate	9.29	61	22843	No Calib			
40) 1-Butanol	9.19	56	1014531	No Calib			
41) Benzene	8.88	78	1223750	23.245	ng		100
42) Carbon Tetrachloride	9.05	117	602900	22.799	ng		100
43) Cyclohexane	9.20	84	892292	46.257	ng		99
44) tert-Amyl Methyl Ether	9.57	73	1946026	50.447	ng		100
45) 1,2-Dichloropropane	9.84	63	291298	23.206	ng		100
46) Bromodichloromethane	10.06	83	585390	24.110	ng		100
47) Trichloroethene	10.13	130	380261	24.342	ng		99
48) 1,4-Dioxane	10.09	88	258705	27.220	ng		99
49) 2,2,4-Trimethylpentane...	10.21	57	1182040	23.255	ng		99
50) Methyl Methacrylate	10.38	100	258888	52.727	ng		100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:55:08 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

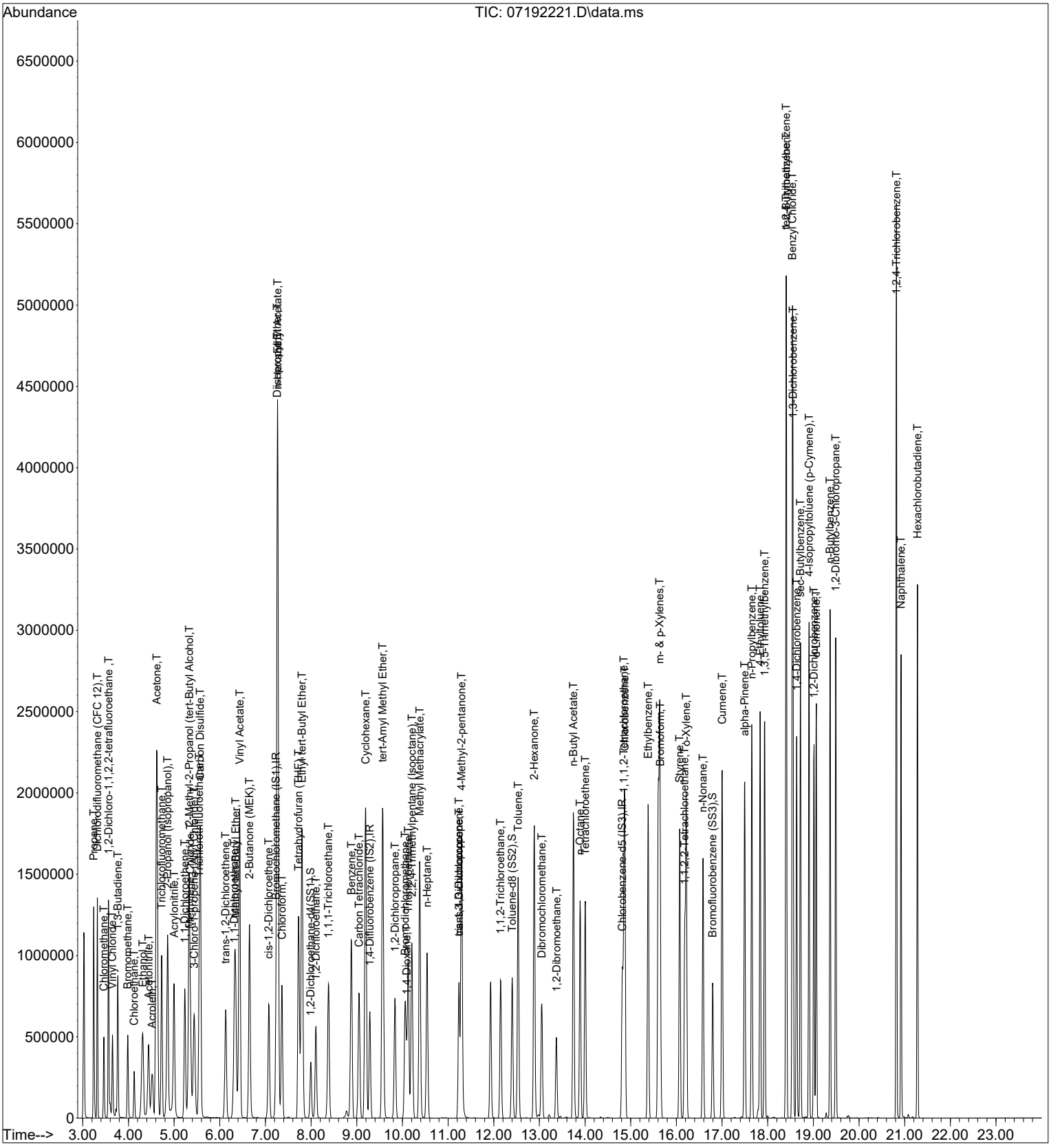
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	283746	23.587	ng		100
52) cis-1,3-Dichloropropene	11.24	75	552175	25.532	ng		100
53) 4-Methyl-2-pentanone	11.30	58	554072	50.293	ng		99
54) trans-1,3-Dichloropropene	11.24	75	552175	24.559	ng		100
55) 1,1,2-Trichloroethane	12.15	97	336332	23.652	ng		100
58) Toluene	12.53	91	1330232	22.919	ng		100
59) 2-Hexanone	12.89	43	1585307	49.475	ng		99
60) Dibromochloromethane	13.05	129	488696	24.302	ng		100
61) 1,2-Dibromoethane	13.38	107	412094	23.485	ng		100
62) n-Butyl Acetate	13.74	43	1747584	51.253	ng		100
63) n-Octane	13.89	57	247223	24.220	ng		100
64) Tetrachloroethene	14.01	166	485404	24.096	ng		99
65) Chlorobenzene	14.87	112	910182	23.000	ng		100
66) Ethylbenzene	15.38	91	1626023	23.724	ng		99
67) m- & p-Xylenes	15.63	91	2713473	47.671	ng		99
68) Bromoform	15.65	173	487816	26.380	ng		100
69) Styrene	16.07	104	958095	24.727	ng		100
70) o-Xylene	16.21	91	1336122	24.256	ng		100
71) n-Nonane	16.58	43	656146	23.818	ng		99
72) 1,1,2,2-Tetrachloroethane	16.18	83	585362	23.875	ng		99
74) Cumene	17.00	105	1637874	23.803	ng		100
75) alpha-Pinene	17.50	93	855645	25.610	ng		99
76) n-Propylbenzene	17.65	91	1956227	23.827	ng		99
77) 3-Ethyltoluene	17.00	105	1637874	No Calib			
78) 4-Ethyltoluene	17.83	105	1620423	24.648	ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	1404545	24.538	ng		100
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.50	105	100550	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	1454995	24.597	ng		100
83) n-Decane	16.79	58	177	No Calib		#	
84) Benzyl Chloride	18.54	91	2605775	56.317	ng		100
85) 1,3-Dichlorobenzene	18.55	146	901099	24.645	ng		100
86) 1,4-Dichlorobenzene	18.63	146	881526	23.739	ng		100
87) sec-Butylbenzene	18.72	105	1797932	23.453	ng		100
88) 4-Isopropyltoluene (p-...	18.91	119	1588486	24.179	ng		100
89) 1,2,3-Trimethylbenzene	18.41	105	1454995	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	848795	24.025	ng		99
91) d-Limonene	19.06	68	476007	24.858	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	711512	50.396	ng		99
93) n-Undecane	17.93	58	20211	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	1503843	49.565	ng		100
95) Naphthalene	20.92	128	1749704	24.537	ng		100
96) n-Dodecane	18.91	58	33826	No Calib		#	
97) Hexachlorobutadiene	21.28	225	535445	23.749	ng		100
98) Cyclohexanone	15.60	55	1105	No Calib		#	
99) tert-Butylbenzene	18.41	119	1377440	24.237	ng		100
100) n-Butylbenzene	19.37	91	1503522	24.195	ng		100
101) 1,1,1,2-Tetrachloroethane	14.85	131	398288	23.788	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:55:08 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

Data File Name: **07192221.D** Acq. Method File: **TO15.M** 7/20/22

Data File Path: **I:\MS09\DATA\2022_07\19** Sample Name: **25ng TO-15 ICV STD**

Operator: **SC** Misc Info: **S35-07192201/S35-06302203 (**

Date Acquired: **7/19/2022 20:09** Instrument Name: **MS09**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
2)	**Propene**	**3.24**	**22.4**	**25.75**	87	**56**	**128**	*	*
3)	**Dichlorodifluoromethane (CFC 1**	**3.32**	**22.7**	**26.00**	87	**71**	**112**	*	*
4)	**Chloromethane**	**3.46**	**23.7**	**25.75**	92	**53**	**126**	*	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroet**	**3.56**	**24.3**	**26.00**	93	**62**	**121**	*	*
6)	**Vinyl Chloride**	**3.65**	**25.7**	**26.00**	99	**63**	**123**	*	*
7)	**1,3-Butadiene**	**3.77**	**25.8**	**25.75**	100	**63**	**135**	*	*
8)	**Bromomethane**	**3.98**	**24.2**	**25.75**	94	**71**	**112**	*	*
9)	**Chloroethane**	**4.13**	**23.0**	**25.75**	89	**66**	**117**	*	*
10)	**Ethanol**	**4.31**	**105**	**104.00**	101	**57**	**117**	*	*
11)	**Acetonitrile**	**4.44**	**20.2**	**25.25**	80	**59**	**131**	*	*
12)	**Acrolein**	**4.52**	**42.9**	**52.00**	83	**71**	**123**	*	*
13)	**Acetone**	**4.62**	**106**	**128.00**	83	**60**	**117**	*	*
14)	**Trichlorofluoromethane**	**4.73**	**22.3**	**25.25**	88	**71**	**114**	*	*
15)	**2-Propanol (Isopropanol)**	**4.86**	**49.2**	**50.00**	98	**61**	**124**	*	*
16)	**Acrylonitrile**	**5.00**	**46.9**	**50.25**	93	**65**	**130**	*	*
17)	**1,1-Dichloroethene**	**5.23**	**24.3**	**26.25**	93	**74**	**114**	*	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	5.33	53.1	51.00	104	56	135	*	*
19)	**Methylene Chloride**	**5.35**	**22.8**	**26.00**	88	**75**	**112**	*	*
20)	**3-Chloro-1-propene (Allyl Chloric**	**5.44**	**20.6**	**25.50**	81	**57**	**127**	*	*
21)	**Trichlorotrifluoroethane**	**5.55**	**23.9**	**27.00**	89	**73**	**114**	*	*
22)	**Carbon Disulfide**	**5.57**	**46.0**	**51.75**	89	**70**	**113**	*	*
23)	**trans-1,2-Dichloroethene**	**6.13**	**24.3**	**26.00**	93	**76**	**119**	*	*
24)	**1,1-Dichloroethane**	**6.32**	**23.8**	**26.75**	89	**70**	**114**	*	*
25)	**Methyl tert-Butyl Ether**	**6.35**	**24.5**	**25.75**	95	**72**	**118**	*	*
26)	**Vinyl Acetate**	**6.44**	**157**	**117.75**	133	**56**	**137**	*	*
27)	**2-Butanone (MEK)**	**6.65**	**46.9**	**51.00**	92	**74**	**121**	*	*
28)	**cis-1,2-Dichloroethene**	**7.07**	**23.5**	**25.75**	91	**73**	**117**	*	*
29)	Diisopropyl Ether	7.26	45.9	52.25	88	58	124	*	*
30)	**Ethyl Acetate**	**7.27**	**64.5**	**72.50**	89	**59**	**161**	*	*
31)	**n-Hexane**	**7.27**	**22.6**	**26.00**	87	**55**	**130**	*	*
32)	**Chloroform**	**7.36**	**23.7**	**26.25**	90	**71**	**114**	*	*
34)	**Tetrahydrofuran (THF)**	**7.73**	**47.2**	**50.50**	93	**73**	**114**	*	*
35)	Ethyl tert-Butyl Ether	7.80	49.7	51.75	96	76	119	*	*
36)	**1,2-Dichloroethane**	**8.11**	**23.3**	**26.25**	89	**71**	**119**	*	*
38)	**1,1,1-Trichloroethane**	**8.38**	**23.3**	**26.00**	90	**73**	**119**	*	*
41)	**Benzene**	**8.88**	**23.2**	**26.00**	89	**72**	**113**	*	*
42)	**Carbon Tetrachloride**	**9.05**	**22.8**	**25.25**	90	**67**	**123**	*	*
43)	**Cyclohexane**	**9.20**	**46.3**	**51.50**	90	**70**	**119**	*	*
44)	tert-Amyl Methyl Ether	9.57	50.4	**51.50**	98	74	120	*	*
45)	**1,2-Dichloropropane**	**9.84**	**23.2**	**25.75**	90	**70**	**118**	*	*
46)	**Bromodichloromethane**	**10.06**	**24.1**	**26.00**	93	**74**	**119**	*	*
47)	**Trichloroethene**	**10.13**	**24.3**	**25.50**	95	**74**	**115**	*	*
48)	**1,4-Dioxane**	**10.09**	**27.2**	**25.75**	106	**77**	**124**	*	*
49)	2,2,4-Trimethylpentane (Isooctane)	10.21	23.3	26.25	89	65	120	*	*

Initial Calibration Verification/LABORATORY CONTROL SAMPLE CHECK SHEET

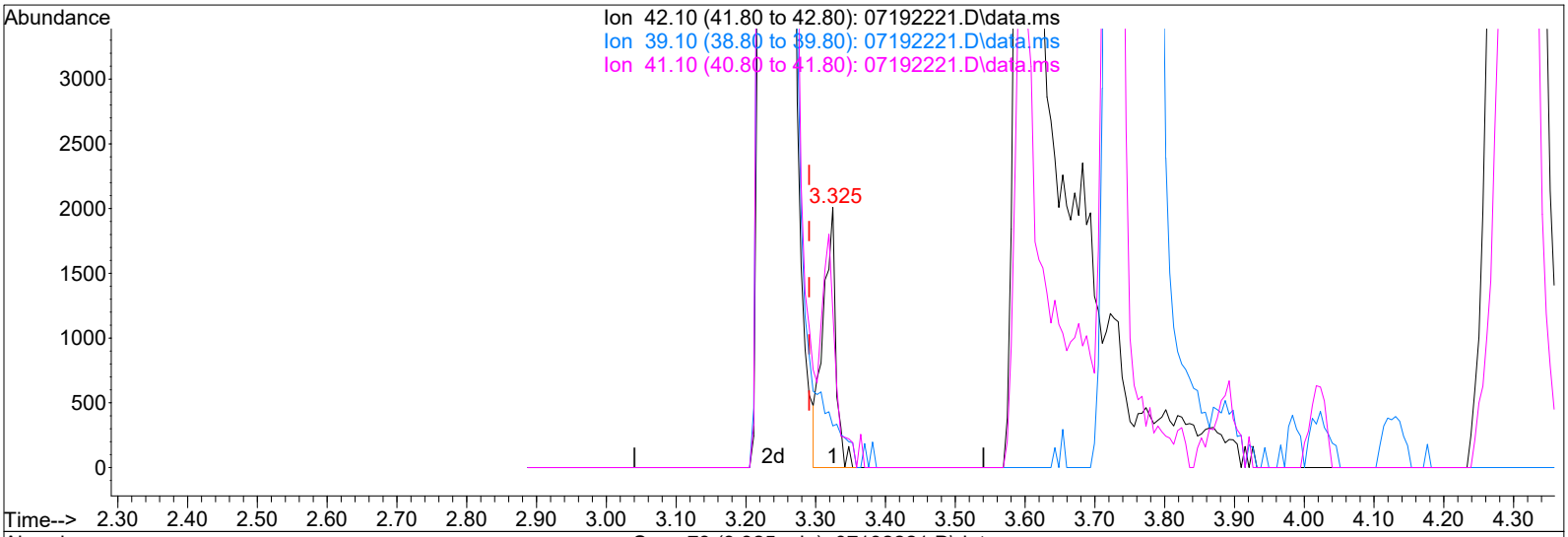
Data File Name: **07192221.D** **TO15.M**
Data File Path: **I:\MS09\DATA\2022_07\19** Sample Name: **25ng TO-15 ICV STD**
Operator: **SC** Misc Info: **S35-07192201/S35-06302203 (**
Date Acquired: **7/19/2022** **20:09** Instrument Name: **MS09**

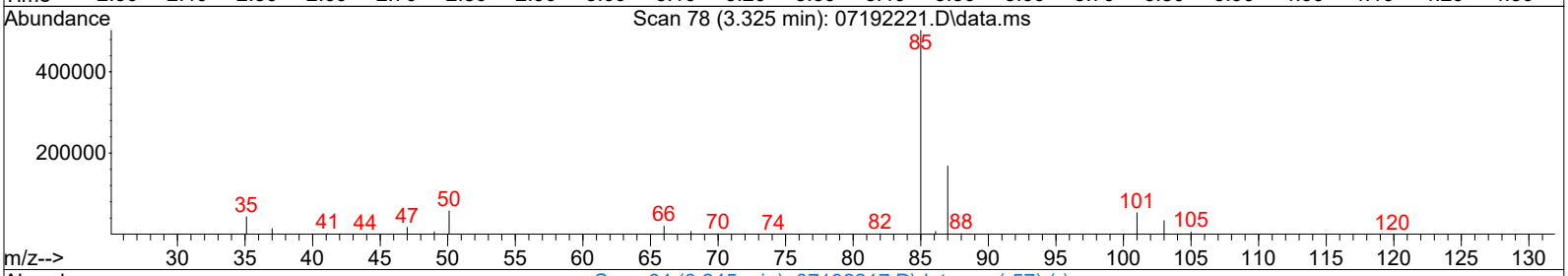
#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail	ICV/AZ 70-130%
50)	**Methyl Methacrylate**	**10.38**	**52.7**	**51.25**	103	**78**	**126**	*	*
51)	**n-Heptane**	**10.54**	**23.6**	**25.75**	92	**70**	**119**	*	*
52)	**cis-1,3-Dichloropropene**	**11.24**	**25.5**	**26.00**	98	**81**	**126**	*	*
53)	**4-Methyl-2-pentanone**	**11.30**	**50.3**	**51.50**	98	**73**	**129**	*	*
54)	**trans-1,3-Dichloropropene**	**11.24**	**24.6**	**25.00**	98	**80**	**127**	*	*
55)	**1,1,2-Trichloroethane**	**12.15**	**23.7**	**26.00**	91	**78**	**117**	*	*
58)	**Toluene**	**12.53**	**22.9**	**25.75**	89	**70**	**118**	*	*
59)	**2-Hexanone**	**12.89**	**49.5**	**50.75**	98	**74**	**132**	*	*
60)	**Dibromochloromethane**	**13.05**	**24.3**	**26.25**	93	**69**	**137**	*	*
61)	**1,2-Dibromoethane**	**13.38**	**23.5**	**26.00**	90	**76**	**128**	*	*
62)	**n-Butyl Acetate**	**13.74**	**51.3**	**50.75**	101	**75**	**134**	*	*
63)	**n-Octane**	**13.89**	**24.2**	**26.00**	93	**68**	**120**	*	*
64)	**Tetrachloroethene**	**14.01**	**24.1**	**26.50**	91	**63**	**130**	*	*
65)	**Chlorobenzene**	**14.87**	**23.0**	**25.75**	89	**70**	**118**	*	*
66)	**Ethylbenzene**	**15.38**	**23.7**	**25.75**	92	**71**	**123**	*	*
67)	**m- & p-Xylenes**	**15.63**	**47.7**	**52.00**	92	**67**	**127**	*	*
68)	**Bromoform**	**15.65**	**26.4**	**26.25**	101	**65**	**149**	*	*
69)	**Styrene**	**16.07**	**24.7**	**25.25**	98	**76**	**132**	*	*
70)	**o-Xylene**	**16.21**	**24.3**	**26.00**	93	**69**	**124**	*	*
71)	**n-Nonane**	**16.58**	**23.8**	**26.00**	92	**64**	**127**	*	*
72)	**1,1,2,2-Tetrachloroethane**	**16.18**	**23.9**	**26.00**	92	**69**	**128**	*	*
74)	**Cumene**	**17.00**	**23.8**	**25.75**	92	**69**	**125**	*	*
75)	**alpha-Pinene**	**17.50**	**25.6**	**26.25**	98	**68**	**129**	*	*
76)	**n-Propylbenzene**	**17.65**	**23.8**	**26.00**	92	**70**	**127**	*	*
78)	**4-Ethyltoluene**	**17.83**	**24.6**	**26.00**	**95**	**69**	**127**	*	*
79)	**1,3,5-Trimethylbenzene**	**17.93**	**24.5**	**26.00**	**94**	**66**	**129**	*	*
82)	**1,2,4-Trimethylbenzene**	**18.41**	**24.6**	**25.75**	**96**	**63**	**142**	*	*
84)	**Benzyl Chloride**	**18.54**	**56.3**	**52.00**	**108**	**73**	**145**	*	*
85)	**1,3-Dichlorobenzene**	**18.55**	**24.6**	**26.00**	**95**	**67**	**136**	*	*
86)	**1,4-Dichlorobenzene**	**18.63**	**23.7**	**26.25**	**90**	**63**	**134**	*	*
87)	sec-Butylbenzene	18.72	23.5	25.50	**92**	68	130	*	*
88)	4-Isopropyltoluene (p-Cymene)	18.91	24.2	25.75	**94**	60	139	*	*
90)	**1,2-Dichlorobenzene**	**19.01**	**24.0**	**26.25**	**91**	**64**	**139**	*	*
91)	**d-Limonene**	**19.06**	**24.9**	**25.75**	**97**	**63**	**137**	*	*
92)	**1,2-Dibromo-3-Chloropropane**	**19.49**	**50.4**	**50.50**	**100**	**72**	**145**	*	*
94)	**1,2,4-Trichlorobenzene**	**20.82**	**49.6**	**52.50**	**94**	**62**	**154**	*	*
95)	**Naphthalene**	**20.92**	**24.5**	**26.25**	**93**	**62**	**156**	*	*
97)	**Hexachlorobutadiene**	**21.28**	**23.7**	**26.50**	**89**	55	142	*	*
99)	tert-Butylbenzene	18.41	24.2	25.75	94	61	140	*	*
100)	n-Butylbenzene	19.37	24.2	26.00	93	70	131	*	*
101)	1,1,1,2-Tetrachloroethane	14.85	23.8	25.75	92	70	130	*	*

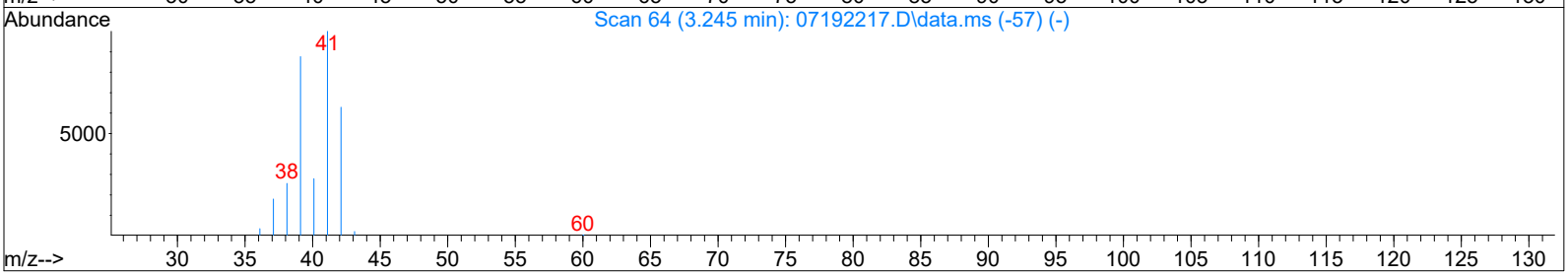
Bold = 75 Compound List
*** = Pass**

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:54:11 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 07192221.D\data.ms

(2) Propene (T)

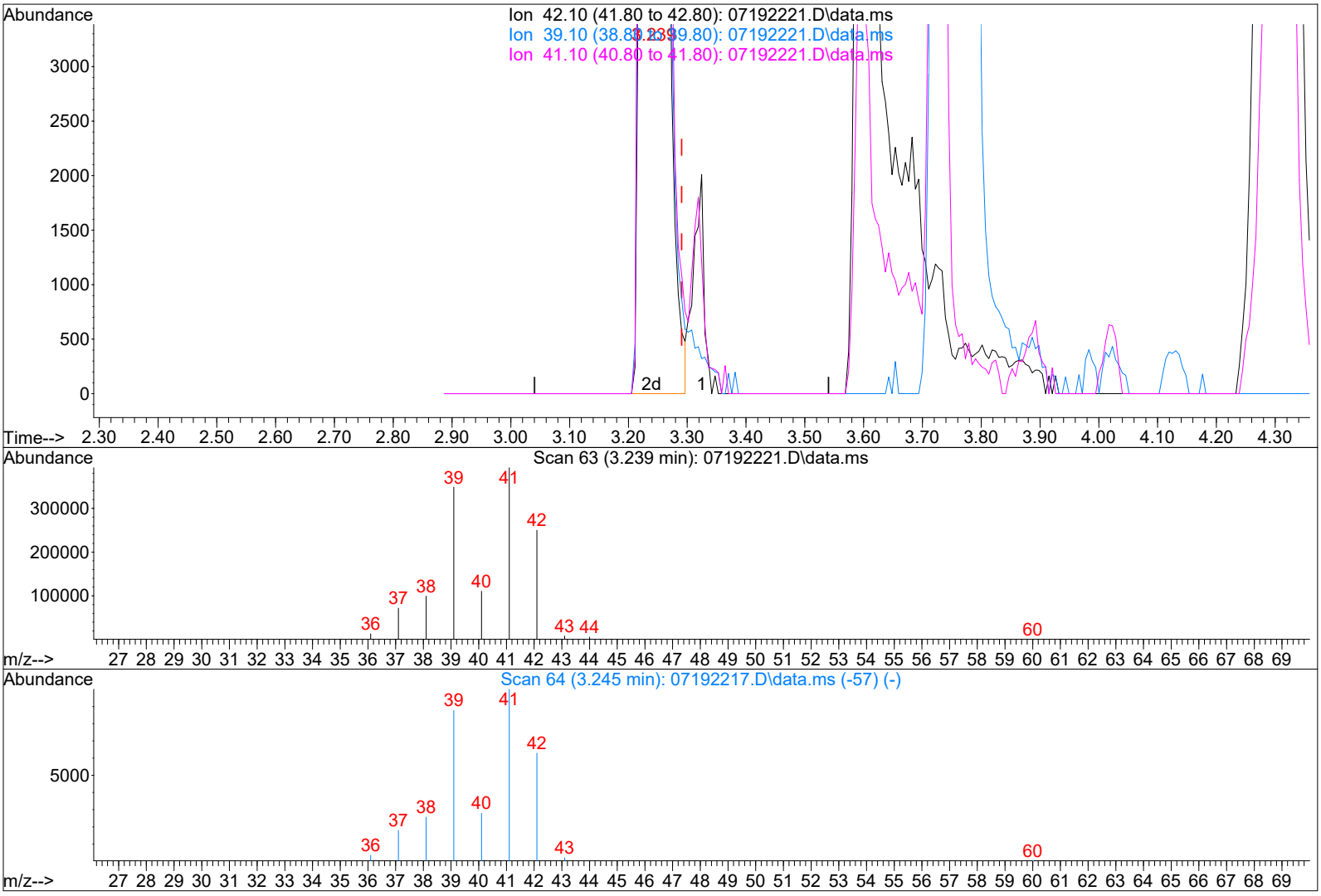
3.325min (+0.034) 0.17ng

response 2559

Ion	Exp%	Act%
42.10	100	100
39.10	139.50	5.08#
41.10	157.20	95.23#
0.00	0.00	0.00

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:54:11 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 07192221.D\data.ms

(2) Propene (T)

3.239min (-0.051) 22.37ng m

response 331278

Ion	Exp%	Act%
42.10	100	100
39.10	139.50	0.04#
41.10	157.20	0.74#
0.00	0.00	0.00

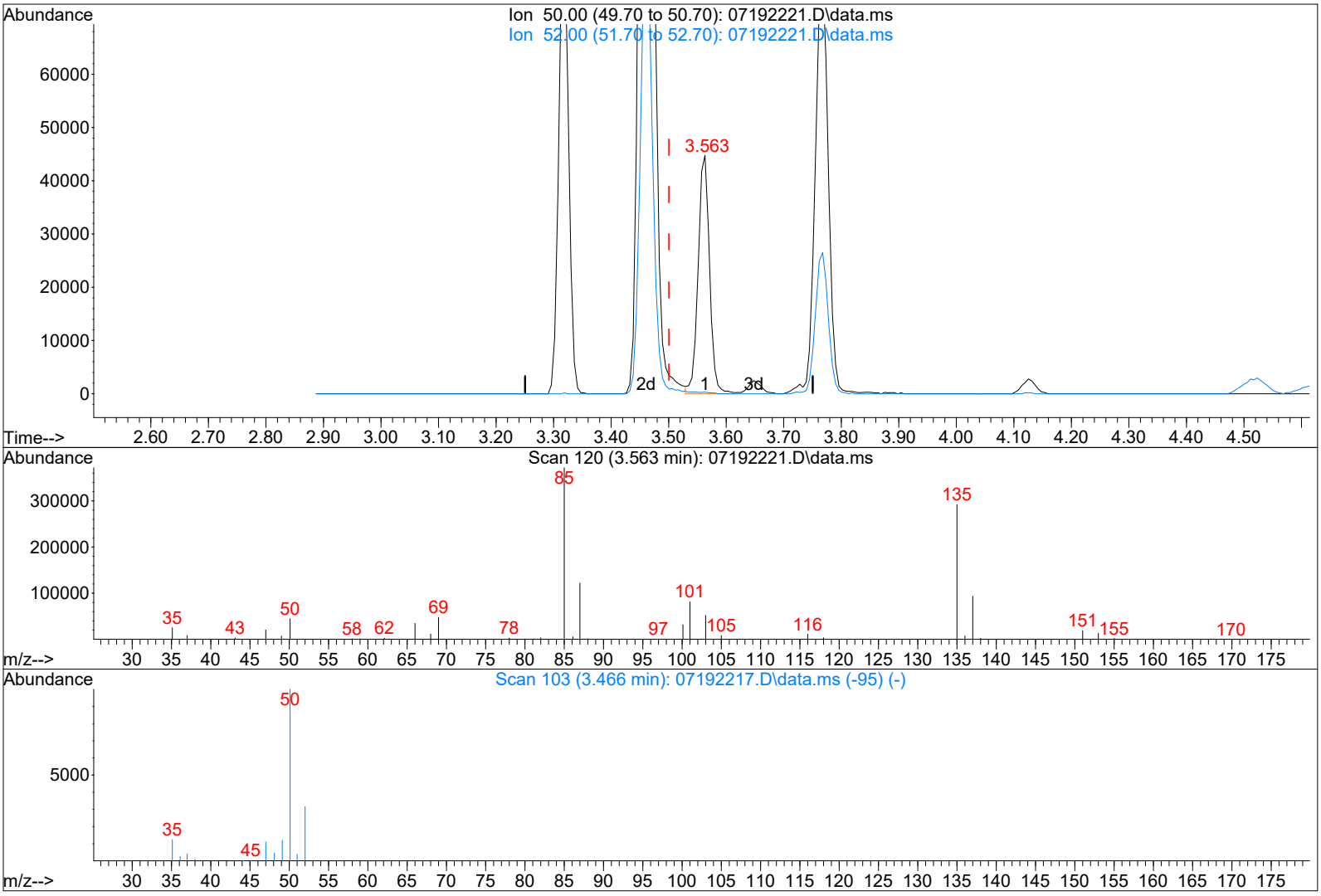
WP

7/20/22

7/27/22

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:54:11 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 07192221.D\data.ms

(4) Chloromethane (T)

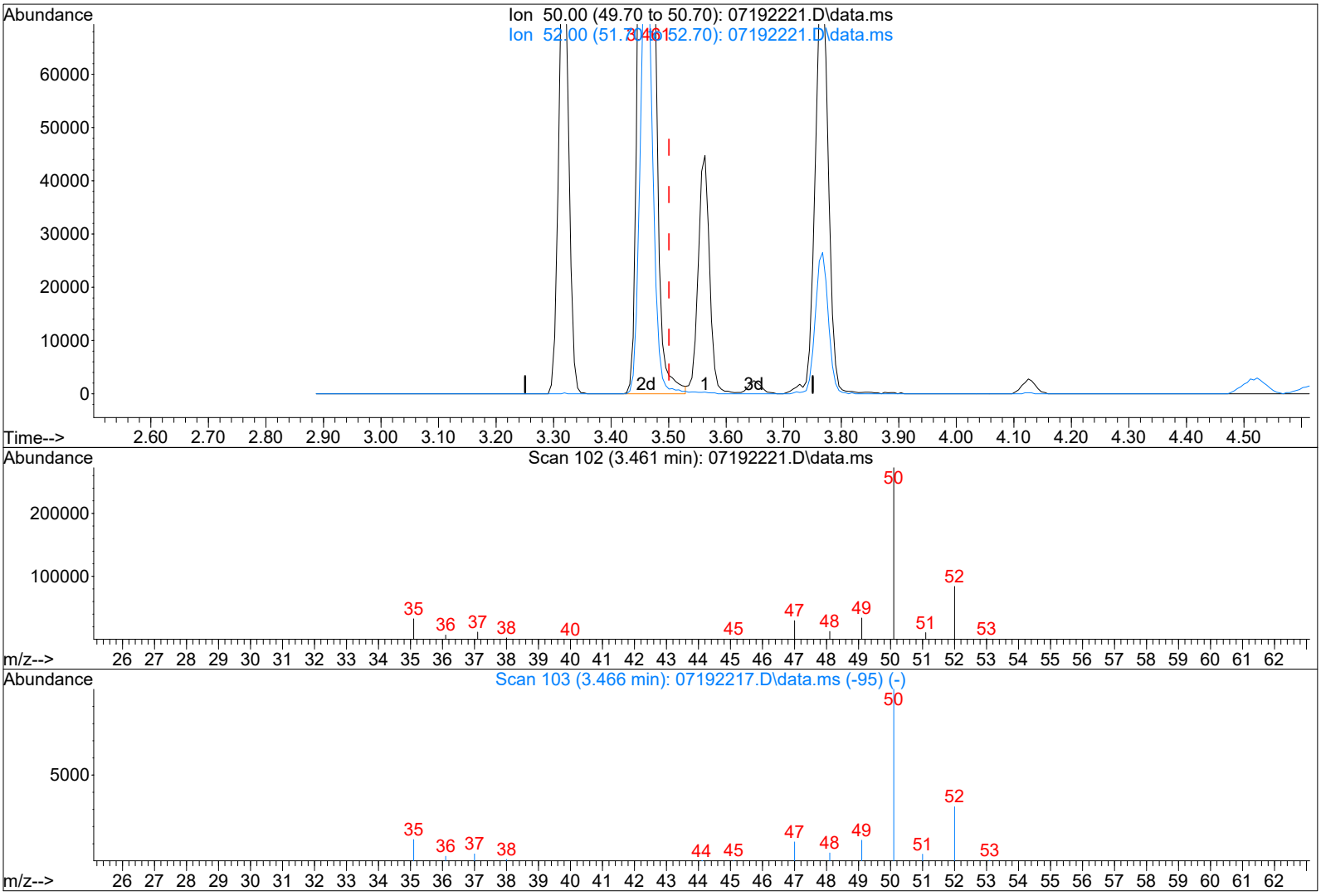
3.563min (+0.062) 3.65ng

response 61344

Ion	Exp%	Act%
50.00	100	100
52.00	31.60	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS09\DATA\2022_07\19\07192221.D Vial: 8
Acq On : 19 Jul 2022 20:09 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-07192201/S35-06302203 (7/30)

Quant Time: Jul 20 08:54:11 2022
Quant Method : I:\MS09\Methods\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jul 20 08:53:45 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 07192221.D\data.ms

(4) Chloromethane (T)

3.461min (-0.040) 23.69ng m

response 398187

Ion	Exp%	Act%
50.00	100	100
52.00	31.60	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

WP

7/20/22

7/27/22

ICV/LCS Standard Concentrations (Secondary Source)

7/20/22

4ng/L Working Std. ID:				
20ng/L Working Std. ID:				
200ng/L Working Std. ID:	S35-06302203			
1000ng/L Working Std. ID:				
Dilution Factor:	1	5	50	250
Working Std. Conc. Utilized:	200			
Working Std. Injection Amounts (L):				0.125

		Secondary Working Std. Conc.				ICV / LCS Actual Conc.(ng)
Compounds	mg/m^3	1000ng/L	200ng/L	20ng/L	4ng/L	
Propene	1.03	1030	206	20.6	4.12	25.75
Dichlorodifluoromethane(12)	1.04	1040	208	20.8	4.16	26.00
Chloromethane	1.03	1030	206	20.6	4.12	25.75
Freon-114	1.04	1040	208	20.8	4.16	26.00
Vinyl Chloride	1.04	1040	208	20.8	4.16	26.00
1,3-Butadiene	1.03	1030	206	20.6	4.12	25.75
Bromomethane	1.03	1030	206	20.6	4.12	25.75
Chloroethane	1.03	1030	206	20.6	4.12	25.75
Ethanol	4.16	4160	832	83.2	16.64	104.00
Acetonitrile	1.01	1010	202	20.2	4.04	25.25
Acrolein	2.08	2080	416	41.6	8.32	52.00
Acetone	5.12	5120	1024	102.4	20.48	128.00
Trichlorofluoromethane(11)	1.01	1010	202	20.2	4.04	25.25
Isopropanol	2.00	2000	400	40.0	8.00	50.00
Acrylonitrile	2.01	2010	402	40.2	8.04	50.25
1,1-Dichloroethene	1.05	1050	210	21.0	4.20	26.25
tert-Butanol	2.04	2040	408	40.8	8.16	51.00
Methylene Chloride	1.04	1040	208	20.8	4.16	26.00
Allyl Chloride	1.02	1020	204	20.4	4.08	25.50
Trichlorotrifluoroethane(113)	1.08	1080	216	21.6	4.32	27.00
Carbon Disulfide	2.07	2070	414	41.4	8.28	51.75
trans-1,2-Dichloroethene	1.04	1040	208	20.8	4.16	26.00
1,1-Dichloroethane	1.07	1070	214	21.4	4.28	26.75
Methyl tert-Butyl Ether	1.03	1030	206	20.6	4.12	25.75
Vinyl Acetate	4.71	4710	942	94.2	18.84	117.75
2-Butanone	2.04	2040	408	40.8	8.16	51.00
cis-1,2-Dichloroethene	1.03	1030	206	20.6	4.12	25.75
Diisopropyl Ether	2.09	2090	418	41.8	8.36	52.25
Ethyl Acetate	2.90	2900	580	58.0	11.60	72.50
n-Hexane	1.04	1040	208	20.8	4.16	26.00
Chloroform	1.05	1050	210	21.0	4.20	26.25
Tetrahydrofuran	2.02	2020	404	40.4	8.08	50.50
Ethyl tert-Butyl Ether	2.07	2070	414	41.4	8.28	51.75
1,2-Dichloroethane	1.05	1050	210	21.0	4.20	26.25
1,1,1-Trichloroethane	1.04	1040	208	20.8	4.16	26.00
Benzene	1.04	1040	208	20.8	4.16	26.00
Carbon Tetrachloride	1.01	1010	202	20.2	4.04	25.25
Cyclohexane	2.06	2060	412	41.2	8.24	51.50
tert-Amyl Methyl Ether	2.06	2060	412	41.2	8.24	51.50
1,2-Dichloropropane	1.03	1030	206	20.6	4.12	25.75
Bromodichloromethane	1.04	1040	208	20.8	4.16	26.00
Trichloroethene	1.02	1020	204	20.4	4.08	25.50
1,4-Dioxane	1.03	1030	206	20.6	4.12	25.75
Isooctane	1.05	1050	210	21.0	4.20	26.25

		Secondary Working Std. Conc.				ICV / LCS Actual Conc.(ng)
Compounds	mg/m^3	1000ng/L	200ng/L	20ng/L	4ng/L	
Methyl Methacrylate	2.05	2050	410	41.0	8.20	51.25
n-Heptane	1.03	1030	206	20.6	4.12	25.75
cis-1,3-Dichloropropene	1.04	1040	208	20.8	4.16	26.00
4-Methyl-2-pentanone	2.06	2060	412	41.2	8.24	51.50
trans-1,3-Dichloropropene	1.00	1000	200	20.0	4.00	25.00
1,1,2-Trichloroethane	1.04	1040	208	20.8	4.16	26.00
Toluene	1.03	1030	206	20.6	4.12	25.75
2-Hexanone	2.03	2030	406	40.6	8.12	50.75
Dibromochloromethane	1.05	1050	210	21.0	4.20	26.25
1,2-Dibromoethane	1.04	1040	208	20.8	4.16	26.00
n-Butyl Acetate	2.03	2030	406	40.6	8.12	50.75
n-Octane	1.04	1040	208	20.8	4.16	26.00
Tetrachloroethene	1.06	1060	212	21.2	4.24	26.50
Chlorobenzene	1.03	1030	206	20.6	4.12	25.75
Ethylbenzene	1.03	1030	206	20.6	4.12	25.75
m-,p-Xylene	2.08	2080	416	41.6	8.32	52.00
Bromoform	1.05	1050	210	21.0	4.20	26.25
Styrene	1.01	1010	202	20.2	4.04	25.25
o-Xylene	1.04	1040	208	20.8	4.16	26.00
n-Nonane	1.04	1040	208	20.8	4.16	26.00
1,1,2,2-Tetrachloroethane	1.04	1040	208	20.8	4.16	26.00
Cumene	1.03	1030	206	20.6	4.12	25.75
alpha-Pinene	1.05	1050	210	21.0	4.20	26.25
n-Propylbenzene	1.04	1040	208	20.8	4.16	26.00
4-Ethyltoluene	1.04	1040	208	20.8	4.16	26.00
1,3,5-Trimethylbenzene	1.04	1040	208	20.8	4.16	26.00
1,2,4-Trimethylbenzene	1.03	1030	206	20.6	4.12	25.75
Benzyl Chloride	2.08	2080	416	41.6	8.32	52.00
1,3-Dichlorobenzene	1.04	1040	208	20.8	4.16	26.00
1,4-Dichlorobenzene	1.05	1050	210	21.0	4.20	26.25
sec-Butylbenzene	1.02	1020	204	20.4	4.08	25.50
p-Isopropyltoluene	1.03	1030	206	20.6	4.12	25.75
1,2-Dichlorobenzene	1.05	1050	210	21.0	4.20	26.25
d-Limonene	1.03	1030	206	20.6	4.12	25.75
1,2-Dibromo-3-chloropropane	2.02	2020	404	40.4	8.08	50.50
1,2,4-Trichlorobenzene	2.10	2100	420	42.0	8.40	52.50
Naphthalene	1.05	1050	210	21.0	4.20	26.25
Hexachloro-1,3-butadiene	1.06	1060	212	21.2	4.24	26.50
tert-Butylbenzene	1.03	1030	206	20.6	4.12	25.75
n-Butylbenzene	1.04	1040	208	20.8	4.16	26.00
1,1,1,2-Tetrachloroethane	1.03	1030	206	20.6	4.12	25.75

***Enter Information in the Solid Shaded Areas ONLY.**

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2022_08\12\08122202.D Vial: 2
Acq On : 11 Aug 2022 23:06 Operator: SC
Sample : CCV R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 12 03:28:53 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/12/22

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	109	-0.03
2	T	Propene	1.198	0.918	23.4	90	0.00
3	T	Dichlorodifluoromethane (CF	2.956	2.727	7.7	116	0.00
4	T	Chloromethane	1.359	1.176	13.5	108	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.279	1.299	-1.6	132	0.00
6	T	Vinyl Chloride	1.265	1.354	-7.0	138	-0.06
7	T	1,3-Butadiene	0.912	1.059	-16.1	146	-0.05
8	T	Bromomethane	0.986	0.889	9.8	116	-0.05
9	T	Chloroethane	0.683	0.540	20.9	99	-0.05
10	T	Ethanol	0.791	0.700	11.5	103	-0.02
11	T	Acetonitrile	2.325	1.746	24.9	95	-0.04
12	T	Acrolein	0.601	0.533	11.3	106	-0.05
13	T	Acetone	0.740	0.597	19.3	104	-0.04
14	T	Trichlorofluoromethane	2.980	2.727	8.5	117	-0.04
15	T	2-Propanol (Isopropanol)	2.975	2.805	5.7	124	-0.05
16	T	Acrylonitrile	1.264	1.099	13.1	102	-0.02
17	T	1,1-Dichloroethene	1.048	1.017	3.0	121	-0.05
18	T	2-Methyl-2-Propanol (tert-B	2.810	2.866	-2.0	125	-0.11
19	T	Methylene Chloride	1.142	1.014	11.2	115	-0.02
20	T	3-Chloro-1-propene (Allyl C	2.145	1.743	18.7	96	-0.04
21	T	Trichlorotrifluoroethane	1.215	1.206	0.7	129	-0.04
22	T	Carbon Disulfide	3.961	3.344	15.6	105	-0.05
23	T	trans-1,2-Dichloroethene	1.670	1.475	11.7	109	-0.03
24	T	1,1-Dichloroethane	1.991	1.705	14.4	109	-0.03
25	T	Methyl tert-Butyl Ether	3.674	3.505	4.6	118	-0.06
26	T	Vinyl Acetate	0.132	0.142	-7.6	117	-0.04
27	T	2-Butanone (MEK)	0.667	0.587	12.0	107	-0.05
28	T	cis-1,2-Dichloroethene	1.651	1.441	12.7	110	-0.02
29	T	Diisopropyl Ether	0.886	0.820	7.4	119	-0.06
30	T	Ethyl Acetate	0.426	0.372	12.7	107	-0.06
31	T	n-Hexane	1.645	1.410	14.3	111	-0.04
32	T	Chloroform	2.382	2.128	10.7	113	-0.02
33	S	1,2-Dichloroethane-d4(SS1)	2.097	1.861	11.3	96	-0.03
34	T	Tetrahydrofuran (THF)	0.645	0.568	11.9	107	-0.08
35	T	Ethyl tert-Butyl Ether	1.320	1.284	2.7	123	-0.06
36	T	1,2-Dichloroethane	2.044	1.947	4.7	122	-0.03
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	102	-0.01
38	T	1,1,1-Trichloroethane	0.583	0.576	1.2	118	-0.01
39	T	Isopropyl Acetate	0.000	0.000	0.0	92	-0.01
40	T	1-Butanol	0.000	0.000	0.0	107	-0.02
41	T	Benzene	0.999	0.925	7.4	112	-0.02
42	T	Carbon Tetrachloride	0.502	0.533	-6.2	125	-0.02
43	T	Cyclohexane	0.366	0.356	2.7	116	-0.02
44	T	tert-Amyl Methyl Ether	0.732	0.734	-0.3	120	-0.03
45	T	1,2-Dichloropropane	0.238	0.205	13.9	104	-0.02
46	T	Bromodichloromethane	0.461	0.438	5.0	111	-0.01
47	T	Trichloroethene	0.297	0.339	-14.1	136	-0.02
48	T	1,4-Dioxane	0.180	0.202	-12.2	118	-0.06
49	T	2,2,4-Trimethylpentane (Iso	0.965	0.865	10.4	107	-0.03
50	T	Methyl Methacrylate	0.093	0.105	-12.9	124	-0.03
51	T	n-Heptane	0.228	0.210	7.9	107	-0.03
52	T	cis-1,3-Dichloropropene	0.411	0.408	0.7	113	-0.03
53	T	4-Methyl-2-pentanone	0.209	0.200	4.3	110	-0.04
54	T	trans-1,3-Dichloropropene	0.427	0.424	0.7	113	-0.03
55	T	1,1,2-Trichloroethane	0.270	0.265	1.9	116	-0.03

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2022_08\12\08122202.D Vial: 2
Acq On : 11 Aug 2022 23:06 Operator: SC
Sample : CCV R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 12 03:28:53 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	101	0.00
57	S	Toluene-d8 (SS2)	5.246	5.359	-2.2	102	0.00
58	T	Toluene	5.279	5.385	-2.0	120	0.00
59	T	2-Hexanone	2.914	2.906	0.3	110	-0.02
60	T	Dibromochloromethane	1.829	2.132	-16.6	133	0.00
61	T	1,2-Dibromoethane	1.596	1.692	-6.0	122	0.00
62	T	n-Butyl Acetate	3.101	3.056	1.5	107	-0.01
63	T	n-Octane	0.928	0.895	3.6	108	0.00
64	T	Tetrachloroethene	1.832	1.963	-7.2	126	0.00
65	T	Chlorobenzene	3.599	3.845	-6.8	127	0.00
66	T	Ethylbenzene	6.234	6.535	-4.8	120	0.00
67	T	m- & p-Xylenes	5.177	5.506	-6.4	122	0.01
68	T	Bromoform	1.682	1.928	-14.6	128	0.00
69	T	Styrene	3.524	3.999	-13.5	125	0.00
70	T	o-Xylene	5.010	5.376	-7.3	122	0.00
71	T	n-Nonane	2.506	2.320	7.4	104	0.00
72	T	1,1,2,2-Tetrachloroethane	2.230	2.053	7.9	104	0.00
73	S	Bromofluorobenzene (SS3)	2.119	2.424	-14.4	113	0.00
74	T	Cumene	6.258	6.776	-8.3	124	0.00
75	T	alpha-Pinene	3.039	3.235	-6.4	122	0.00
76	T	n-Propylbenzene	7.467	7.950	-6.5	119	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	124	0.00
78	T	4-Ethyltoluene	5.979	6.546	-9.5	123	0.00
79	T	1,3,5-Trimethylbenzene	5.206	5.761	-10.7	123	0.00
80	T	alpha-Methylstyrene	0.000	0.000	0.0	0#	-16.45#
81	T	2-Ethyltoluene	0.000	0.000	0.0	3547#	0.00
82	T	1,2,4-Trimethylbenzene	5.380	6.054	-12.5	125	0.00
83	T	n-Decane	0.000	0.000	0.0	14#	0.00
84	T	Benzyl Chloride	4.208	5.282	-25.5	131	0.00
85	T	1,3-Dichlorobenzene	3.325	3.824	-15.0	131	0.00
86	T	1,4-Dichlorobenzene	3.377	3.835	-13.6	132	0.00
87	T	sec-Butylbenzene	6.972	7.477	-7.2	122	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.975	7.078	-18.5	131	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	125	0.00
90	T	1,2-Dichlorobenzene	3.213	3.697	-15.1	134	0.00
91	T	d-Limonene	1.742	1.674	3.9	106	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.284	1.551	-20.8	132	0.00
93	T	n-Undecane	0.000	0.000	0.0	106	0.00
94	T	1,2,4-Trichlorobenzene	2.760	3.400	-23.2	135	0.00
95	T	Naphthalene	6.486	9.025	-39.1#	147	0.00
96	T	n-Dodecane	0.000	0.000	0.0	546#	0.00
97	T	Hexachlorobutadiene	2.051	2.278	-11.1	127	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.64#
99	T	tert-Butylbenzene	5.169	5.971	-15.5	132	0.00
100	T	n-Butylbenzene	5.652	6.222	-10.1	121	0.00
101	T	1,1,1,2-Tetrachloroethane	1.523	1.744	-14.5	132	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122202.D Vial: 2
Acq On : 11 Aug 2022 23:06 Operator: SC
Sample : CCV R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 12 03:28:53 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/12/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	157177	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.28	114	634141	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	129041	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	292472	11.090	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.72%				
57) Toluene-d8 (SS2)	12.40	98	691479	12.768	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.16%				
73) Bromofluorobenzene (SS3)	16.79	174	312790	14.297	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 114.40%				
Target Compounds							Qvalue
2) Propene	3.25	42	60053	3.988	ng		96
3) Dichlorodifluoromethan...	3.32	85	180003	4.843	ng		99
4) Chloromethane	3.47	50	75406	4.412	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	88170	5.482	ng		99
6) Vinyl Chloride	3.65	62	88517	5.566	ng		98
7) 1,3-Butadiene	3.77	54	69243	6.041	ng		97
8) Bromomethane	3.98	94	57014	4.597	ng		96
9) Chloroethane	4.12	64	34624	4.034	ng		97
10) Ethanol	4.27	45	159202	16.008	ng		98
11) Acetonitrile	4.41	41	102108	3.493	ng		98
12) Acrolein	4.50	56	66983	8.858	ng		99
13) Acetone	4.60	58	194806	20.947	ng	#	84
14) Trichlorofluoromethane	4.72	101	176579	4.713	ng		98
15) 2-Propanol (Isopropanol)	4.82	45	356262	9.523	ng		97
16) Acrylonitrile	4.97	53	140266	8.826	ng		92
17) 1,1-Dichloroethene	5.23	96	68447	5.196	ng		90
18) 2-Methyl-2-Propanol (t...	5.29	59	378404	10.711	ng		97
19) Methylene Chloride	5.33	84	66324	4.617	ng		92
20) 3-Chloro-1-propene (Al...	5.43	41	115059	4.267	ng		96
21) Trichlorotrifluoroethane	5.54	151	81898	5.360	ng		92
22) Carbon Disulfide	5.57	76	441471	8.863	ng		99
23) trans-1,2-Dichloroethene	6.11	61	98303	4.682	ng		92
24) 1,1-Dichloroethane	6.29	63	112547	4.496	ng		100
25) Methyl tert-Butyl Ether	6.33	73	231405	5.009	ng		98
26) Vinyl Acetate	6.42	86	30302	18.266	ng	#	87
27) 2-Butanone (MEK)	6.63	72	76008	9.068	ng		99
28) cis-1,2-Dichloroethene	7.06	61	94207	4.538	ng		91
29) Diisopropyl Ether	7.25	87	109247	9.802	ng	#	84
30) Ethyl Acetate	7.25	61	95543	17.838	ng		95
31) n-Hexane	7.27	57	93068	4.500	ng		99
32) Chloroform	7.34	83	143159	4.780	ng		98
34) Tetrahydrofuran (THF)	7.71	72	70346	8.667	ng		94
35) Ethyl tert-Butyl Ether	7.79	87	169472	10.212	ng		93
36) 1,2-Dichloroethane	8.09	62	129770	5.050	ng		99
38) 1,1,1-Trichloroethane	8.37	97	151834	5.134	ng		97
39) Isopropyl Acetate	9.28	61	19979	No Calib			
40) 1-Butanol	9.18	56	195789	No Calib			
41) Benzene	8.87	78	244039	4.814	ng		100
42) Carbon Tetrachloride	9.04	117	142028	5.577	ng		98
43) Cyclohexane	9.18	84	187020	10.068	ng		93
44) tert-Amyl Methyl Ether	9.56	73	389118	10.475	ng		98
45) 1,2-Dichloropropane	9.83	63	53522	4.428	ng		99
46) Bromodichloromethane	10.05	83	116680	4.991	ng		97
47) Trichloroethene	10.12	130	88452	5.880	ng		99
48) 1,4-Dioxane	10.08	88	53190	5.812	ng		92
49) 2,2,4-Trimethylpentane...	10.20	57	232522	4.750	ng		98
50) Methyl Methacrylate	10.37	100	55572	11.754	ng	#	83

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122202.D Vial: 2
Acq On : 11 Aug 2022 23:06 Operator: SC
Sample : CCV R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 12 03:28:53 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

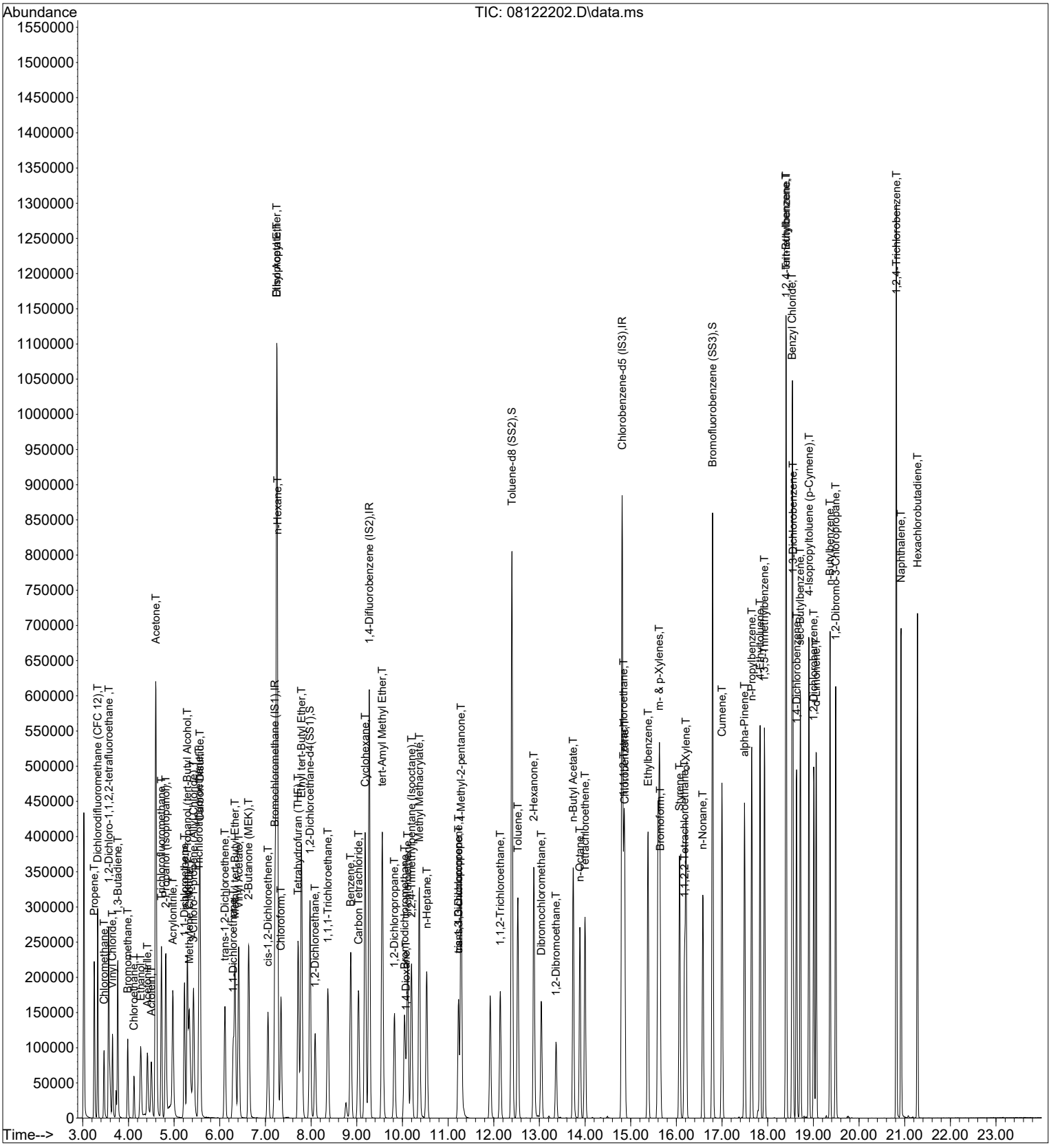
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	55944	4.829	ng		98
52) cis-1,3-Dichloropropene	11.23	75	108561	5.213	ng		100
53) 4-Methyl-2-pentanone	11.29	58	105549	9.949	ng		98
54) trans-1,3-Dichloropropene	11.23	75	108561	5.014	ng		100
55) 1,1,2-Trichloroethane	12.14	97	69997	5.112	ng		93
58) Toluene	12.53	91	286281	5.253	ng		100
59) 2-Hexanone	12.88	43	307539	10.222	ng		99
60) Dibromochloromethane	13.04	129	115538	6.119	ng		100
61) 1,2-Dibromoethane	13.36	107	90844	5.514	ng		99
62) n-Butyl Acetate	13.74	43	321824	10.052	ng		99
63) n-Octane	13.89	57	48514	5.062	ng		93
64) Tetrachloroethene	14.00	166	105375	5.571	ng		98
65) Chlorobenzene	14.87	112	206408	5.555	ng		100
66) Ethylbenzene	15.38	91	347412	5.399	ng		97
67) m- & p-Xylenes	15.62	91	585476	10.955	ng		97
68) Bromoform	15.65	173	103497	5.961	ng		100
69) Styrene	16.07	104	212629	5.845	ng		98
70) o-Xylene	16.21	91	288611	5.580	ng		96
71) n-Nonane	16.58	43	124518	4.814	ng		94
72) 1,1,2,2-Tetrachloroethane	16.18	83	110192	4.787	ng		96
74) Cumene	17.00	105	363727	5.630	ng		96
75) alpha-Pinene	17.49	93	180349	5.749	ng		98
76) n-Propylbenzene	17.65	91	430892	5.590	ng		96
77) 3-Ethyltoluene	17.00	105	363727	No Calib			
78) 4-Ethyltoluene	17.83	105	358139	5.802	ng		94
79) 1,3,5-Trimethylbenzene	17.93	105	309243	5.754	ng		94
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	22131	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	321877	5.795	ng		94
83) n-Decane	16.79	58	117	No Calib		#	
84) Benzyl Chloride	18.54	91	561619	12.928	ng		98
85) 1,3-Dichlorobenzene	18.55	146	205270	5.979	ng		99
86) 1,4-Dichlorobenzene	18.63	146	205874	5.905	ng		99
87) sec-Butylbenzene	18.71	105	401348	5.576	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	379981	6.160	ng		98
89) 1,2,3-Trimethylbenzene	18.41	105	321877	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	200347	6.040	ng		99
91) d-Limonene	19.06	68	90730	5.046	ng		90
92) 1,2-Dibromo-3-Chloropr...	19.49	157	160108	12.078	ng		92
93) n-Undecane	17.94	58	4005	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	358040	12.568	ng		99
95) Naphthalene	20.92	128	484490	7.236	ng		100
96) n-Dodecane	18.90	58	7640	No Calib		#	
97) Hexachlorobutadiene	21.28	225	121096	5.720	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	320554	6.007	ng		99
100) n-Butylbenzene	19.37	91	334004	5.724	ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	93624	5.956	ng		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\12\08122202.D Vial: 2
Acq On : 11 Aug 2022 23:06 Operator: SC
Sample : CCV R9081222_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 12 03:28:53 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2022_08\15\08152202.D Vial: 2
Acq On : 15 Aug 2022 5:08 Operator: SC
Sample : CCV R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 15 08:33:50 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	97	-0.02
2	T	Propene	1.198	0.926	22.7	81	0.01
3	T	Dichlorodifluoromethane (CF	2.956	2.937	0.6	111	0.00
4	T	Chloromethane	1.359	1.170	13.9	96	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.279	1.364	-6.6	123	0.00
6	T	Vinyl Chloride	1.265	1.341	-6.0	122	-0.05
7	T	1,3-Butadiene	0.912	1.101	-20.7	135	-0.04
8	T	Bromomethane	0.986	0.894	9.3	104	-0.05
9	T	Chloroethane	0.683	0.547	19.9	89	-0.05
10	T	Ethanol	0.791	0.699	11.6	91	0.00
11	T	Acetonitrile	2.325	1.747	24.9	84	-0.02
12	T	Acrolein	0.601	0.529	12.0	94	-0.04
13	T	Acetone	0.740	0.604	18.4	94	-0.03
14	T	Trichlorofluoromethane	2.980	2.976	0.1	113	-0.04
15	T	2-Propanol (Isopropanol)	2.975	2.867	3.6	113	-0.04
16	T	Acrylonitrile	1.264	1.109	12.3	91	-0.01
17	T	1,1-Dichloroethene	1.048	1.039	0.9	110	-0.04
18	T	2-Methyl-2-Propanol (tert-B	2.810	2.977	-5.9	115	-0.10
19	T	Methylene Chloride	1.142	1.030	9.8	104	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.145	1.823	15.0	90	-0.03
21	T	Trichlorotrifluoroethane	1.215	1.266	-4.2	121	-0.03
22	T	Carbon Disulfide	3.961	3.400	14.2	95	-0.05
23	T	trans-1,2-Dichloroethene	1.670	1.510	9.6	99	-0.02
24	T	1,1-Dichloroethane	1.991	1.758	11.7	100	-0.02
25	T	Methyl tert-Butyl Ether	3.674	3.632	1.1	109	-0.06
26	T	Vinyl Acetate	0.132	0.145	-9.8	106	-0.03
27	T	2-Butanone (MEK)	0.667	0.595	10.8	97	-0.04
28	T	cis-1,2-Dichloroethene	1.651	1.497	9.3	102	-0.02
29	T	Diisopropyl Ether	0.886	0.844	4.7	109	-0.05
30	T	Ethyl Acetate	0.426	0.371	12.9	95	-0.05
31	T	n-Hexane	1.645	1.446	12.1	101	-0.03
32	T	Chloroform	2.382	2.239	6.0	106	-0.02
33	S	1,2-Dichloroethane-d4(SS1)	2.097	1.949	7.1	90	-0.03
34	T	Tetrahydrofuran (THF)	0.645	0.572	11.3	96	-0.07
35	T	Ethyl tert-Butyl Ether	1.320	1.335	-1.1	113	-0.05
36	T	1,2-Dichloroethane	2.044	2.080	-1.8	116	-0.03
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	91	-0.01
38	T	1,1,1-Trichloroethane	0.583	0.617	-5.8	113	0.00
39	T	Isopropyl Acetate	0.000	0.000	0.0	86	-0.01
40	T	1-Butanol	0.000	0.000	0.0	95	-0.01
41	T	Benzene	0.999	0.927	7.2	100	-0.01
42	T	Carbon Tetrachloride	0.502	0.576	-14.7	121	-0.01
43	T	Cyclohexane	0.366	0.364	0.5	107	-0.02
44	T	tert-Amyl Methyl Ether	0.732	0.752	-2.7	110	-0.03
45	T	1,2-Dichloropropane	0.238	0.203	14.7	92	-0.02
46	T	Bromodichloromethane	0.461	0.461	0.0	105	-0.01
47	T	Trichloroethene	0.297	0.350	-17.8	126	-0.01
48	T	1,4-Dioxane	0.180	0.202	-12.2	106	-0.06
49	T	2,2,4-Trimethylpentane (Iso	0.965	0.865	10.4	96	-0.03
50	T	Methyl Methacrylate	0.093	0.107	-15.1	113	-0.03
51	T	n-Heptane	0.228	0.214	6.1	98	-0.03
52	T	cis-1,3-Dichloropropene	0.411	0.412	-0.2	102	-0.02
53	T	4-Methyl-2-pentanone	0.209	0.198	5.3	98	-0.04
54	T	trans-1,3-Dichloropropene	0.427	0.428	-0.2	102	-0.02
55	T	1,1,2-Trichloroethane	0.270	0.270	0.0	106	-0.02

Data File : I:\MS09\DATA\2022_08\15\08152202.D Vial: 2
Acq On : 15 Aug 2022 5:08 Operator: SC
Sample : CCV R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 15 08:33:50 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	92	0.00
57	S	Toluene-d8 (SS2)	5.246	5.156	1.7	89	0.00
58	T	Toluene	5.279	5.375	-1.8	109	0.00
59	T	2-Hexanone	2.914	2.894	0.7	100	-0.02
60	T	Dibromochloromethane	1.829	2.203	-20.4	125	0.00
61	T	1,2-Dibromoethane	1.596	1.693	-6.1	112	0.00
62	T	n-Butyl Acetate	3.101	3.035	2.1	97	0.00
63	T	n-Octane	0.928	0.868	6.5	96	0.00
64	T	Tetrachloroethene	1.832	2.023	-10.4	119	0.00
65	T	Chlorobenzene	3.599	3.843	-6.8	116	0.00
66	T	Ethylbenzene	6.234	6.582	-5.6	110	0.00
67	T	m- & p-Xylenes	5.177	5.531	-6.8	112	0.01
68	T	Bromoform	1.682	2.034	-20.9	123	0.00
69	T	Styrene	3.524	3.969	-12.6	113	0.00
70	T	o-Xylene	5.010	5.400	-7.8	112	0.00
71	T	n-Nonane	2.506	2.296	8.4	94	0.00
72	T	1,1,2,2-Tetrachloroethane	2.230	2.037	8.7	94	0.00
73	S	Bromofluorobenzene (SS3)	2.119	2.364	-11.6	101	0.00
74	T	Cumene	6.258	6.845	-9.4	115	0.00
75	T	alpha-Pinene	3.039	3.243	-6.7	112	0.00
76	T	n-Propylbenzene	7.467	8.022	-7.4	110	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	115	0.00
78	T	4-Ethyltoluene	5.979	6.654	-11.3	114	0.00
79	T	1,3,5-Trimethylbenzene	5.206	5.842	-12.2	114	0.00
80	T	alpha-Methylstyrene	0.000	0.000	0.0	0#	-16.45#
81	T	2-Ethyltoluene	0.000	0.000	0.0	3353#	0.00
82	T	1,2,4-Trimethylbenzene	5.380	6.178	-14.8	117	0.00
83	T	n-Decane	0.000	0.000	0.0	15#	0.00
84	T	Benzyl Chloride	4.208	5.409	-28.5	122	0.00
85	T	1,3-Dichlorobenzene	3.325	3.908	-17.5	123	0.00
86	T	1,4-Dichlorobenzene	3.377	3.893	-15.3	122	0.00
87	T	sec-Butylbenzene	6.972	7.597	-9.0	114	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.975	7.168	-20.0	121	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	117	0.00
90	T	1,2-Dichlorobenzene	3.213	3.734	-16.2	124	0.00
91	T	d-Limonene	1.742	1.649	5.3	95	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.284	1.590	-23.8	124	0.00
93	T	n-Undecane	0.000	0.000	0.0	115	-0.01
94	T	1,2,4-Trichlorobenzene	2.760	3.504	-27.0	127	0.00
95	T	Naphthalene	6.486	9.229	-42.3#	137	0.00
96	T	n-Dodecane	0.000	0.000	0.0	402#	0.00
97	T	Hexachlorobutadiene	2.051	2.373	-15.7	121	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.64#
99	T	tert-Butylbenzene	5.169	6.083	-17.7	123	0.00
100	T	n-Butylbenzene	5.652	6.272	-11.0	112	0.00
101	T	1,1,1,2-Tetrachloroethane	1.523	1.782	-17.0	124	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152202.D Vial: 2
Acq On : 15 Aug 2022 5:08 Operator: SC
Sample : CCV R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 15 08:33:50 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

8/15/22

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	139669	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	9.28	114	567568	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	118074	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	272165	11.614	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.88%				
57) Toluene-d8 (SS2)	12.40	98	608771	12.285	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
73) Bromofluorobenzene (SS3)	16.79	174	279089	13.941	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 111.52%				
Target Compounds							Qvalue
2) Propene	3.26	42	53776	4.019	ng		94
3) Dichlorodifluoromethan...	3.33	85	172268	5.216	ng		99
4) Chloromethane	3.47	50	66689	4.391	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	82312	5.759	ng		99
6) Vinyl Chloride	3.65	62	77906	5.513	ng		98
7) 1,3-Butadiene	3.77	54	63993	6.283	ng		98
8) Bromomethane	3.99	94	50965	4.624	ng		94
9) Chloroethane	4.13	64	31146	4.084	ng		100
10) Ethanol	4.28	45	141282	15.987	ng		100
11) Acetonitrile	4.43	41	90786	3.495	ng		97
12) Acrolein	4.51	56	59067	8.790	ng		95
13) Acetone	4.61	58	175049	21.182	ng	#	77
14) Trichlorofluoromethane	4.73	101	171246	5.143	ng		98
15) 2-Propanol (Isopropanol)	4.83	45	323545	9.733	ng		93
16) Acrylonitrile	4.98	53	125761	8.906	ng		92
17) 1,1-Dichloroethene	5.23	96	62093	5.304	ng		91
18) 2-Methyl-2-Propanol (t...	5.30	59	349254	11.125	ng		96
19) Methylene Chloride	5.34	84	59834	4.687	ng		96
20) 3-Chloro-1-propene (Al...	5.43	41	106950	4.463	ng		94
21) Trichlorotrifluoroethane	5.55	151	76358	5.624	ng		92
22) Carbon Disulfide	5.57	76	398921	9.012	ng		99
23) trans-1,2-Dichloroethene	6.12	61	89408	4.792	ng		94
24) 1,1-Dichloroethane	6.31	63	103125	4.636	ng		100
25) Methyl tert-Butyl Ether	6.34	73	213051	5.190	ng		99
26) Vinyl Acetate	6.42	86	27489	18.648	ng	#	91
27) 2-Butanone (MEK)	6.64	72	68459	9.191	ng		100
28) cis-1,2-Dichloroethene	7.06	61	86979	4.715	ng		94
29) Diisopropyl Ether	7.25	87	99916	10.089	ng	#	84
30) Ethyl Acetate	7.25	61	84660	17.787	ng		95
31) n-Hexane	7.27	57	84849	4.617	ng		99
32) Chloroform	7.34	83	133844	5.029	ng		97
34) Tetrahydrofuran (THF)	7.73	72	62993	8.734	ng		95
35) Ethyl tert-Butyl Ether	7.79	87	156569	10.617	ng		92
36) 1,2-Dichloroethane	8.09	62	123190	5.395	ng		99
38) 1,1,1-Trichloroethane	8.37	97	145610	5.502	ng		98
39) Isopropyl Acetate	9.28	61	18723	No Calib			
40) 1-Butanol	9.19	56	174001	No Calib			
41) Benzene	8.87	78	218866	4.824	ng		99
42) Carbon Tetrachloride	9.04	117	137252	6.022	ng		98
43) Cyclohexane	9.18	84	171143	10.294	ng		91
44) tert-Amyl Methyl Ether	9.56	73	357000	10.738	ng		98
45) 1,2-Dichloropropane	9.83	63	47458	4.387	ng		100
46) Bromodichloromethane	10.05	83	109983	5.256	ng		98
47) Trichloroethene	10.12	130	81780	6.074	ng		99
48) 1,4-Dioxane	10.09	88	47768	5.831	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	208066	4.749	ng		94
50) Methyl Methacrylate	10.38	100	50569	11.950	ng	#	84

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152202.D Vial: 2
Acq On : 15 Aug 2022 5:08 Operator: SC
Sample : CCV R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 15 08:33:50 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M

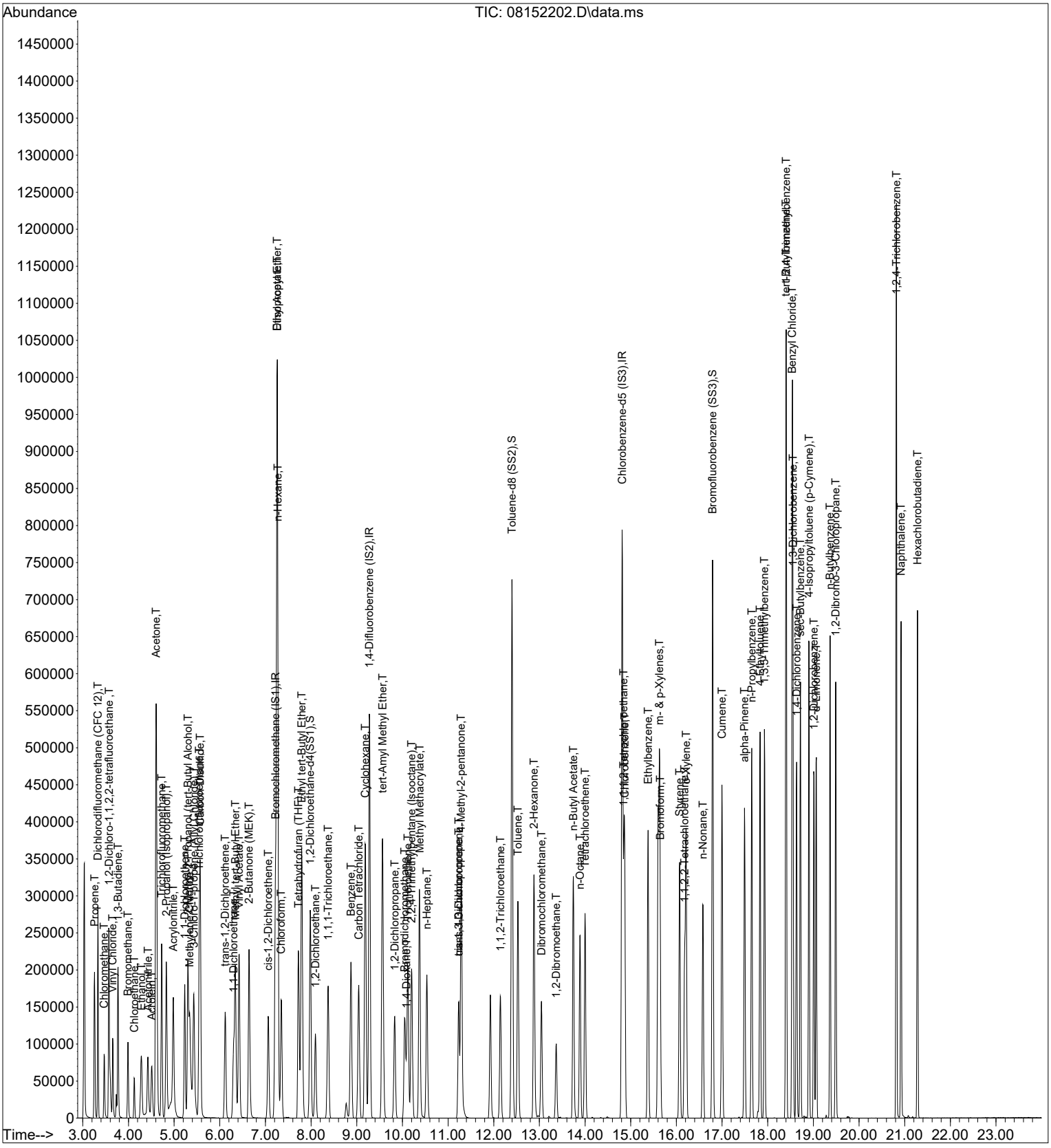
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	51103	4.929	ng		97
52) cis-1,3-Dichloropropene	11.23	75	98215	5.269	ng		100
53) 4-Methyl-2-pentanone	11.29	58	93601	9.858	ng		96
54) trans-1,3-Dichloropropene	11.23	75	98215	5.068	ng		100
55) 1,1,2-Trichloroethane	12.15	97	63650	5.194	ng		92
58) Toluene	12.53	91	261463	5.243	ng		100
59) 2-Hexanone	12.88	43	280223	10.179	ng		97
60) Dibromochloromethane	13.05	129	109235	6.323	ng		98
61) 1,2-Dibromoethane	13.37	107	83159	5.516	ng		99
62) n-Butyl Acetate	13.74	43	292372	9.981	ng		100
63) n-Octane	13.89	57	43064	4.911	ng		92
64) Tetrachloroethene	14.00	166	99348	5.740	ng		98
65) Chlorobenzene	14.87	112	188775	5.552	ng		99
66) Ethylbenzene	15.38	91	320195	5.438	ng		97
67) m- & p-Xylenes	15.62	91	538090	11.003	ng		97
68) Bromoform	15.65	173	99886	6.287	ng		99
69) Styrene	16.07	104	193072	5.800	ng		98
70) o-Xylene	16.21	91	265220	5.604	ng		96
71) n-Nonane	16.58	43	112760	4.764	ng		96
72) 1,1,2,2-Tetrachloroethane	16.18	83	100053	4.750	ng		96
74) Cumene	17.00	105	336213	5.687	ng		96
75) alpha-Pinene	17.49	93	165400	5.762	ng		100
76) n-Propylbenzene	17.65	91	397839	5.640	ng		96
77) 3-Ethyltoluene	17.00	105	336213	No Calib			
78) 4-Ethyltoluene	17.83	105	333118	5.898	ng		94
79) 1,3,5-Trimethylbenzene	17.93	105	286935	5.835	ng		93
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.49	105	20923	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	300533	5.914	ng		94
83) n-Decane	16.80	58	124	No Calib		#	
84) Benzyl Chloride	18.54	91	526282	13.239	ng		98
85) 1,3-Dichlorobenzene	18.55	146	191968	6.111	ng		100
86) 1,4-Dichlorobenzene	18.63	146	191235	5.994	ng		98
87) sec-Butylbenzene	18.72	105	373155	5.666	ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	352059	6.238	ng		98
89) 1,2,3-Trimethylbenzene	18.41	105	300533	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	185163	6.100	ng		99
91) d-Limonene	19.06	68	81765	4.970	ng		88
92) 1,2-Dibromo-3-Chloropr...	19.49	157	150202	12.383	ng		93
93) n-Undecane	17.93	58	4360	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	337625	12.952	ng		99
95) Naphthalene	20.92	128	453327	7.400	ng		99
96) n-Dodecane	18.91	58	5624	No Calib		#	
97) Hexachlorobutadiene	21.28	225	115424	5.959	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	298775	6.119	ng		100
100) n-Butylbenzene	19.37	91	308083	5.771	ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	87526	6.085	ng		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2022_08\15\08152202.D Vial: 2
Acq On : 15 Aug 2022 5:08 Operator: SC
Sample : CCV R9081522_5.0ng Inst : MS09
Misc : S35-07192201/S35-07192205 (8/18)

Quant Time: Aug 15 08:33:50 2022
Quant Method : I:\MS09\METHODS\R9071922.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Aug 11 09:26:44 2022
Response via : Initial Calibration
DataAcq Meth:TO15.M



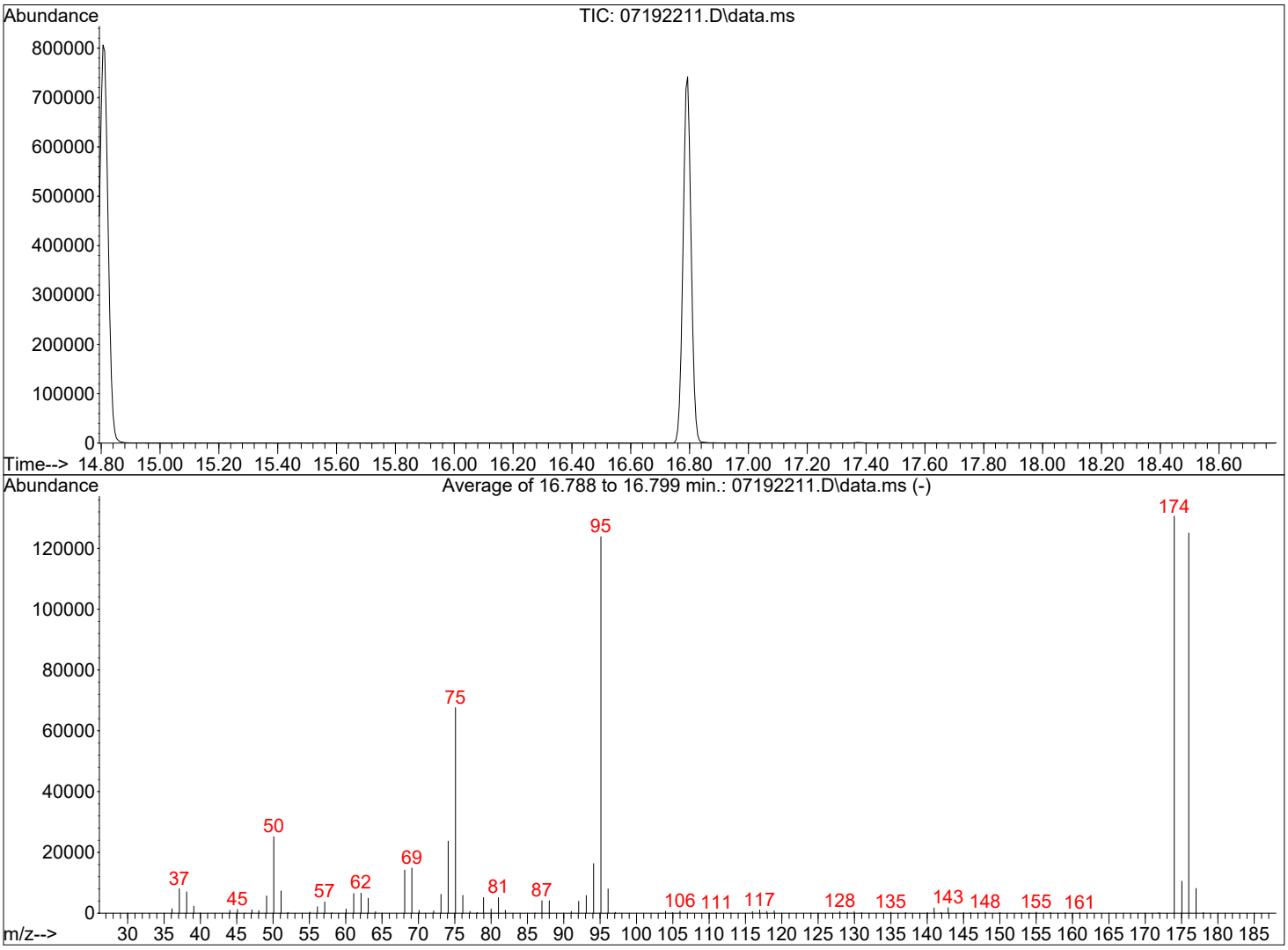
01132121

Data Path : I:\MS09\DATA\2022_07\19\
Data File : 07192211.D
Acq On : 19 Jul 2022 14:50
Operator : SC
Sample : 12.5ng TO-15 BFB STD
Misc : S35-07192201
ALS Vial : 2 Sample Multiplier: 1

7/20/22

Integration File: LSCINT.P

Method : I:\MS09\Methods\R9071922.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Jul 20 08:30:01 2022



AutoFind: Scans 2449, 2450, 2451; Background Corrected with Scan 2440

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.3	25179	PASS
75	95	30	66	54.6	67611	PASS
95	95	100	100	100.0	123861	PASS
96	95	5	9	6.4	7989	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	105.5	130613	PASS
175	174	4	9	8.0	10509	PASS
176	174	93	101	95.7	125040	PASS
177	176	5	9	6.5	8130	PASS

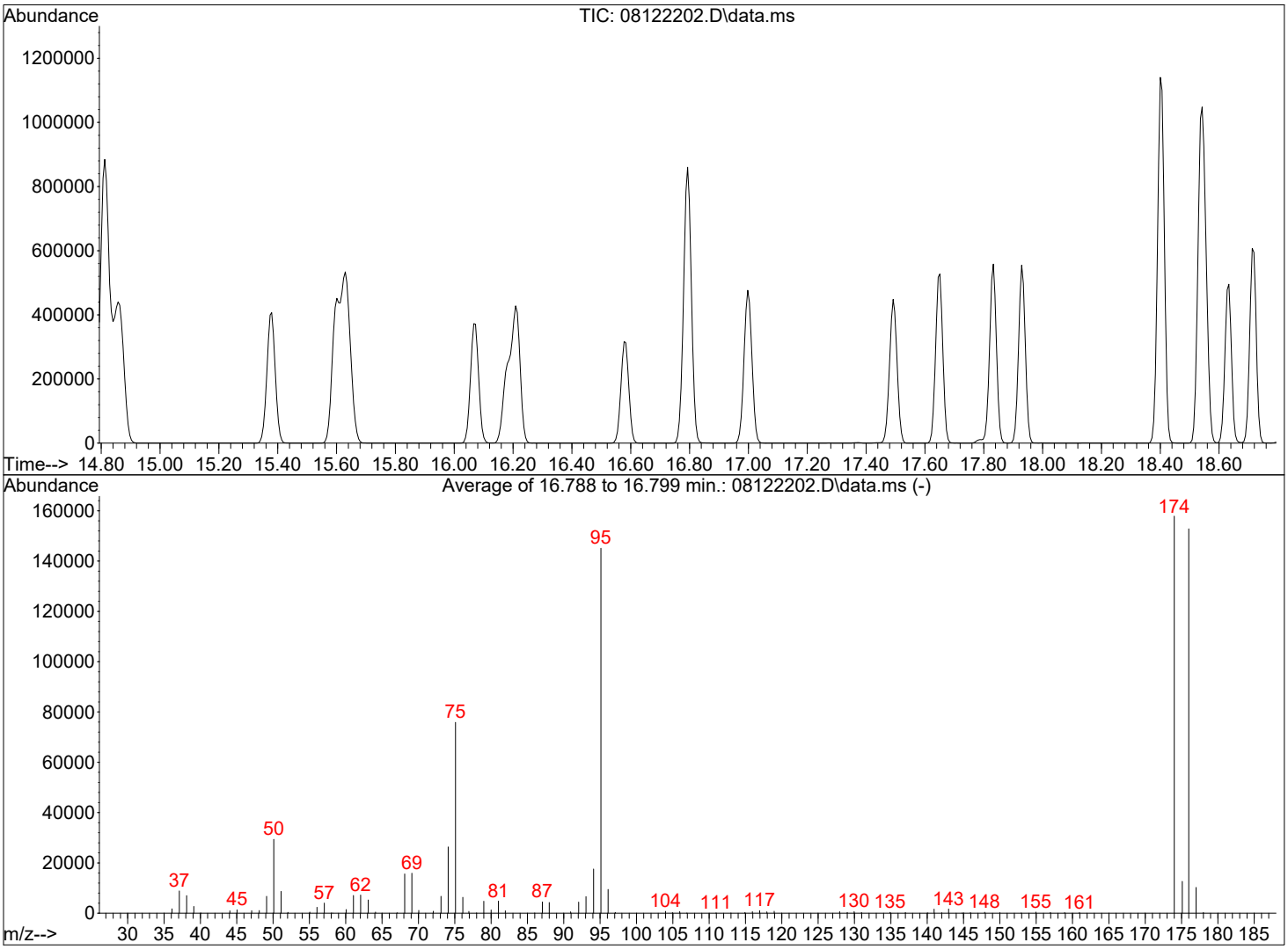
01132122

Data Path : I:\MS09\DATA\2022_08\12\
Data File : 08122202.D
Acq On : 11 Aug 2022 23:06
Operator : SC
Sample : CCV R9081222_5.0ng
Misc : S35-07192201/S35-07192205 (8/18)
ALS Vial : 2 Sample Multiplier: 1

8/12/22

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9071922.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Aug 11 09:26:44 2022



AutoFind: Scans 2449, 2450, 2451; Background Corrected with Scan 2440

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.2	29381	PASS
75	95	30	66	52.3	75893	PASS
95	95	100	100	100.0	145131	PASS
96	95	5	9	6.5	9466	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	108.8	157867	PASS
175	174	4	9	8.0	12658	PASS
176	174	93	101	96.8	152811	PASS
177	176	5	9	6.7	10254	PASS

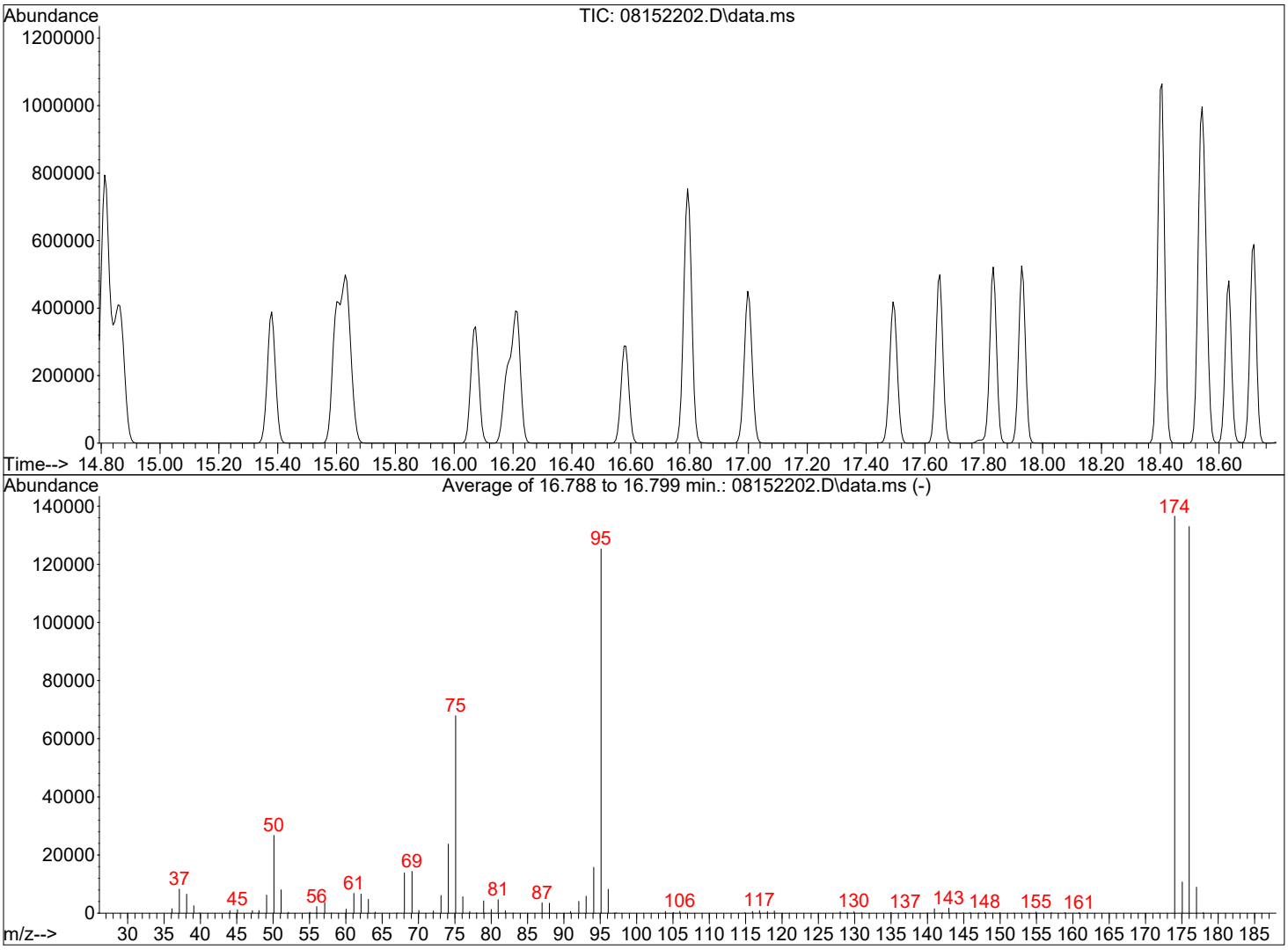
01132123

Data Path : I:\MS09\DATA\2022_08\15\
Data File : 08152202.D
Acq On : 15 Aug 2022 5:08
Operator : SC
Sample : CCV R9081522_5.0ng
Misc : S35-07192201/S35-07192205 (8/18)
ALS Vial : 2 Sample Multiplier: 1

8/15/22

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9071922.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Thu Aug 11 09:26:44 2022



AutoFind: Scans 2449, 2450, 2451; Background Corrected with Scan 2441

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.4	26763	PASS
75	95	30	66	54.2	67904	PASS
95	95	100	100	100.0	125280	PASS
96	95	5	9	6.6	8221	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	109.0	136552	PASS
175	174	4	9	7.9	10772	PASS
176	174	93	101	97.4	132981	PASS
177	176	5	9	6.7	8950	PASS

Injection Log

Directory: J:\MS09\DATA\2022_07\19\

11	7/19/22 14:50	07192211.D	12.5ng TO-15 BFB STD	S35-07192201	SC	2	pass
12	7/19/22 15:22	07192212.D	0.1ng TO-15 ICAL STD	S35-07192201/S35-07192211 (8/18)	SC	5	
13	7/19/22 15:54	07192213.D	0.2ng TO-15 ICAL STD	S35-07192201/S35-07192211 (8/18)	SC	5	
14	7/19/22 16:26	07192214.D	0.5ng TO-15 ICAL STD	S35-07192201/S35-07192210 (8/18)	SC	6	
15	7/19/22 16:57	07192215.D	1.0ng TO-15 ICAL STD	S35-07192201/S35-07192210 (8/18)	SC	6	
16	7/19/22 17:29	07192216.D	5.0ng TO-15 ICAL STD	S35-07192201/S35-07192210 (8/18)	SC	6	
17	7/19/22 18:01	07192217.D	25ng TO-15 ICAL STD	S35-07192201/S35-07192209 (8/18)	SC	7	
18	7/19/22 18:33	07192218.D	50ng TO-15 ICAL STD	S35-07192201/S35-07192209 (8/18)	SC	7	
19	7/19/22 19:05	07192219.D	100ng TO-15 ICAL STD	S35-07192201/S35-07192209 (8/18)	SC	7	
20	7/19/22 19:37	07192220.D	Blank	S35-07192201	SC	2	
21	7/19/22 20:09	07192221.D	25ng TO-15 ICV STD	S35-07192201/S35-06302203 (7/30)	SC	8	pass
22	7/19/22 20:41	07192222.D	25ng TO-15 ICV STD	S35-07192201/S35-06302203 (7/30)	SC	8	pass
23	7/19/22 21:14	07192223.D	12.5ng TO-15 Custom BFB	S35-07192201	SC	2	pass
24	7/19/22 21:46	07192224.D	0.4ng TO-15 Custom ICAL	S35-07192201/S35-06282203 (7/27)	SC	9	
25	7/19/22 22:18	07192225.D	1.0ng TO-15 Custom ICAL	S35-07192201/S35-06282203 (7/27)	SC	9	
26	7/19/22 22:50	07192226.D	2.5ng TO-15 Custom ICAL	S35-07192201/S35-06282203 (7/27)	SC	9	
27	7/19/22 23:22	07192227.D	5.0ng TO-15 Custom ICAL	S35-07192201/S35-06282203 (7/27)	SC	9	
28	7/19/22 23:55	07192228.D	25ng TO-15 Custom ICAL	S35-07192201/S35-06272203 (7/26)	SC	10	
29	7/20/22 0:27	07192229.D	50ng TO-15 Custom ICAL	S35-07192201/S35-06272203 (7/26)	SC	10	
30	7/20/22 0:59	07192230.D	100ng TO-15 Custom ICAL	S35-07192201/S35-06272203 (7/26)	SC	10	
31	7/20/22 1:32	07192231.D	Blank	S35-07192201	SC	2	
32	7/20/22 2:04	07192232.D	25ng TO-15 Custom ICV	S35-07192201/S35-06292201 (7/28)	SC	11	pass
33	7/20/22 2:36	07192233.D	25ng TO-15 Custom ICV	S35-07192201/S35-06292201 (7/28)	SC	11	pass
34							
35							
36							
37							
38							

7/20/22

Injection Log

01132125

Directory: I:\MS09\DATA\2022_08\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	8/11/22 22:34	08122201.D	RL R9081222_0.5ng	S35-07192201/S35-07192210 (8/18)	SC	4	
2	8/11/22 23:06	08122202.D	CCV R9081222_5.0ng	S35-07192201/S35-07192205 (8/18)	SC	2	Passed
3	8/11/22 23:38	08122203.D	CCV C9081222_5.0ng	S35-07192201/S35-07272203 (8/26)	SC	3	Passed
4	8/12/22 0:10	08122204.D	Blank	S35-07192201	SC	1	
5	8/12/22 0:43	08122205.D	MB R9081222_1000mL	S35-07192201	SC	2	Passed
6	8/12/22 1:15	08122206.D	LCS R9081222_5.0ng	S35-07192201/S35-07202205 (8/19)	SC	2	Passed
7	8/12/22 1:47	08122207.D	LCSD R9081222_5.0ng	S35-07192201/S35-07202205 (8/19)	SC	2	Passed
8	8/12/22 2:20	08122208.D	P2203399-001 (100mL)	S35-07192201	SC	13	
9	8/12/22 2:52	08122209.D	P2203399-002 (1000mL)	S35-07192201	SC	16	
10	8/12/22 5:01	08122210.D	P2203399-001 (500mL)	S35-07192201	SC	13	
11	8/12/22 6:59	08122211.D	P2203304-001 (25mL)	S35-07192201	SC	15	
12	8/12/22 7:31	08122212.D	P2203304-002 (1000mL)	S35-07192201	SC	16	
13	8/12/22 8:13	08122213.D	P2203401-001 (1000mL)	S35-07192201	SC	13	
14	8/12/22 9:20	08122214.D	P2203465-001 (100mL)	S35-07192201	SC	5	
15	8/12/22 9:52	08122215.D	P2203465-002 (400mL)	S35-07192201	SC	6	
16	8/12/22 10:24	08122216.D	P2203465-003 (400mL)	S35-07192201	SC	7	
17	8/12/22 10:56	08122217.D	P2203465-001Dil (15mL)	S35-07192201	SC	5	
18	8/12/22 11:28	08122218.D	P2203443-001 (1000mL)	S35-07192201	SC	14	
19	8/12/22 12:00	08122219.D	P2203447-001 (100mL)	S35-07192201	SC	8	
20	8/12/22 12:32	08122220.D	P2203447-002 (50mL)	S35-07192201	SC	9	
21	8/12/22 13:04	08122221.D	P2203447-003 (100mL)	S35-07192201	SC	10	
22	8/12/22 13:36	08122222.D	P2203447-001Dil (20mL)	S35-07192201	SC	8	
23	8/12/22 14:09	08122223.D	P2203447-002Dil (15mL)	S35-07192201	SC	9	
24	8/12/22 14:41	08122224.D	P2203447-003Dil (20mL)	S35-07192201	SC	10	
25	8/12/22 15:13	08122225.D	P2203433-001 (20mL)	S35-07192201	SC	11	
26	8/12/22 15:45	08122226.D	P2203433-002 (20mL)	S35-07192201	SC	12	
27	8/12/22 17:05	08122227.D	P2203433-003 (1000mL)	S35-07192201	SC	1	
28	8/12/22 17:37	08122228.D	P2203545-001 (0.2mL)	S35-07192201	SC	1	
29	8/12/22 18:09	08122229.D	P2203433-004 (1000mL)	S35-07192201	SC	3	
30	8/12/22 18:41	08122230.D	P2203433-004dup (1000mL)	S35-07192201	SC	3	Passed
							8/14/22

Injection Log

01132126

Directory: I:\MS09\DATA\2022_08\15\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	8/15/22 4:35	08152201.D	RL R9081522_0.5ng	S35-07192201/S35-07192210 (8/18)	SC	4	pass
2	8/15/22 5:08	08152202.D	CCV R9081522_5.0ng	S35-07192201/S35-07192205 (8/18)	SC	2	pass
3	8/15/22 5:40	08152203.D	Blank	S35-07192201	SC	1	
4	8/15/22 6:12	08152204.D	MB R9081522_1000mL	S35-07192201	SC	2	pass
5	8/15/22 6:44	08152205.D	LCS R9081522_5.0ng	S35-07192201/S35-07202205 (8/19)	SC	2	pass
6	8/15/22 7:16	08152206.D	LCSD R9081522_5.0ng	S35-07192201/S35-07202205 (8/19)	SC	2	pass
7	8/15/22 8:44	08152207.D	P2203451-003 (1000mL)	S35-07192201	SC	5	
8	8/15/22 9:18	08152208.D	P2203451-004 (1000mL)	S35-07192201	SC	3	
9	8/15/22 9:49	08152209.D	P2203451-005 (1000mL)	S35-07192201	SC	7	
10	8/15/22 10:21	08152210.D	P2203451-002 (1000mL)	S35-07192201	SC	16	
11	8/15/22 10:54	08152211.D	P2203433-001Dil (5.0mL)	S35-07192201	SC	1	
12	8/15/22 11:26	08152212.D	P2203433-002Dil (5.0mL)	S35-07192201	SC	1	
13	8/15/22 11:58	08152213.D	P2203468-001 (100mL)	S35-07192201	SC	5	
14	8/15/22 12:29	08152214.D	P2203497-001 (400mL)	S35-07192201	SC	6	
15	8/15/22 13:02	08152215.D	P2203497-002 (400mL)	S35-07192201	SC	7	
16	8/15/22 13:33	08152216.D	P2203497-003 (400mL)	S35-07192201	SC	8	
17	8/15/22 14:10	08152217.D	P2203437-003 (1000mL)	S35-07192201	SC	15	
18	8/15/22 14:42	08152218.D	P2203437-004 (1000mL)	S35-07192201	SC	16	
19	8/15/22 15:28	08152219.D	P2203494-001 (1000mL)	S35-07192201	SC	5	
20	8/15/22 16:00	08152220.D	P2203494-002 (100mL)	S35-07192201	SC	6	
21	8/15/22 16:32	08152221.D	P2203494-001Dil (100mL)	S35-07192201	SC	5	
22	8/15/22 17:25	08152222.D	P2203471-001 (1000mL)	S35-07192201	SC	9	
23	8/15/22 17:57	08152223.D	P2203471-002 (1000mL)	S35-07192201	SC	10	
24	8/15/22 18:29	08152224.D	P2203471-003 (1000mL)	S35-07192201	SC	11	
25	8/15/22 19:01	08152225.D	P2203471-004 (1000mL)	S35-07192201	SC	12	
26	8/15/22 19:33	08152226.D	P2203471-005 (1000mL)	S35-07192201	SC	13	
27	8/15/22 20:05	08152227.D	P2203471-005dup (1000mL)	S35-07192201	SC	13	pass
							8/16/22

APPENDIX I
PROTOCOL FOR DISCHARGING GWTP EFFLUENT

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MEMORANDUM

DATE: August 28, 2017

PROJECT NAME: Remediation of Multiple Sites, Longhorn Army Ammunition Plant, Karnack, TX

TO:	Richard Mayer	Senior Project Engineer US Environmental Protection Agency Federal Facilities Section (6PD-F)
	April Palmie	Project and Grant Manager Superfund Section, Remediation Division Texas Commission on Environmental Quality
FROM:	Rose M. Zeiler, Ph.D.	Longhorn AAP Site Manager

SUBJECT: **Protocol for Discharging GWTP Effluent**
Longhorn Army Ammunition Plant, Karnack, TX
(Contract: W912DY-09-D-0059, Task Order DS01)

INTRODUCTION

The purpose of this memo is to document the protocol for discharging Longhorn Army Ammunition Plant groundwater treatment plant (GWTP) effluent to Harrison Bayou, the INF-Pond, or LHAAP-18/24.

The GWTP is designed to:

- Extract groundwater from LHAAP-18/24 and LHAAP-16 for hydraulic control;
- Remove metals by pH adjustment, polymer addition, and gravity separation;
- Remove volatile organic compounds (VOCs) by air stripping;
- Remove perchlorate in a fluidized bed reactor (FBR) and an ion exchange scavenger system; and
- Discharge the effluent continuously.

DISCHARGE CRITERIA

The discharge criteria established for discharge to Harrison Bayou are:

Parameter	Discharge Criteria (µg/L)	
	Daily Average	Daily Maximum
Volatiles		
1,1,1-Trichloroethane	3,417	7,230
1,1,2-Trichloroethane	102.5	216.9
1,1-Dichloroethane	6,633	14,032
1,1-Dichloroethene	119	253
1,2-Dichloroethane	85	181
Acetone	1,132	2,395
Benzene	85	181
Carbon Tetrachloride	85	181
Chlorobenzene	22,300	47,180
Chloroform	1,708	3,615
Ethylbenzene	26,954	57,025
Xylenes	39.5	83.6
Methylene Chloride	803	1,699
Styrene	2,829	5,987
Tetrachloroethene	85.4	180.7
Toluene	1,980	4,189
Trichloroethene	85	181
Vinyl Chloride	34	72
Anions		
Chloride	*	*
Sulfate	*	*
Perchlorate**	278	589
Metals		
Aluminum	777	1,644
Arsenic	365	772
Barium	1,000	2,000
Cadmium	1.6	3.4
Chromium, Total	355	752
Chromium, Hexavalent	58	124
Cobalt	5,433	11,495
Iron	1,132	2,395
Lead	2.2	4.6
Nickel	87	184
Manganese	7,323	15,494
Silver	1.4	3
Selenium	5.7	12
Vanadium	1,698	3,592
Zinc	146	310
Other		
Hexachlorobenzene	0.22	0.47
1,4-Dioxane		134.2
Oil and Grease		15
Chemical Oxygen Demand		200

* - Based upon flow in Harrison Bayou

** - Discharge criteria, when diverted to the INF Pond, is 17 µg/L

PROTOCOL FOR DISCHARGING GWTP EFFLUENT

In accordance with the *Sampling and Analysis Plan, Groundwater Treatment Plant and Well Fields* (SAP) Table 2-2, indicator parameters for the FBR, such as temperature, pH and oxidation reduction potential (ORP), are monitored in real time to predict FBR performance and perchlorate removal. Based upon these indicator parameters, the operator of the GWTP can make adjustments such as:

- Bring the ion exchange system online;
- Increase or decrease the addition rate of electron donor (acetic acid);
- Increase or decrease the nutrient addition rate (urea or phosphoric acid); or
- Increase or decrease the FBR recirculation rate

Samples of the GWTP effluent are collected weekly, analyzed for perchlorate, nutrients (ammonia-nitrogen and ortho-phosphate), total organic carbon (TOC), chloride, and sulfate, with the results received from the laboratory 14 days later. Other parameters (e.g. Record of Decision metals and volatiles) are collected and analyzed in GWTP effluent samples according to the frequencies listed in Table 2-1 of the SAP.

As shown in Figure 1, groundwater is continuously extracted, treated, and discharged. If Harrison Bayou is flowing and indicator parameters are within their historical optimal ranges, then the ion exchange vessels can be bypassed and the GWTP effluent sample will be collected after the FBR. If Harrison Bayou is not flowing or the indicator parameters are not within historical optimal ranges, then the ion exchange vessels will be put on line, and the GWTP effluent sample will be collected between the lead and lag ion exchange vessel. Professional judgement may also be used as to when to bring the ion exchange vessels online, such as after a power outage or during anticipated cold temperatures when the FBR has historically not performed optimally.

If a parameter is measured in the effluent at a concentration above the discharge criteria, then a confirmation sample and an effluent sample after the lag ion exchange vessel will be collected and analyzed for the parameter with a 24-hour turnaround time. Corrective measures (e.g. increased nutrient or electron donor addition rates, bring ion exchange vessels on line) will be implemented as appropriate to bring the parameter back within the discharge criteria. ***If an upset condition in the FBR leads to high concentrations of perchlorate going into the lead ion exchange vessel and breaking through at the sample location between the vessels, the lag vessel will still remove perchlorate before it is discharged to Harrison Bayou, the INF Pond, or LHAAP-18/24.*** It is estimated that the lag ion exchange vessel can remove all of the perchlorate from two weeks of typical groundwater extraction at a concentration of 920 µg/L. If the residual perchlorate concentration after the FBR and lead ion exchange vessel is only 600 µg/L, the lag ion exchange vessel could last almost 2.5 years before perchlorate would be detected in the discharged effluent.

If a parameter exceeds the discharge criteria by more than 40% (see Appendix A-2, SAP, Section 7c of Monitoring and Reporting Requirements) or reaches 920 µg/L of perchlorate, then the GWTP will be put into full recycle mode (no discharge) until the parameter is below the discharge criteria again. Appendix A-2 of the SAP requires GWTP data to be provided to TCEQ monthly including a list of noncompliance(s), if applicable.

Discharge to Harrison Bayou

As shown in Figure 1, the GWTP effluent will be discharged to Harrison Bayou as long as it has a measurable flow. The flowrate in Harrison Bayou is estimated by measuring the height of water with a staff gauge and velocity in feet/sec at intervals along the width as described in the Installation-Wide Work Plan, Standard Operating Procedures, Attachment 18 – Water Depth and Velocity Measurements (AECOM, July 2014).

The allowable flow rate of GWTP effluent that can be discharged to Harrison Bayou is given by:

$$QE \leq \frac{QS\,(CC - CA)}{(CE - CC)}$$

where Q_E = GWTP effluent flow Q_S = Harrison Bayou flow

C_C = Criteria concentration (100 mg/L for chloride, 50 mg/L for sulfate)

C_A = Ambient concentration = 10 mg/L

C_E = Chloride or sulfate concentration in GWTP effluent

The allowable GWTP effluent flow will be the lower of the calculated values given the measured concentrations of chloride and sulfate in the discharge stream. For each day that GWTP effluent is discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Discharge to INF Pond

If Harrison Bayou is not flowing, then GWTP effluent will be discharged to the Intermediate-Range Nuclear Forces (INF) Pond for temporary storage until Harrison Bayou flow resumes. Perchlorate concentration detected in the effluent must be 17 µg/L or less, when this occurs.

The INF Pond has a flexible membrane liner protected by a soil cover with a gravity discharge pipe (and valve) to Harrison Bayou. The INF Pond has a nominal capacity of 3 million gallons with a staff gage to measure the height of water stored in the pond. The GWTP operator maintains the INF Pond by visually inspecting for erosion, vegetative growth including tree growth along the anchor trench, and liner integrity and making necessary repairs. Periodically, accumulated debris must be removed from the influent and effluent piping to the INF Pond.

Prior to discharging to the INF Pond, a lead and lag ion exchange vessel will be brought online. The GWTP Operator will also confirm that the discharge valve is closed, will record the reading on the effluent totalizer, and will record the height of water using the staff gage. The GWTP Operator will then configure valves and pumps to direct GWTP effluent to the INF Pond. The height of water in the INF Pond and totalizer reading will be recorded at the beginning and end of each shift for the duration of active discharge. When the height of water in the pond reaches 3 feet below the height of the berm (freeboard), the GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified. After the TCEQ acknowledges the INF Pond level, GWTP effluent may be discharged to the INF Pond again until 2 feet of freeboard is reached. The GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified again. After the TCEQ acknowledges 2 feet of freeboard in the INF Pond,GWTP effluent may be discharged again until 1 foot of freeboard remains. No additional GWTP effluent can be accepted at the INF Pond until greater than 1 foot of freeboard is measured.

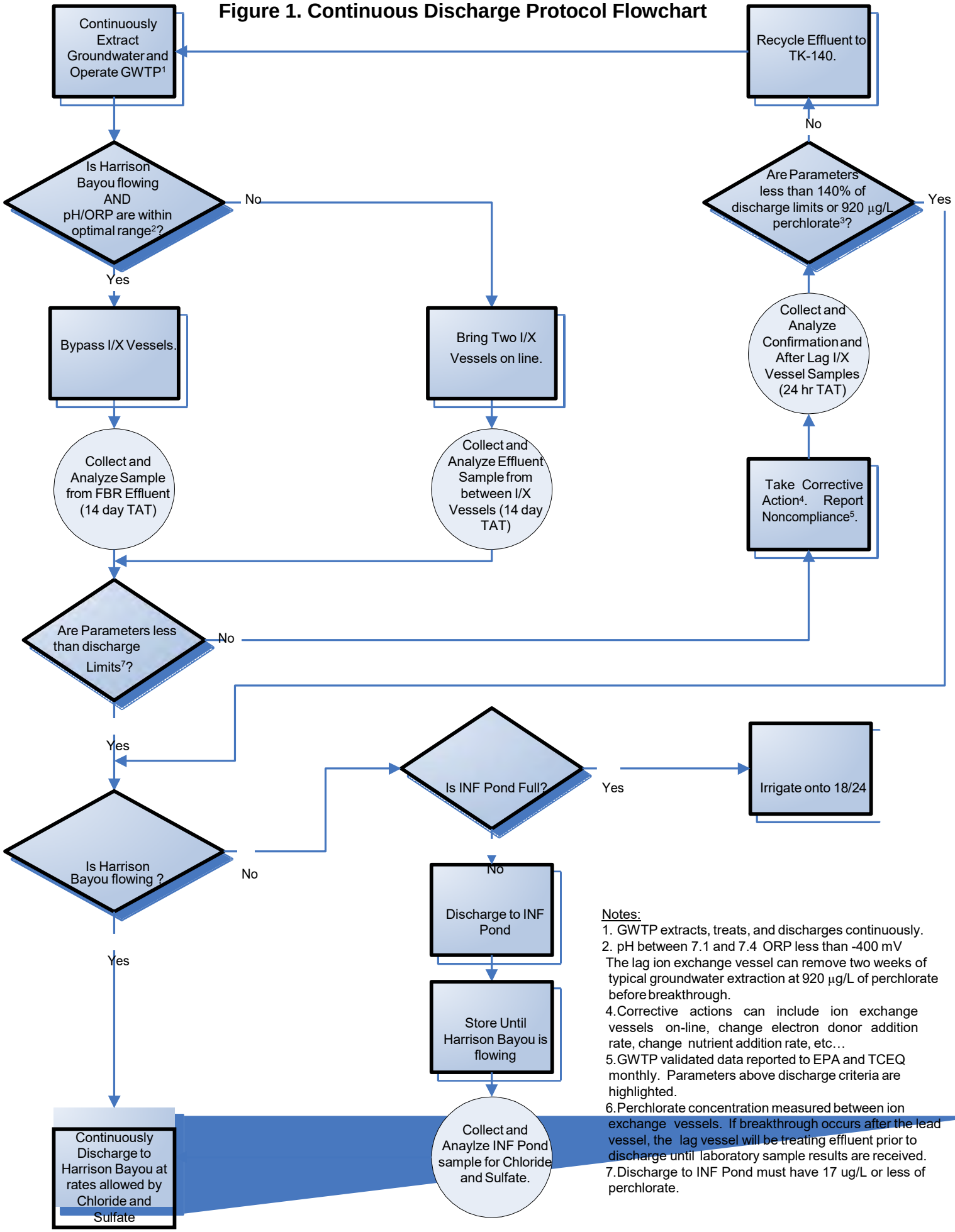
As soon as flow in Harrison Bayou returns, stored GWTP effluent from the INF Pond will be discharged. As with direct discharges from the GWTP to Harrison Bayou, the allowable flowrate of effluent from the INF Pond is calculated based upon the chloride and sulfate concentrations in the pond and the flow in Harrison Bayou. If effluent from the INF Pond and the GWTP are discharged simultaneously, total flow of both streams together should not exceed the calculated discharge level for either discharge location. For each day that INF Pond contents are discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Irrigation onto LHAAP-18/24

If Harrison Bayou is not flowing and the INF Pond has less than 1 foot of freeboard, then GWTP effluent will be irrigated onto LHAAP-18/24 using one of the three main sprinkler lines. To avoid pooling and runoff of irrigation water, only one line will be used for half a day at a time, with a separate line being used the second half of the day. If needed, the irrigation will occur 5 days a week for 8 hours each day (using 3 sprinklers in each line). If conditions are wet due to rain events, irrigation will not be conducted to avoid ponding and potential runoff, the GWTP will be put into recycle mode, and groundwater extraction will be interrupted if storage space is not available.

While irrigating, site inspections will be performed to ensure pooling and runoff are not occurring. During the irrigation activities, inspections will be performed twice a day, once approximately three hours and again approximately six hours into the 8-hour irrigation shift. The system will be inspected to ensure that the sprinkler heads are operating properly and not leaking large amounts of water. If ponding or runoff is observed, irrigation at that sprinkler line will cease, and irrigation at another sprinkler line will be started if possible. Volumes of GWTP effluent and twice daily inspections will be recorded daily and reported monthly until flow resumes in Harrison Bayou or greater than 1 foot of freeboard is available in the INF Pond.

Figure 1. Continuous Discharge Protocol Flowchart



Notes:

1. GWTP extracts, treats, and discharges continuously.
2. pH between 7.1 and 7.4 ORP less than -400 mV
The lag ion exchange vessel can remove two weeks of typical groundwater extraction at 920 µg/L of perchlorate before breakthrough.
4. Corrective actions can include ion exchange vessels on-line, change electron donor addition rate, change nutrient addition rate, etc…
5. GWTP validated data reported to EPA and TCEQ monthly. Parameters above discharge criteria are highlighted.
6. Perchlorate concentration measured between ion exchange vessels. If breakthrough occurs after the lead vessel, the lag vessel will be treating effluent prior to discharge until laboratory sample results are received.
7. Discharge to INF Pond must have 17 ug/L or less of perchlorate.

APPENDIX J
AIR DATA TABLES, PID READINGS, AND CALIBRATION LOGS

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Appendix J Table 1. Ambient Air Data - August 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Short Term ESL March 2012	AMCVs (Short Term Health)	GWTP Ambient Air Concentrations (1)		Status (3)	Downwind Ambient Air Concentrations (2)		Status (3)
		µg/m^3	µg/m^3	µg/m^3			µg/m^3		
1,1-Dichloroethane	75-34-3	4,000	4,047	0.87	U	PASS	0.70	U	PASS
1,1-Dichloroethene	75-35-4	210	714	0.89	U	PASS	0.72	U	PASS
1,2-Dichloroethane	107-06-2	160	162	0.87	U	PASS	0.70	U	PASS
Acetone	67-64-1	5,900	NA	**25**		PASS	6.9	U	PASS
Benzene	71-43-2	170	575	**1.3**		PASS	0.67	U	PASS
Carbon disulfide	75-15-0	30	NA	1.8	U	PASS	1.5	U	PASS
Chloroform	67-66-3	100	98	0.89	U	PASS	0.72	U	PASS
cis-1,2-Dichloroethene	156-59-2	7,900	NA	**2.2**		PASS	0.69	U	PASS
Methylene chloride	75-09-2	3,600	12,158	**1.1**		PASS	0.69	U	PASS
Tetrachloroethene	127-18-4	2,000	6,782	0.86	U	PASS	0.69	U	PASS
trans-1,2-Dichloroethene	156-60-5	7,900	NA	0.87	U	PASS	0.70	U	PASS
Trichloroethene	79-01-6	540	537	**3.8**	J	PASS	0.69	U	PASS
Vinyl chloride	75-01-4	20,000	66,460	0.86	U	PASS	0.69	U	PASS
n-Hexane	110-54-3	5,300	6,336	**41**		PASS	**5.0**		PASS
Styrene	100-42-5	110	21,725	0.83	U	PASS	0.67	U	PASS
Toluene	108-88-3	640	15,074	**14**		PASS	**1.5**		PASS
Ethylbenzene	100-41-4	740	86,844	**1.9**		PASS	0.69	U	PASS
m,p-Xylenes	179601-23-1	180	7,382	**6.6**		PASS	1.5	U	PASS
o-Xylene	95-47-6	1,600	7,382	**2.4**		PASS	0.69	U	PASS
1,3-Dichlorobenzene	541-73-1	720	NA	0.86	U	PASS	0.69	U	PASS
Propene (C3H6)	115-07-1	Asphyxiant	Asphyxiant	**4.1**		NA	0.69	U	NA
Dichlorodifluoromethane (CFC 12)	75-71-8	50,000	49,452	**4.7**		PASS	**1.8**		PASS
Ethanol	64-17-5	18,800	NA	**41**		PASS	6.7	U	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	28,000	56,184	**15**		PASS	**2.4**		PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	38,000	NA	**2.6**		PASS	**1.7**		PASS
alpha-Pinene	80-56-8	60	3,499	**1.4**		PASS	**2.3**		PASS
d-Limonene	5989-27-5	1,100	NA	**2.2**		PASS	0.67	U	PASS

Notes:

(1) Sample collected over an 8-hour period on August 1, 2022, between 06:30 AM and 02:30 PM

(2) Sample collected over a 24-hour period beginning on August 1 2022, at 07:00 AM and ending on August 2, 2022 at 07:00 AM

(3) Status based on comparison of air sample result to Air Monitoring Comparison Values (AMCVs). When there is no AMCV value for a chemical, the air sample concentration is compared to the short-term Effects Screening Level (ESL).

CAS # = Chemical Abstracts Service Number

GWTP = Groundwater Treatment Plant

U = non-detect

µg/m^3 = micrograms per cubic meter

g/mole = gram/mole

mol/m3 = mole per cubic meter

NA - Not applicable

Bold text denotes detections

Appendix J Table 2. Emission Stack Air Data - August 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Measured Air Stripper Stack Concentrations (1)		Air Stripper Emission Rates (2)		Air Stripper Emission Rates (2a)		Allowable Annual Emission (3)	Status (4)	TLV (5)	TLV Reference	Compliance section	Distance Downwind to nearest off-site Receptor (D)	(K) conversion value	Allowable Maximum Hourly Emission Limit at Nearest off-site Receptor (6)(7) (E) = L/K	Status (8)
		µg/m^3		lb/hr		tpy		tpy		mg/m^3			feet		lb/hr	
1,1-Dichloroethane	75-34-3	36	U	2.95E-04	U	1.92E-04	U	5	PASS	405	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,1-Dichloroethene	75-35-4	**110**		1.80E-03		1.17E-03		5	PASS	20	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.4	PASS
1,2-Dichloroethane	107-06-2	**87**		1.43E-03		9.27E-04		5	PASS	40	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.9	PASS
Acetone	67-64-1	360	U	2.95E-03	U	1.92E-03	U	5	PASS	590	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Benzene	71-43-2	34	U	2.79E-04	U	1.81E-04	U	5	PASS	3	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.21	PASS
Carbon disulfide	75-15-0	75	U	6.15E-04	U	4.00E-04	U	5	PASS	31	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.2	PASS
Chloroform	67-66-3	37	U	3.03E-04	U	1.97E-04	U	5	PASS	10	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.71	PASS
cis-1,2-Dichloroethene	156-59-2	**7,100**		1.16E-01		7.57E-02		5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Methylene chloride	75-09-2	**43**		7.05E-04		4.58E-04		5	PASS	26	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.9	PASS
Tetrachloroethene	127-18-4	**88**		1.44E-03		9.38E-04		5	PASS	33.5	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.4	PASS
trans-1,2-Dichloroethene	156-60-5	36	U	2.95E-04	U	1.92E-04	U	5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichloroethene	79-01-6	**7,300**	J	1.20E-01		7.78E-02		5	PASS	135	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Vinyl chloride	75-01-4	**540**		8.85E-03		5.75E-03		5	PASS	2	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.14	PASS
n-Hexane	110-54-3	36	U	2.95E-04	U	1.92E-04	U	5	PASS	1,800	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Styrene	100-42-5	34	U	2.79E-04	U	1.81E-04	U	5	PASS	21	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.5	PASS
Toluene	108-88-3	36	U	2.95E-04	U	1.92E-04	U	5	PASS	188	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Ethylbenzene	100-41-4	36	U	2.95E-04	U	1.92E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
m,p-Xylenes	179601-23-1	75	U	6.15E-04	U	4.00E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
o-Xylene	95-47-6	36	U	2.95E-04	U	1.92E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,3-Dichlorobenzene	541-73-1	36	U	2.95E-04	U	1.92E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
Propene (C3H6)	115-07-1	36	U	2.95E-04	U	1.92E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	6.0	PASS
Dichlorodifluoromethane (CFC 12)	75-71-8	**44**		7.21E-04		4.69E-04		5	PASS	4,950	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Ethanol	64-17-5	340	U	2.79E-03	U	1.81E-03	U	5	PASS	1,880	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	36	U	2.95E-04	U	1.92E-04	U	5	PASS	5,620	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	**7,100**		1.16E-01		7.57E-02		5	PASS	7,670	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
alpha-Pinene	80-56-8	37	U	3.03E-04	U	1.97E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
d-Limonene	5989-27-5	34	U	2.79E-04	U	1.81E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
		TOTAL		0.379												

Notes:

(1) Sample collected on August 1, 2022. The higher value of the sample or duplicate is reported.

(2) Based on a blower flow rate of 4,390 cubic feet per minute (cfm). Note that plant operates less than or equal to 25 hours per week. 1/2 of detection limit was used for estimating mass rate

(2a) Based on operation of 25 hours per week, 52 weeks per year.

(3) Per 30TAC 106.533(f)(1)(B)

(4) Based on comparing the calculated air stripper stack sample emission rate in tons per year (tpy) to the allowable annual emission limit per chemical of 5 tpy.

(5) No Threshold Limit Values (TLVs) for these chemicals

(6) The maximum hourly limit allowed by 30 Texas Administrative Code (TAC) 106.262, per pollutant, is 6 pounds per hour (lb/hr) per "Figure 1: 30 TAC 106.262(a)". The E value was overridden with 6 lb/hr when the calculated E was higher.

(7) The maximum hourly emission rate allowed by 30 TAC 106.261(a)(3) for chemicals with a limit value (L) greater than 200 mg/m^3 is 1 lb/hr.

(8) Based on comparing the calculated air stripper stack sample emission rate in pounds per hour (lb/hr) to the allowable maximum emission limit per chemical based on distance downwind to nearest off-site receptor.

CAS # = Chemical Abstracts Service Number

mg/m^3 = milligrams per cubic meter

µg/m^3 = micrograms per cubic meter

ACGIH = American Conference of Governmental Industrial Hygienists

U = non-detect

J - estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

Appendix J Table 3. PID Readings - 3rd Quarter 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Date	Time	Location	Air Flow Rate at Blower	Instrument ID	Person Collecting	PID Reading	Weather Conditions
7/5/2022	8:00	Outside GWTP Office	2654 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/5/2022	8:00	Downwind	2654 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/5/2022	8:00	Stripper	2654 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.9 ppm Steady State 6.1 ppm	Clear 83°F
7/5/2022	14:00	Outside GWTP Office	2521 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 96°F
7/5/2022	14:00	Downwind	2521 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 96°F
7/5/2022	14:00	Stripper	2521 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.2 ppm Steady State 5.3 ppm	Clear 96°F
7/7/2022	8:00	Outside GWTP Office	2529 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 82°F
7/7/2022	8:00	Downwind	2529 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 82°F
7/7/2022	8:00	Stripper	2529 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.6 ppm Steady State 6.4 ppm	Clear 82°F
7/7/2022	9:30	Outside GWTP Office	2463 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
7/7/2022	9:30	Downwind	2463 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 86°F
7/7/2022	9:30	Stripper	2463 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.7 ppm Steady State 6.0 ppm	Clear 86°F
7/11/2022	8:00	Outside GWTP Office	2614 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 82°F
7/11/2022	8:00	Downwind	2614 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 82°F
7/11/2022	8:00	Stripper	2614 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.7 ppm Steady State 6.9 ppm	Clear 82°F
7/11/2022	14:00	Outside GWTP Office	2453 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 94°F
7/11/2022	14:00	Downwind	2453 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 94°F
7/11/2022	14:00	Stripper	2453 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.7 ppm Steady State 5.8 ppm	Clear 94°F
7/14/2022	8:00	Outside GWTP Office	2547 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 74°F
7/14/2022	8:00	Downwind	2547 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 74°F
7/14/2022	8:00	Stripper	2547 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.2 ppm Steady State 5.6 ppm	Cloudy 74°F
7/14/2022	10:00	Outside GWTP Office	2489 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 78°F
7/14/2022	10:00	Downwind	2489 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 78°F
7/14/2022	10:00	Stripper	2489 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.4 ppm Steady State 6.7 ppm	Cloudy 78°F
7/18/2022	8:00	Outside GWTP Office	2539 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/18/2022	8:00	Downwind	2539 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/18/2022	8:00	Stripper	2539 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.7 ppm Steady State 6.3 ppm	Clear 83°F
7/18/2022	14:00	Outside GWTP Office	2412 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 99°F
7/18/2022	14:00	Downwind	2412 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 99°F
7/18/2022	14:00	Stripper	2412 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.8 ppm Steady State 6.8 ppm	Clear 99°F
7/21/2022	8:00	Outside GWTP Office	2515 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/21/2022	8:00	Downwind	2515 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 83°F
7/21/2022	8:00	Stripper	2515 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.7 ppm Steady State 7.5 ppm	Clear 83°F
7/21/2022	10:00	Outside GWTP Office	2455 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 87°F
7/21/2022	10:00	Downwind	2455 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 87°F
7/21/2022	10:00	Stripper	2455 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm Steady State 7.0 ppm	Clear 87°F
7/25/2022	8:00	Outside GWTP Office	2509 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 82°F
7/25/2022	8:00	Downwind	2509 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 82°F

Appendix J Table 3. PID Readings - 3rd Quarter 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

7/25/2022	8:00	Stripper	2509 ACFM	MiniRAE 3000	Scott Beesinger	Max. 23.2 ppm	Steady State 6.6 ppm	Clear 82°F
7/25/2022	14:00	Outside GWTP Office	2431 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 96°F
7/25/2022	14:00	Downwind	2431 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 96°F
7/25/2022	14:00	Stripper	2431 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.3 ppm	Steady State 6.1 ppm	Clear 96°F
7/28/2022	8:00	Outside GWTP Office	2458 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 84°F
7/28/2022	8:00	Downwind	2458 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 84°F
7/28/2022	8:00	Stripper	2458 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.1 ppm	Steady State 5.5 ppm	Clear 84°F
7/28/2022	9:30	Outside GWTP Office	2385 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 86°F
7/28/2022	9:30	Downwind	2385 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 86°F
7/28/2022	9:30	Stripper	2385 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.6 ppm	Steady State 5.9 ppm	Clear 86°F
8/1/2022	8:00	Outside GWTP Office	2477 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 83°F
8/1/2022	8:00	Downwind	2477 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 83°F
8/1/2022	8:00	Stripper	2477 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.0 ppm	Steady State 6.2 ppm	Clear 83°F
8/1/2022	14:00	Outside GWTP Office	2389 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 95°F
8/1/2022	14:00	Downwind	2389 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 95°F
8/1/2022	14:00	Stripper	2389 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.7 ppm	Steady State 5.9 ppm	Clear 95°F
7/28/2022	8:00	Outside GWTP Office	2493 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 84°F
7/28/2022	8:00	Downwind	2493 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 84°F
7/28/2022	8:00	Stripper	2493 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.7 ppm	Steady State 5.9 ppm	Clear 84°F
7/28/2022	9:30	Outside GWTP Office	2401 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 89°F
7/28/2022	9:30	Downwind	2401 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 89°F
7/28/2022	9:30	Stripper	2401 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.2 ppm	Steady State 5.7 ppm	Clear 89°F
8/8/2022	8:00	Outside GWTP Office	2467 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 82°F
8/8/2022	8:00	Downwind	2467 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 82°F
8/8/2022	8:00	Stripper	2467 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm	Steady State 6.3 ppm	Clear 82°F
8/8/2022	14:00	Outside GWTP Office	2331 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 98°F
8/8/2022	14:00	Downwind	2331 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 98°F
8/8/2022	14:00	Stripper	2331 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.2 ppm	Steady State 5.7 ppm	Clear 98°F
8/11/2022	8:00	Outside GWTP Office	2493 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 74°F
8/11/2022	8:00	Downwind	2493 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 74°F
8/11/2022	8:00	Stripper	2493 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.6 ppm	Steady State 6.1 ppm	Clear 74°F
8/11/2022	10:00	Outside GWTP Office	2288 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 77°F
8/11/2022	10:00	Downwind	2288 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 77°F
8/11/2022	10:00	Stripper	2288 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.2 ppm	Steady State 5.1 ppm	Clear 77°F
8/15/2022	8:00	Outside GWTP Office	2624 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 80°F
8/15/2022	8:00	Downwind	2624 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 80°F
8/15/2022	8:00	Stripper	2624 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.6 ppm	Steady State 5.9 ppm	Clear 80°F
8/15/2022	14:00	Outside GWTP Office	2494 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 97°F
8/15/2022	14:00	Downwind	2494 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 97°F
8/15/2022	14:00	Stripper	2494 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.6 ppm	Steady State 7.3 ppm	Clear 97°F

Appendix J Table 3. PID Readings - 3rd Quarter 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

8/18/2022	8:00	Outside GWTP Office	2654 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
8/18/2022	8:00	Downwind	2654 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
8/18/2022	8:00	Stripper	2654 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 6.2 ppm	Cloudy 73°F
8/22/2022	8:00	Outside GWTP Office	2419 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Rain 75°F
8/22/2022	8:00	Downwind	2419 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Rain 75°F
8/22/2022	8:00	Stripper	2419 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.3 ppm Steady State 5.6 ppm	Rain 75°F
8/22/2022	14:00	Outside GWTP Office	2392 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Rain 76°F
8/22/2022	14:00	Downwind	2392 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Rain 76°F
8/22/2022	14:00	Stripper	2392 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm Steady State 6.0 ppm	Rain 76°F
8/25/2022	9:00	Outside GWTP Office	2549 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
8/25/2022	9:00	Downwind	2549 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 73°F
8/25/2022	9:00	Stripper	2549 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.1 ppm Steady State 6.1 ppm	Cloudy 73°F
8/29/2022	8:00	Outside GWTP Office	2503 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 78°F
8/29/2022	8:00	Downwind	2503 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 78°F
8/29/2022	8:00	Stripper	2503 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.7 ppm Steady State 5.6 ppm	Clear 78°F
8/29/2022	14:00	Outside GWTP Office	2316 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 84°F
8/29/2022	14:00	Downwind	2316 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 84°F
8/29/2022	14:00	Stripper	2316 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.5 ppm Steady State 6.7 ppm	Cloudy 84°F
9/1/2022	7:00	Outside GWTP Office	2510 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 76°F
9/1/2022	7:00	Downwind	2510 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Cloudy 76°F
9/1/2022	7:00	Stripper	2510 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.7 ppm Steady State 5.5 ppm	Cloudy 76°F
9/1/2022	9:00	Outside GWTP Office	2463 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 83°F
9/1/2022	9:00	Downwind	2463 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Cloudy 83°F
9/1/2022	9:00	Stripper	2463 ACFM	MiniRAE 3000	Kennie Moore	Max. 20.9 ppm Steady State 5.0 ppm	Cloudy 83°F
9/6/2022	8:00	Outside GWTP Office	2516 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 73°F
9/6/2022	8:00	Downwind	2516 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 73°F
9/6/2022	8:00	Stripper	2516 ACFM	MiniRAE 3000	Scott Beesinger	Max. 23.2 ppm Steady State 6.3 ppm	Clear 73°F
9/6/2022	14:00	Outside GWTP Office	2403 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 90°F
9/6/2022	14:00	Downwind	2403 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 90°F
9/6/2022	14:00	Stripper	2403 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.4 ppm Steady State 5.3 ppm	Clear 90°F
9/8/2022	7:00	Outside GWTP Office	2455 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 69°F
9/8/2022	7:00	Downwind	2455 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 69°F
9/8/2022	7:00	Stripper	2455 ACFM	MiniRAE 3000	Scott Beesinger	Max. 24.7 ppm Steady State 7.1 ppm	Clear 69°F
9/8/2022	9:00	Outside GWTP Office	2300 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
9/8/2022	9:00	Downwind	2300 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm	Clear 74°F
9/8/2022	9:00	Stripper	2300 ACFM	MiniRAE 3000	Kennie Moore	Max. 22.9 ppm Steady State 6.4 ppm	Clear 74°F
9/12/2022	8:00	Outside GWTP Office	2464 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 68°F
9/12/2022	8:00	Downwind	2464 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm	Clear 68°F

Appendix J Table 3. PID Readings - 3rd Quarter 2022
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

9/12/2022	8:00	Stripper	2464 ACFM	MiniRAE 3000	Scott Beesinger	Max. 21.1 ppm	Steady State 5.3 ppm	Clear 68°F
9/12/2022	14:00	Outside GWTP Office	2362 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 82°F
9/12/2022	14:00	Downwind	2362 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 82°F
9/12/2022	14:00	Stripper	2362 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.3 ppm	Steady State 6.1 ppm	Clear 82°F
9/19/2022	8:00	Outside GWTP Office	2418 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 73°F
9/19/2022	8:00	Downwind	2418 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 73°F
9/19/2022	8:00	Stripper	2418 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.4 ppm	Steady State 5.6 ppm	Clear 73°F
9/19/2022	14:00	Outside GWTP Office	2322 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 92°F
9/19/2022	14:00	Downwind	2322 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 92°F
9/19/2022	14:00	Stripper	2322 ACFM	MiniRAE 3000	Kennie Moore	Max. 24.7 ppm	Steady State 6.9 ppm	Clear 92°F
9/22/2022	7:00	Outside GWTP Office	2467 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 66°F
9/22/2022	7:00	Downwind	2467 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 66°F
9/22/2022	7:00	Stripper	2467 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.8 ppm	Steady State 6.3 ppm	Clear 66°F
9/22/2022	9:30	Outside GWTP Office	2297 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 75°F
9/22/2022	9:30	Downwind	2297 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 75°F
9/22/2022	9:30	Stripper	2297 ACFM	MiniRAE 3000	Kennie Moore	Max. 26.7 ppm	Steady State 6.9 ppm	Clear 75°F
9/26/2022	8:00	Outside GWTP Office	2475 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 65°F
9/26/2022	8:00	Downwind	2475 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 65°F
9/26/2022	8:00	Stripper	2475 ACFM	MiniRAE 3000	Scott Beesinger	Max. 23.9 ppm	Steady State 6.9 ppm	Clear 65°F
9/26/2022	14:00	Outside GWTP Office	2326 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 85°F
9/26/2022	14:00	Downwind	2326 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 85°F
9/26/2022	14:00	Stripper	2326 ACFM	MiniRAE 3000	Kennie Moore	Max. 21.6 ppm	Steady State 5.7 ppm	Clear 85°F
9/29/2022	7:30	Outside GWTP Office	2454 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 61°F
9/29/2022	7:30	Downwind	2454 ACFM	MiniRAE 3000	Scott Beesinger	0.0 ppm		Clear 61°F
9/29/2022	7:30	Stripper	2454 ACFM	MiniRAE 3000	Scott Beesinger	Max. 22.4 ppm	Steady State 6.1 ppm	Clear 61°F
9/29/2022	10:00	Outside GWTP Office	2372 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 65°F
9/29/2022	10:00	Downwind	2372 ACFM	MiniRAE 3000	Kennie Moore	0.0 ppm		Clear 65°F
9/29/2022	10:00	Stripper	2372 ACFM	MiniRAE 3000	Kennie Moore	Max. 23.9 ppm	Steady State 6.8 ppm	Clear 65°F

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/5/22
Project Number: NW01312.0150
Project Name: LHAAP-GWTP
Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000
Equipment ID #:
Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0630	Time:	Time:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: SB	Initials:	Initials:
					Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O_2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/7/22

Project Number: NW01312.0110

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: Mini RAE 3000

Equipment ID #: Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	UBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	52.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/11/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000 Built: 11.8

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0640 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Auto)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.3-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/14/22
Project Number: NWO1312.0110
Project Name: LHAAP-GWTP
Recorded By: SCOTT BEGSINGER

PID

Model: MINI RAE 3000
Equipment ID #:
Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O$_2$ METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
Mid Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Mid Point Calibration	pH	9.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Parameter:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/18/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000 Bulb: 11.8 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBA-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/21/22

Project Number: NW01312.0110

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEESINGER

PID

Model: MiniRAE 3000 Built: 11.8

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration					Time: 0645	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (Auto)					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	8.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/25/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000

Equipment ID #: Bulk: 11.8 mV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0625 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Auto)					Time: Initials:	Time: Initials:	Time: Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132150

EQUIPMENT CALIBRATION DAILY LOG

Date: 7/28/22

Project Number: NWD1312.0110

Project Name: LHAAP-GWTP

Resources By: Scott Beasinger

PID

Model: MiniRAE 3000 Built: 11.8 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O$_2$ METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/1/22
Project Number: NWO1312.0170
Project Name: LHAAP-GWTP
Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000
Equipment ID #: Bulk: 11.8 mV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0640	Time:	Time:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: SB	Initials:	Initials:
					Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (Isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Auto)					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.5-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	62.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/4/22

Project Number: NW01312.0110

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: mini RAE 3000

Equipment ID #: Bulk: 11.8

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration: Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB Value: TO Zero SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration: Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration: O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Quick): pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
Conductivity (mS/cm)	4.49			Value:	Value:	Value:
Turbidity (NTU)	0			Value:	Value:	Value:
DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration: pH	9.00			Value:	Value:	Value:
Conductivity (mS/cm)	53.7			Value:	Value:	Value:
Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration: pH	4.00			Value:	Value:	Value:
Conductivity (mS/cm)	53.7			Value:	Value:	Value:
Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/8/22

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: Mini RAE 3000

Equipment ID #: Bulk: 11.8 mV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O_2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Quick)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132154

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/11/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000

Equipment ID #: Bulk: 11.8 mV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0645 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/15/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: Mini Rae 3000

Equipment ID #: Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Auto)					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/18/22

Project Number: NW01312.0110

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: M.i. RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.0-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132157

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/22/22
Project Number: NW01312.0150
Project Name: LHAAP-GWTP
Recorded By: SCOTT BEASINGER

PID

Model: MiniRAE 3000 Bulb: 11.8 eV may
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0640 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	9.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	52.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/26/22

Project Number: NW01312.0110

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000

Equipment ID #: [illegible]

Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	6.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 8/29/22

Project Number: NW013I2.0170

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: MINIRAE 3000

Equipment ID #:

Bulb: 10.6 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/1/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: M.i.RAE 3000 Bulb: 11.8 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (4 std.)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.0-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132161

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/6/22
Project Number: NWO1312.0110
Project Name: LHAAP-GWTP
Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000 Bulb: 10.6 eV
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0645	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O_2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Auto)					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	6.5-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	89.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/8/22

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beesinger

PID

Model: MiniRAE 3000 Bulb: 11.8 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/12/22
Project Number: NW01312.0150
Project Name: LHAAP-GWTP
Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000
Equipment ID #: Bulk: 11.8

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Multi)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132164

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/14/22
Project Number: NW01312.0170
Project Name: LHAAP-GWTP
Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000
Equipment ID #: Bulk 10.6 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/19/22

Project Number: NW01312.0170

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEESINGER

PID

Model: MINIRAE 3000

Equipment ID #:

Bulb: 10.6 eV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0640 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	UBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	89.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01132166

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/22/22
Project Number: NW01312.0150
Project Name: LHAAP-GWTP
Recorded By: Scott Beesinger

PID

Model: Mini RAE 3000
Equipment ID #:
Bulb: 10.6 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/26/22

Project Number: NWO1312.0110

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: MiniRAE 3000

Equipment ID #: Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: 0620	Time:	Time:
					Initials: SB	Initials:	Initials:
	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Value: TO ZERO SB	Value:	Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Auto)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.3-9.1 (ambient air)	NA	NA	Value:	Value:	
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 9/29/22
Project Number: NW01312.0110
Project Name: LHAAP-GWTP
Recorded By: Scott Beesinger

PID

Model: M.i.RAE 3000
Equipment ID #: Bulk: 11.8 mV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	11/12/22	SBH-250-100-20	Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:
Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (4 value)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.16			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 14, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070252**

Laboratory Results for: **Longhorn GW Treatment Plant /GWTP/Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Jul 07, 2022 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: DANE.WACASEY
Dane J. Wacasey

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
Work Order: HS22070252

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070252-01	LH18/24-SP650_070622	Water		06-Jul-2022 14:00	07-Jul-2022 09:40	☐
HS22070252-02	LH18/24-SP650_070622_AIX	Water		06-Jul-2022 14:00	07-Jul-2022 09:40	☐
HS22070252-03	LH18/24-SP650_070622_BIX	Water		06-Jul-2022 14:00	07-Jul-2022 09:40	☐

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
Work Order: HS22070252

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Subcontracted by Method NA

Batch ID: R412924

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

WetChemistry by Method E415.1

Batch ID: R412871

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

WetChemistry by Method E350.3

Batch ID: R412821

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

WetChemistry by Method E365.3

Batch ID: R412464

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder:HS22070252
Sample ID: LH18/24-SP650_070622
Lab ID:HS22070252-01
Collection Date: 06-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**13**	a	**0.10**	**0**	**0.20**	**mg/L**	1	13-Jul-2022 12:30
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**4.57**	a	**0.100**	**0**	**0.250**	**mg/L**	10	07-Jul-2022 11:27
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: MZD
Organic Carbon, Total	**15.5**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	13-Jul-2022 22:59

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples WorkOrder:HS22070252

Sample ID: LH18/24-SP650_070622_AIX Lab ID:HS22070252-02

Collection Date: 06-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	14-Jul-2022 15:55

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples WorkOrder:HS22070252

Sample ID: LH18/24-SP650_070622_BIX Lab ID:HS22070252-03

Collection Date: 06-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	14-Jul-2022 15:55

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder: HS22070252

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R412464 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22070252-01	LH18/24-SP650_070622	06 Jul 2022 14:00			07 Jul 2022 11:27	10
Batch ID: R412821 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22070252-01	LH18/24-SP650_070622	06 Jul 2022 14:00			13 Jul 2022 12:30	1
Batch ID: R412871 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22070252-01	LH18/24-SP650_070622	06 Jul 2022 14:00			13 Jul 2022 22:59	1
Batch ID: R412924 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22070252-02	LH18/24-SP650_070622_AIX	06 Jul 2022 14:00			14 Jul 2022 15:55	1
HS22070252-03	LH18/24-SP650_070622_BIX	06 Jul 2022 14:00			14 Jul 2022 15:55	1

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder: HS22070252

QC BATCH REPORT

Batch ID: R412464 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R412464** Units: **mg/L** Analysis Date: **07-Jul-2022 11:27**
Client ID: Run ID: **UV-2450_412464** SeqNo: **6735708** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0	0.0250								U

LCS Sample ID: **LCS-R412464** Units: **mg/L** Analysis Date: **07-Jul-2022 11:27**
Client ID: Run ID: **UV-2450_412464** SeqNo: **6735707** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.261	0.0250	0.25	0	104	85 - 115				

MS Sample ID: **HS22070231-01MS** Units: **mg/L** Analysis Date: **07-Jul-2022 11:27**
Client ID: Run ID: **UV-2450_412464** SeqNo: **6735710** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.262	0.0250	0.25	0.001	104	80 - 120				

MSD Sample ID: **HS22070231-01MSD** Units: **mg/L** Analysis Date: **07-Jul-2022 11:27**
Client ID: Run ID: **UV-2450_412464** SeqNo: **6735709** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.262	0.0250	0.25	0.001	104	80 - 120	0.262	0	20	

The following samples were analyzed in this batch: HS22070252-01

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder: HS22070252

QC BATCH REPORT

Batch ID: R412821 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R412821** Units: **mg/L** Analysis Date: **13-Jul-2022 12:30**
Client ID: Run ID: **WetChem_HS_412821** SeqNo: **6743738** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0	0.20								U

LCS Sample ID: **LCS-R412821** Units: **mg/L** Analysis Date: **13-Jul-2022 12:30**
Client ID: Run ID: **WetChem_HS_412821** SeqNo: **6743737** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.83	0.20	10	0	98.3	80 - 120				

MS Sample ID: **HS22070128-01MS** Units: **mg/L** Analysis Date: **13-Jul-2022 12:30**
Client ID: Run ID: **WetChem_HS_412821** SeqNo: **6743743** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	16.91	0.20	10	6.408	105	80 - 120				

MSD Sample ID: **HS22070128-01MSD** Units: **mg/L** Analysis Date: **13-Jul-2022 12:30**
Client ID: Run ID: **WetChem_HS_412821** SeqNo: **6743742** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	16.91	0.20	10	6.408	105	80 - 120	16.91	0.00591	20	

The following samples were analyzed in this batch: HS22070252-01

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder: HS22070252

QC BATCH REPORT

Batch ID: R412871 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK2-07132022** Units: **mg/L** Analysis Date: **13-Jul-2022 22:18**
Client ID: Run ID: **TOC_04_412871** SeqNo: **6745143** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS2-07132022** Units: **mg/L** Analysis Date: **13-Jul-2022 22:31**
Client ID: Run ID: **TOC_04_412871** SeqNo: **6745144** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.894	1.00	10	0	98.9	85 - 115				

LCSD Sample ID: **LCSD2-07132022** Units: **mg/L** Analysis Date: **13-Jul-2022 22:45**
Client ID: Run ID: **TOC_04_412871** SeqNo: **6745145** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.863	1.00	10	0	98.6	85 - 115	9.894	0.314	20	

MS Sample ID: **HS22070155-01MS** Units: **mg/L** Analysis Date: **13-Jul-2022 23:41**
Client ID: Run ID: **TOC_04_412871** SeqNo: **6745149** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	25.27	1.00	10	15.99	92.8	80 - 120				

The following samples were analyzed in this batch: HS22070252-01

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant /GWTP/Weekly Samples
WorkOrder: **HS22070252**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 14-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070252 **Date/Time Received:** **07-Jul-2022 09:40**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By:	/S/ Paresh M. Giga (eSignature)	07-Jul-2022 10:25 (Date/Time)	**Reviewed by:**	/S/ Dane J. Wacasey (eSignature)	14-Jul-2022 19:41 (Date/Time)

Matrices: **GW** Carrier name: **FedEx Priority Overnight**

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):	2.0C/2.5C U/C	IR31			
Cooler(s)/Kit(s):	Blue				
Date/Time sample(s) sent to storage:	7/7/22 10:35				
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:

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / GWTP / Weekly

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	TOC	Ammonia - N	Orthophosphate	Perchlorate	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
LH18/24-SP650_070622	06 Jul 2022	1400	-	N		WG	4	X	X	X					
LH18/24-SP650_070622_AIX	06 Jul 2022	1400	-	N		WG	1				X				
LH18/24-SP650_070622_BIX	06 Jul 2022	1400	-	N		WG	1				X				

HS22070252

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant /GWTP/Weekly Sample

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	7/6/22	1430	1.	7/7/2022	09 40
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped _____ No.:

Method of Shipment: _____

Fed Ex _____ Airbill Number: _____

Analytical Lab: ALS 10450 Stanhill Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

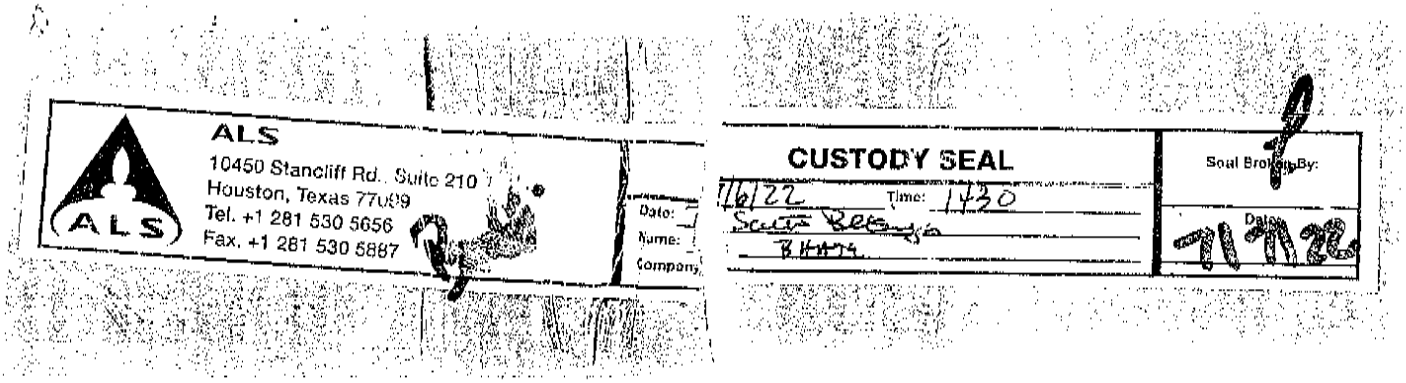
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control



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

Date:
Name:
Company:

CUSTODY SEAL

7/6/22 Time: 1430
Scott Bell
BHMS

Seal Broken By:

Date: 7/7/22

TRK# 0473 0838 9586

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

3941815 06Jul2022 GGGA 560G1/AMAF/C008

July 14, 2022 Service Request No:E2200664

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22070252

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 11, 2022
For your reference, these analyses have been assigned our service request number **E2200664.**

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	**Service Request No.:**	E2200664
Project:	HS22070252	**Date Received:**	07/11/22
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

Two samples were received for analysis at ALS Environmental in Houston on 07/11/22.

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:

EQ2200287: 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 met acceptance criteria. The MS/MSD was performed on an unrelated sample.

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:**E2200664
Project: HS22070252

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200664-001	LH18/24-SP650_070622_AIX	7/6/2022	1400
E2200664-002	LH18/24-SP650_070622_BIX	7/6/2022	1400

Service Request Summary

Folder #: **E2200664**
Client Name: ALS Environmental - US
Project Name: HS22070252
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/11/22
Internal Due Date: 7/14/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070252
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200664-001	LH18/24-SP650_070622_AIX	Water	07/06/22 1400	**IV**
E2200664-002	LH18/24-SP650_070622_BIX	Water	07/06/22 1400	**IV**

Service Request Summary

Folder #: **E2200664**
Client Name: ALS Environmental - US
Project Name: HS22070252
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/11/22
Internal Due Date: 7/14/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070252
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	IV Due 7/28

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932021-12	7/31/2022
Washington Department of Health	C819-2022	11/14/2022

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:** 19131

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22070252
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22070252-02**	**LH18/24-SP650_070622_AIX**	**Water**	**06 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			14 Jul 2022
2.	**HS22070252-03**	**LH18/24-SP650_070622_BIX**	**Water**	**06 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			14 Jul 2022

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: 7-11-22 0800

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID IR31

Date/Time Received: 7-11-22 Initials: CG

Date/Time Logged in: 7-11-22 Initials CG

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

If yes, how many and where?

Were they intact? ○ Yes ○ No ⊗ N/A

Were they signed and dated? ○ Yes ○ No ⊗ N/A

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		7-11-22	0800	CG	2.2°C	☒
						☐
						☐
						☐

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#: 402637 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/12/22 09:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200664-001	LH18/24-SP650_070622_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200664-002	LH18/24-SP650_070622_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200665-001	16WW44-220705	.01	6850/ClO4 DOD			Water	10mL	
4	E2200665-002	16WW44-220705-FD	.01	6850/ClO4 DOD			Water	10mL	
5	E2200665-003	16RW10-220705	.01	6850/ClO4 DOD			Water	10mL	
6	E2200665-004	16RW09-220705	.01	6850/ClO4 DOD			Water	10mL	
7	E2200665-005	16RW09-220705-FD	.01	6850/ClO4 DOD			Water	10mL	
8	E2200665-006	16EW01-220705	.01	6850/ClO4 DOD			Water	10mL	
9	E2200665-007	16WW40-220705	.01	6850/ClO4 DOD			Water	10mL	
10	E2200665-008	16WW12-220705	.01	6850/ClO4 DOD			Water	10mL	
11	E2200665-009	16WW13-220705	.01	6850/ClO4 DOD			Water	10mL	
12	E2200665-010	16WW42-220705	.01	6850/ClO4 DOD			Water	10mL	
13	E2200665-011	16RW04-220705	.01	6850/ClO4 DOD			Water	10mL	
14	EQ2200287-01	MB		6850/ClO4 DOD			Liquid	10mL	
15	EQ2200287-02	LCS		6850/ClO4 DOD			Liquid	10mL	
16	EQ2200287-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
17	EQ2200287-04	16WW40-220705 MS	.01	6850/ClO4 DOD			Liquid	10mL	
18	EQ2200287-05	16WW40-220705 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200287-02	1.00µL	EQ2200287-03	1.00µL	EQ2200287-04	1.00µL	EQ2200287-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200664-001	100.00µL	E2200664-002	100.00µL	E2200665-001	100.00µL	E2200665-002	100.00µL	E2200665-003	100.00µL	E2200665-004	100.00µL
E2200665-005	100.00µL	E2200665-006	100.00µL	E2200665-007	100.00µL	E2200665-008	100.00µL	E2200665-009	100.00µL	E2200665-010	100.00µL
E2200665-011	100.00µL	EQ2200287-01	100.00µL	EQ2200287-02	100.00µL	EQ2200287-03	100.00µL	EQ2200287-04	100.00µL	EQ2200287-05	100.00µL

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223055)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (222410)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Information Benchsheet

Prep Run#: 402637 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/12/22 09:30

Preparation Steps

Step: Preparation
Started: 7/12/22 09:30
Finished: 7/12/22 10:15
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 7/12/22

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:**	E2200664
Project:	HS22070252	**Date Collected:**	7/ 6/22 1400
Sample Matrix:	Water	**Date Received:**	7/11/22
Sample Name:	LH18/24-SP650_070622_AIX	**Units:**	µg/L
Lab Code:	E2200664-001	**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	7/12/22	7/12/22 17:15	402637	770203	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200664
Project:	HS22070252	**Date Collected:**	7/ 6/22 1400
Sample Matrix:	Water	**Date Received:**	7/11/22
Sample Name:	LH18/24-SP650_070622_BIX	**Units:**	µg/L
Lab Code:	E2200664-002	**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	**9.16**		0.100	0.0500	0.0250	1	7/12/22	7/12/22 17:23	402637	770203	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200664
Project:	HS22070252	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200287-01	**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	7/12/22	7/12/22 16:18	402637	770203	

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: HS22070252
Sample Matrix: Water

Service Request: E2200664
Date Analyzed: 7/12/22

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: 402637

	Lab Control Sample EQ2200287-02			Duplicate Lab Control Sample EQ2200287-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0991	0.100	99	0.103	0.100	103	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:**	E2200664
Project:	HS22070252	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200287-02	**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	**0.0991**	J	0.100	0.0500	0.0250	1	7/12/22	7/12/22 16:26	402637	770203	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200664
Project:	HS22070252	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200287-03	**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	**0.103**		0.100	0.0500	0.0250	1	7/12/22	7/12/22 17:07	402637	770203	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 14, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070255**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Jul 07, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22070255

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070255-01	LH18/24-SP650_070622	Water		06-Jul-2022 14:00	07-Jul-2022 09:40	☐
HS22070255-02	Trip Blank	Water		06-Jul-2022 00:00	07-Jul-2022 09:40	☐

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22070255

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

GCMS Volatiles by Method SW8260

Batch ID: R412413

Sample ID: HS22070020-01MSD

• MSD is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R412567

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070255
Sample ID: LH18/24-SP650_070622 Lab ID:HS22070255-01
Collection Date: 06-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	07-Jul-2022 13:20
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	07-Jul-2022 13:20
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	07-Jul-2022 13:20
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	07-Jul-2022 13:20
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	07-Jul-2022 13:20
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070255
Sample ID: LH18/24-SP650_070622 Lab ID:HS22070255-01
Collection Date: 06-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
cis-1,2-Dichloroethene	**2.9**		**0.20**	**0.50**	**1.0**	**ug/L**	1	07-Jul-2022 13:20
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	07-Jul-2022 13:20
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	07-Jul-2022 13:20
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 13:20
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 13:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 13:20
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*1*	*07-Jul-2022 13:20*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*1*	*07-Jul-2022 13:20*
Surr: Dibromofluoromethane	*96.3*			**0**	*80-119*	*%REC*	*1*	*07-Jul-2022 13:20*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*07-Jul-2022 13:20*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**944**		**4.00**	**10.0**	**10.0**	**mg/L**	20	10-Jul-2022 20:39
Sulfate	**16.5**		**0.400**	**1.00**	**1.00**	**mg/L**	2	10-Jul-2022 20:33

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070255
Sample ID: Trip Blank Lab ID:HS22070255-02
Collection Date: 06-Jul-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	07-Jul-2022 12:44
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	07-Jul-2022 12:44
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	07-Jul-2022 12:44
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	07-Jul-2022 12:44
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	07-Jul-2022 12:44
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070255
Sample ID: Trip Blank Lab ID:HS22070255-02
Collection Date: 06-Jul-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	07-Jul-2022 12:44
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	07-Jul-2022 12:44
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	07-Jul-2022 12:44
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	07-Jul-2022 12:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	07-Jul-2022 12:44
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*1*	*07-Jul-2022 12:44*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jul-2022 12:44*
Surr: Dibromofluoromethane	*98.5*			**0**	*80-119*	*%REC*	*1*	*07-Jul-2022 12:44*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*07-Jul-2022 12:44*

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

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R412413 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22070255-01	LH18/24-SP650_070622	06 Jul 2022 14:00			07 Jul 2022 13:20	1
HS22070255-02	Trip Blank	06 Jul 2022 00:00			07 Jul 2022 12:44	1
Batch ID: R412567 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22070255-01	LH18/24-SP650_070622	06 Jul 2022 14:00			10 Jul 2022 20:39	20
HS22070255-01	LH18/24-SP650_070622	06 Jul 2022 14:00			10 Jul 2022 20:33	2

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220707** Units: **ug/L** Analysis Date: **07-Jul-2022 12:23**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734426** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220707** Units: **ug/L** Analysis Date: **07-Jul-2022 12:23**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734426** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*51.98*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.74*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*49.85*	*1.0*	*50*	*0*	*99.7*	*80 - 119*				
Surr: Toluene-d8	*54.86*	*1.0*	*50*	*0*	*110*	*89 - 112*				

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220707** Units: **ug/L** Analysis Date: **07-Jul-2022 11:41**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734425** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.76	1.0	20	0	98.8	78 - 124				
1,1,1-Trichloroethane	18.25	1.0	20	0	91.3	74 - 131				
1,1,2,2-Tetrachloroethane	19.13	1.0	20	0	95.6	71 - 121				
1,1,2-Trichloroethane	19.21	1.0	20	0	96.0	80 - 119				
1,1-Dichloroethane	18.67	1.0	20	0	93.3	77 - 125				
1,1-Dichloroethene	20.6	1.0	20	0	103	71 - 131				
1,1-Dichloropropene	19.23	1.0	20	0	96.1	78 - 125				
1,2,3-Trichlorobenzene	20.63	1.0	20	0	103	69 - 129				
1,2,3-Trichloropropane	17.74	1.0	20	0	88.7	73 - 122				
1,2,4-Trichlorobenzene	20.52	1.0	20	0	103	69 - 130				
1,2,4-Trimethylbenzene	20.84	1.0	20	0	104	76 - 124				
1,2-Dibromo-3-chloropropane	18.73	1.0	20	0	93.7	62 - 128				
1,2-Dibromoethane	19.84	1.0	20	0	99.2	77 - 121				
1,2-Dichlorobenzene	20.55	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	19.5	1.0	20	0	97.5	73 - 128				
1,2-Dichloropropane	19.87	1.0	20	0	99.3	78 - 122				
1,3,5-Trimethylbenzene	20.63	1.0	20	0	103	75 - 124				
1,3-Dichlorobenzene	20.69	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	19.23	1.0	20	0	96.1	80 - 119				
1,4-Dichlorobenzene	20.32	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	19.24	1.0	20	0	96.2	60 - 139				
2-Butanone	36.99	2.0	40	0	92.5	56 - 143				
2-Chlorotoluene	20.27	1.0	20	0	101	79 - 122				
2-Hexanone	40.73	2.0	40	0	102	57 - 139				
4-Chlorotoluene	20.67	1.0	20	0	103	78 - 122				
4-Isopropyltoluene	21.48	1.0	20	0	107	77 - 127				
4-Methyl-2-pentanone	39.52	2.0	40	0	98.8	67 - 130				
Acetone	48.52	2.0	40	0	121	39 - 160				
Benzene	20.5	1.0	20	0	102	79 - 120				
Bromobenzene	20.53	1.0	20	0	103	80 - 120				
Bromochloromethane	19.2	1.0	20	0	96.0	78 - 123				
Bromodichloromethane	19.28	1.0	20	0	96.4	79 - 125				
Bromoform	19.74	1.0	20	0	98.7	66 - 130				
Bromomethane	24.22	1.0	20	0	121	53 - 141				

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220707** Units: **ug/L** Analysis Date: **07-Jul-2022 11:41**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734425** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.65	2.0	40	0	102	64 - 133				
Carbon tetrachloride	18.12	1.0	20	0	90.6	72 - 136				
Chlorobenzene	20.2	1.0	20	0	101	82 - 118				
Chloroethane	21.16	1.0	20	0	106	60 - 138				
Chloroform	18.82	1.0	20	0	94.1	79 - 124				
Chloromethane	19.87	1.0	20	0	99.4	50 - 139				
cis-1,2-Dichloroethene	19.16	1.0	20	0	95.8	78 - 123				
cis-1,3-Dichloropropene	19.95	1.0	20	0	99.8	75 - 124				
Dibromochloromethane	19.22	1.0	20	0	96.1	74 - 126				
Dibromomethane	18.67	1.0	20	0	93.3	79 - 123				
Dichlorodifluoromethane	17.97	1.0	20	0	89.9	32 - 152				
Ethylbenzene	20.25	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	21.61	1.0	20	0	108	66 - 134				
Isopropylbenzene	20.65	1.0	20	0	103	72 - 131				
m,p-Xylene	41.63	2.0	40	0	104	80 - 121				
Methylene chloride	20.5	2.0	20	0	102	74 - 124				
Naphthalene	20.3	1.0	20	0	101	61 - 128				
n-Butylbenzene	21.36	1.0	20	0	107	75 - 128				
n-Propylbenzene	20.91	1.0	20	0	105	76 - 126				
o-Xylene	20.6	1.0	20	0	103	78 - 122				
sec-Butylbenzene	20.6	1.0	20	0	103	77 - 126				
Styrene	20.85	1.0	20	0	104	78 - 123				
tert-Butylbenzene	20.69	1.0	20	0	103	78 - 124				
Tetrachloroethene	20.15	1.0	20	0	101	74 - 129				
Toluene	20.07	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	19.47	1.0	20	0	97.4	75 - 124				
trans-1,3-Dichloropropene	19.34	1.0	20	0	96.7	73 - 127				
Trichloroethene	20.29	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	21.31	1.0	20	0	107	65 - 141				
Vinyl chloride	20.79	1.0	20	0	104	58 - 137				
Surr: 1,2-Dichloroethane-d4	*48.36*	*1.0*	*50*	*0*	*96.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.37*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*49.57*	*1.0*	*50*	*0*	*99.1*	*80 - 119*				
Surr: Toluene-d8	*50.77*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070020-01MS** Units: **ug/L** Analysis Date: **07-Jul-2022 15:06**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734433** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	5178	250	5000	0	104	78 - 124				
1,1,1-Trichloroethane	4879	250	5000	0	97.6	74 - 131				
1,1,2,2-Tetrachloroethane	5155	250	5000	0	103	71 - 121				
1,1,2-Trichloroethane	4992	250	5000	0	99.8	80 - 119				
1,1-Dichloroethane	4448	250	5000	0	89.0	77 - 125				
1,1-Dichloroethene	4635	250	5000	0	92.7	71 - 131				
1,1-Dichloropropene	5069	250	5000	0	101	78 - 125				
1,2,3-Trichlorobenzene	4657	250	5000	0	93.1	69 - 129				
1,2,3-Trichloropropane	4839	250	5000	0	96.8	73 - 122				
1,2,4-Trichlorobenzene	5095	250	5000	0	102	69 - 130				
1,2,4-Trimethylbenzene	5586	250	5000	0	112	76 - 124				
1,2-Dibromo-3-chloropropane	4758	250	5000	0	95.2	62 - 128				
1,2-Dibromoethane	5094	250	5000	0	102	77 - 121				
1,2-Dichlorobenzene	5490	250	5000	0	110	80 - 119				
1,2-Dichloroethane	5050	250	5000	0	101	73 - 128				
1,2-Dichloropropane	4735	250	5000	0	94.7	78 - 122				
1,3,5-Trimethylbenzene	5609	250	5000	0	112	75 - 124				
1,3-Dichlorobenzene	5436	250	5000	0	109	80 - 119				
1,3-Dichloropropane	4996	250	5000	0	99.9	80 - 119				
1,4-Dichlorobenzene	5283	250	5000	0	106	79 - 118				
2,2-Dichloropropane	4944	250	5000	0	98.9	60 - 139				
2-Butanone	7560	500	10000	0	75.6	56 - 143				
2-Chlorotoluene	5484	250	5000	0	110	79 - 122				
2-Hexanone	9752	500	10000	0	97.5	57 - 139				
4-Chlorotoluene	5620	250	5000	0	112	78 - 122				
4-Isopropyltoluene	5982	250	5000	0	120	77 - 127				
4-Methyl-2-pentanone	10180	500	10000	0	102	67 - 130				
Acetone	6936	500	10000	0	69.4	39 - 160				
Benzene	4905	250	5000	0	98.1	79 - 120				
Bromobenzene	5575	250	5000	0	112	80 - 120				
Bromochloromethane	4462	250	5000	0	89.2	78 - 123				
Bromodichloromethane	4796	250	5000	0	95.9	79 - 125				
Bromoform	5101	250	5000	0	102	66 - 130				
Bromomethane	4573	250	5000	0	91.5	53 - 141				

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070020-01MS** Units: **ug/L** Analysis Date: **07-Jul-2022 15:06**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734433** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	9031	500	10000	0	90.3	64 - 133				
Carbon tetrachloride	5189	250	5000	0	104	72 - 136				
Chlorobenzene	5210	250	5000	0	104	82 - 118				
Chloroethane	4222	250	5000	0	84.4	60 - 138				
Chloroform	4567	250	5000	0	91.3	79 - 124				
Chloromethane	3800	250	5000	0	76.0	50 - 139				
cis-1,2-Dichloroethene	23700	250	5000	19300	88.0	78 - 123				
cis-1,3-Dichloropropene	4834	250	5000	0	96.7	75 - 124				
Dibromochloromethane	5086	250	5000	0	102	74 - 126				
Dibromomethane	4610	250	5000	0	92.2	79 - 123				
Dichlorodifluoromethane	4318	250	5000	0	86.4	32 - 152				
Ethylbenzene	5303	250	5000	0	106	79 - 121				
Hexachlorobutadiene	5873	250	5000	0	117	66 - 134				
Isopropylbenzene	5458	250	5000	0	109	72 - 131				
m,p-Xylene	10640	500	10000	0	106	80 - 121				
Methylene chloride	4469	500	5000	308.6	83.2	74 - 124				
Naphthalene	4314	250	5000	0	86.3	61 - 128				
n-Butylbenzene	5968	250	5000	0	119	75 - 128				
n-Propylbenzene	5819	250	5000	0	116	76 - 126				
o-Xylene	5251	250	5000	0	105	78 - 122				
sec-Butylbenzene	5837	250	5000	0	117	77 - 126				
Styrene	5195	250	5000	0	104	78 - 123				
tert-Butylbenzene	5851	250	5000	0	117	78 - 124				
Tetrachloroethene	5525	250	5000	0	110	74 - 129				
Toluene	5231	250	5000	0	105	80 - 121				
trans-1,2-Dichloroethene	4704	250	5000	0	94.1	75 - 124				
trans-1,3-Dichloropropene	4758	250	5000	0	95.2	73 - 127				
Trichloroethene	44070	250	5000	40120	79.1	79 - 123				O
Trichlorofluoromethane	5070	250	5000	0	101	65 - 141				
Vinyl chloride	4437	250	5000	426.5	80.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*12730*	*250*	*12500*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*12930*	*250*	*12500*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*12030*	*250*	*12500*	*0*	*96.3*	*80 - 119*				
Surr: Toluene-d8	*13560*	*250*	*12500*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070020-01MSD** Units: **ug/L** Analysis Date: **07-Jul-2022 15:27**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734434** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	4945	250	5000	0	98.9	78 - 124	5178	4.6	20	
1,1,1-Trichloroethane	4637	250	5000	0	92.7	74 - 131	4879	5.09	20	
1,1,2,2-Tetrachloroethane	5264	250	5000	0	105	71 - 121	5155	2.1	20	
1,1,2-Trichloroethane	4964	250	5000	0	99.3	80 - 119	4992	0.558	20	
1,1-Dichloroethane	4361	250	5000	0	87.2	77 - 125	4448	1.97	20	
1,1-Dichloroethene	4386	250	5000	0	87.7	71 - 131	4635	5.51	20	
1,1-Dichloropropene	4948	250	5000	0	99.0	78 - 125	5069	2.43	20	
1,2,3-Trichlorobenzene	5183	250	5000	0	104	69 - 129	4657	10.7	20	
1,2,3-Trichloropropane	5165	250	5000	0	103	73 - 122	4839	6.51	20	
1,2,4-Trichlorobenzene	5113	250	5000	0	102	69 - 130	5095	0.342	20	
1,2,4-Trimethylbenzene	5528	250	5000	0	111	76 - 124	5586	1.04	20	
1,2-Dibromo-3-chloropropane	5044	250	5000	0	101	62 - 128	4758	5.84	20	
1,2-Dibromoethane	5080	250	5000	0	102	77 - 121	5094	0.276	20	
1,2-Dichlorobenzene	5268	250	5000	0	105	80 - 119	5490	4.12	20	
1,2-Dichloroethane	5094	250	5000	0	102	73 - 128	5050	0.859	20	
1,2-Dichloropropane	4690	250	5000	0	93.8	78 - 122	4735	0.969	20	
1,3,5-Trimethylbenzene	5511	250	5000	0	110	75 - 124	5609	1.76	20	
1,3-Dichlorobenzene	5210	250	5000	0	104	80 - 119	5436	4.24	20	
1,3-Dichloropropane	4964	250	5000	0	99.3	80 - 119	4996	0.651	20	
1,4-Dichlorobenzene	5218	250	5000	0	104	79 - 118	5283	1.24	20	
2,2-Dichloropropane	4668	250	5000	0	93.4	60 - 139	4944	5.73	20	
2-Butanone	8104	500	10000	0	81.0	56 - 143	7560	6.94	20	
2-Chlorotoluene	5380	250	5000	0	108	79 - 122	5484	1.91	20	
2-Hexanone	10260	500	10000	0	103	57 - 139	9752	5.03	20	
4-Chlorotoluene	5474	250	5000	0	109	78 - 122	5620	2.63	20	
4-Isopropyltoluene	5687	250	5000	0	114	77 - 127	5982	5.05	20	
4-Methyl-2-pentanone	10450	500	10000	0	104	67 - 130	10180	2.62	20	
Acetone	7196	500	10000	0	72.0	39 - 160	6936	3.69	20	
Benzene	4873	250	5000	0	97.5	79 - 120	4905	0.66	20	
Bromobenzene	5358	250	5000	0	107	80 - 120	5575	3.98	20	
Bromochloromethane	4382	250	5000	0	87.6	78 - 123	4462	1.82	20	
Bromodichloromethane	4766	250	5000	0	95.3	79 - 125	4796	0.614	20	
Bromoform	4995	250	5000	0	99.9	66 - 130	5101	2.09	20	
Bromomethane	4152	250	5000	0	83.0	53 - 141	4573	9.65	20	

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412413 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070020-01MSD** Units: **ug/L** Analysis Date: **07-Jul-2022 15:27**
Client ID: Run ID: **VOA6_412413** SeqNo: **6734434** PrepDate: DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	8869	500	10000	0	88.7	64 - 133	9031	1.8	20	
Carbon tetrachloride	4835	250	5000	0	96.7	72 - 136	5189	7.07	20	
Chlorobenzene	5063	250	5000	0	101	82 - 118	5210	2.87	20	
Chloroethane	4321	250	5000	0	86.4	60 - 138	4222	2.32	20	
Chloroform	4439	250	5000	0	88.8	79 - 124	4567	2.84	20	
Chloromethane	4067	250	5000	0	81.3	50 - 139	3800	6.78	20	
cis-1,2-Dichloroethene	22970	250	5000	19300	73.3	78 - 123	23700	3.14	20	S
cis-1,3-Dichloropropene	4665	250	5000	0	93.3	75 - 124	4834	3.57	20	
Dibromochloromethane	4919	250	5000	0	98.4	74 - 126	5086	3.33	20	
Dibromomethane	4581	250	5000	0	91.6	79 - 123	4610	0.618	20	
Dichlorodifluoromethane	4137	250	5000	0	82.7	32 - 152	4318	4.29	20	
Ethylbenzene	5151	250	5000	0	103	79 - 121	5303	2.91	20	
Hexachlorobutadiene	5386	250	5000	0	108	66 - 134	5873	8.64	20	
Isopropylbenzene	5230	250	5000	0	105	72 - 131	5458	4.26	20	
m,p-Xylene	10410	500	10000	0	104	80 - 121	10640	2.18	20	
Methylene chloride	4339	500	5000	308.6	80.6	74 - 124	4469	2.95	20	
Naphthalene	4913	250	5000	0	98.3	61 - 128	4314	13	20	
n-Butylbenzene	5720	250	5000	0	114	75 - 128	5968	4.25	20	
n-Propylbenzene	5656	250	5000	0	113	76 - 126	5819	2.84	20	
o-Xylene	5157	250	5000	0	103	78 - 122	5251	1.81	20	
sec-Butylbenzene	5589	250	5000	0	112	77 - 126	5837	4.33	20	
Styrene	5031	250	5000	0	101	78 - 123	5195	3.19	20	
tert-Butylbenzene	5602	250	5000	0	112	78 - 124	5851	4.34	20	
Tetrachloroethene	5270	250	5000	0	105	74 - 129	5525	4.72	20	
Toluene	5085	250	5000	0	102	80 - 121	5231	2.82	20	
trans-1,2-Dichloroethene	4522	250	5000	0	90.4	75 - 124	4704	3.93	20	
trans-1,3-Dichloropropene	4691	250	5000	0	93.8	73 - 127	4758	1.42	20	
Trichloroethene	41640	250	5000	40120	30.5	79 - 123	44070	5.67	20	SO
Trichlorofluoromethane	4513	250	5000	0	90.3	65 - 141	5070	11.6	20	
Vinyl chloride	4593	250	5000	426.5	83.3	58 - 137	4437	3.46	20	
Surr: 1,2-Dichloroethane-d4	*12700*	*250*	*12500*	*0*	*102*	*81 - 118*	*12730*	*0.248*	*20*	
Surr: 4-Bromofluorobenzene	*13070*	*250*	*12500*	*0*	*105*	*85 - 114*	*12930*	*1.11*	*20*	
Surr: Dibromofluoromethane	*12090*	*250*	*12500*	*0*	*96.7*	*80 - 119*	*12030*	*0.438*	*20*	
Surr: Toluene-d8	*13730*	*250*	*12500*	*0*	*110*	*89 - 112*	*13560*	*1.27*	*20*	

ALS Houston, US Date: 14-Jul-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22070255

QC BATCH REPORT

Batch ID:	**R412413 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22070255-01	HS22070255-02

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070255

QC BATCH REPORT

Batch ID: R412567 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **10-Jul-2022 19:19**
Client ID: Run ID: **ICS-Integrion_412567** SeqNo: **6738273** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **10-Jul-2022 19:24**
Client ID: Run ID: **ICS-Integrion_412567** SeqNo: **6738274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.6	0.500	20	0	98.0	80 - 120				
Sulfate	19.42	0.500	20	0	97.1	80 - 120				

MS Sample ID: **HS22061652-01MS** Units: **mg/L** Analysis Date: **10-Jul-2022 21:47**
Client ID: Run ID: **ICS-Integrion_412567** SeqNo: **6738296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	76.97	0.500	10	67.77	92.0	80 - 120				O
Sulfate	35.69	0.500	10	25.9	97.9	80 - 120				

MSD Sample ID: **HS22061652-01MSD** Units: **mg/L** Analysis Date: **10-Jul-2022 21:53**
Client ID: Run ID: **ICS-Integrion_412567** SeqNo: **6738297** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	76.97	0.500	10	67.77	92.0	80 - 120	76.97	0.0013	20	O
Sulfate	35.69	0.500	10	25.9	97.9	80 - 120	35.69	0.00981	20	

The following samples were analyzed in this batch: HS22070255-01

ALS Houston, US Date: 14-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22070255**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 14-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070255 **Date/Time Received:** **07-Jul-2022 09:40**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: */S/ Paresh M. Giga* (eSignature) 07-Jul-2022 10:50 (Date/Time) **Reviewed by:** */S/ Dane J. Wacasey* (eSignature) 12-Jul-2022 10:50 (Date/Time)

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

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):	2.0C/2.5C U/C	IR31	
Cooler(s)/Kit(s):	Blue		
Date/Time sample(s) sent to storage:	7/7/22 10:55		
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:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Bhate

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / GWTP / Bi-weekly

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code [2]	Sample Number [3]	Sample Matrix [4]	Number of containers	VOC	Chloride, Sulfate	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
LH18/24-SP650_070622	06 Jul 2022	1400	-	N		WG	4	X	X				
TRIP BLANK	06 Jul 2022		-	TB		W	2	X					
			-										
			-										
			-										
			-										
			-										
BLUE			-										
			-										
			-										
			-										
			-										

Sample Analysis Requested [5] | Quality Assurance Samples [6]

HS22070255

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi-Weekly Samples

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	7/6/22	1430	1.	7/7/22	0715
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed ____ Ex ____ Airbill ____ Number:

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

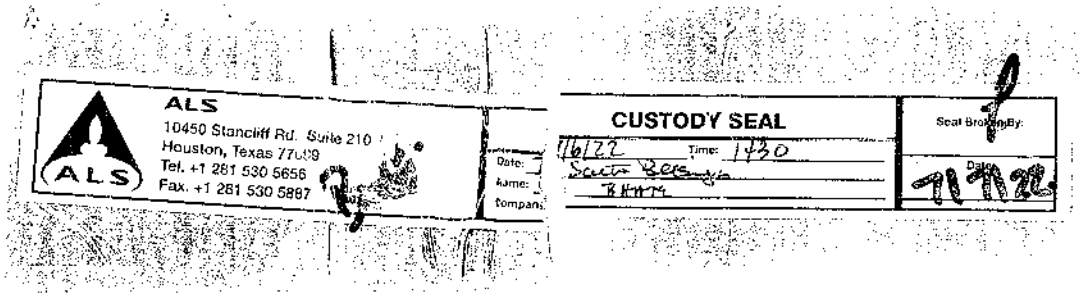
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

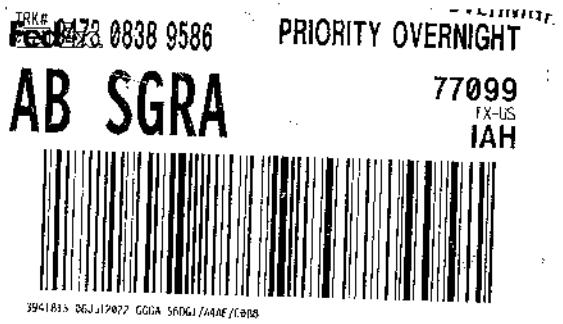
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SC = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control


ALS
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Time: 1430
Seal Broken By:
Date:


0838 9586
PRIORITY OVERNIGHT
AB SGRA
77099
FX-US
IAH

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 20, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070566**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Jul 13, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22070566

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070566-01	LH18/24-SP650_071222	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐
HS22070566-02	LH18/24-SP650_071222_AIX	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐
HS22070566-03	LH18/24-SP650_071222_BIX	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22070566

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R413374

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

WetChemistry by Method E415.1

Batch ID: R413357

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

WetChemistry by Method E365.3

Batch ID: R412809

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

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22070566
Sample ID: LH18/24-SP650_071222
Lab ID:HS22070566-01
Collection Date: 12-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**18**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	19-Jul-2022 12:45
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**3.96**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	13-Jul-2022 12:13
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**30.9**	a	**1.00**	**2.00**	**2.00**	**mg/L**	2	20-Jul-2022 13:22

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

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22070566
Sample ID: LH18/24-SP650_071222_AIX
Lab ID:HS22070566-02
Collection Date: 12-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jul-2022 19:43

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

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22070566
Sample ID: LH18/24-SP650_071222_BIX
Lab ID:HS22070566-03
Collection Date: 12-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jul-2022 19:43

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

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070566

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R412809 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22070566-01	LH18/24-SP650_071222	12 Jul 2022 14:00			13 Jul 2022 12:13	10
Batch ID: R413282 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22070566-02	LH18/24-SP650_071222_AIX	12 Jul 2022 14:00			19 Jul 2022 19:43	1
HS22070566-03	LH18/24-SP650_071222_BIX	12 Jul 2022 14:00			19 Jul 2022 19:43	1
Batch ID: R413357 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22070566-01	LH18/24-SP650_071222	12 Jul 2022 14:00			20 Jul 2022 13:22	2
Batch ID: R413374 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22070566-01	LH18/24-SP650_071222	12 Jul 2022 14:00			19 Jul 2022 12:45	1

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070566

QC BATCH REPORT

Batch ID: R412809 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R412809** Units: **mg/L** Analysis Date: **13-Jul-2022 12:13**
Client ID: Run ID: **UV-2450_412809** SeqNo: **6744366** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R412809** Units: **mg/L** Analysis Date: **13-Jul-2022 12:13**
Client ID: Run ID: **UV-2450_412809** SeqNo: **6744365** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	0	94.0	85 - 115				

LCSD Sample ID: **LCSD-R412809** Units: **mg/L** Analysis Date: **13-Jul-2022 12:13**
Client ID: Run ID: **UV-2450_412809** SeqNo: **6744364** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	0	94.0	85 - 115	0.235	0	20	

MS Sample ID: **HS22070507-01MS** Units: **mg/L** Analysis Date: **13-Jul-2022 12:13**
Client ID: Run ID: **UV-2450_412809** SeqNo: **6744368** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	-0.013	99.2	80 - 120				

MSD Sample ID: **HS22070507-01MSD** Units: **mg/L** Analysis Date: **13-Jul-2022 12:13**
Client ID: Run ID: **UV-2450_412809** SeqNo: **6744367** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	-0.013	99.2	80 - 120	0.235	0	20	

The following samples were analyzed in this batch: HS22070566-01

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070566

QC BATCH REPORT

Batch ID: R413357 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-07192022** Units: **mg/L** Analysis Date: **20-Jul-2022 11:29**
Client ID: Run ID: **TOC_04_413357** SeqNo: **6756284** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-07192022** Units: **mg/L** Analysis Date: **20-Jul-2022 11:42**
Client ID: Run ID: **TOC_04_413357** SeqNo: **6756285** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.544	1.00	10	0	95.4	85 - 115				

LCSD Sample ID: **LCSD-07192022** Units: **mg/L** Analysis Date: **20-Jul-2022 11:56**
Client ID: Run ID: **TOC_04_413357** SeqNo: **6756286** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.601	1.00	10	0	96.0	85 - 115	9.544	0.595	20	

MS Sample ID: **HS22070224-01MS** Units: **mg/L** Analysis Date: **20-Jul-2022 12:21**
Client ID: Run ID: **TOC_04_413357** SeqNo: **6756288** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.99	1.00	10	4.205	97.8	80 - 120				

The following samples were analyzed in this batch: HS22070566-01

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070566

QC BATCH REPORT

Batch ID: R413374 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK	Sample ID: **MBLK-R413374**			Units: **mg/L**		Analysis Date: **19-Jul-2022 12:45**				
Client ID:		Run ID: **WetChem_HS_413374**		SeqNo: **6756504**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U
LCS	Sample ID: **LCS-R413374**			Units: **mg/L**		Analysis Date: **19-Jul-2022 12:45**				
Client ID:		Run ID: **WetChem_HS_413374**		SeqNo: **6756503**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.14	0.20	10	0	101	80 - 120				
MS	Sample ID: **HS22070267-01MS**			Units: **mg/L**		Analysis Date: **19-Jul-2022 12:45**				
Client ID:		Run ID: **WetChem_HS_413374**		SeqNo: **6756509**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.06	0.20	10	0.041	100	80 - 120				
MSD	Sample ID: **HS22070267-01MSD**			Units: **mg/L**		Analysis Date: **19-Jul-2022 12:45**				
Client ID:		Run ID: **WetChem_HS_413374**		SeqNo: **6756508**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.734	0.20	10	0.041	96.9	80 - 120	10.06	3.24	20	

The following samples were analyzed in this batch: HS22070566-01

ALS Houston, US Date: 20-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22070566**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 20-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070566 **Date/Time Received:** **13-Jul-2022 09:30**

Client Name: Bhate Environmental **Received by:** **Nilesh D. Ranchod**

Completed By:	/S/ Nilesh D. Ranchod	13-Jul-2022 10:55	**Reviewed by:**	/S/ Ragen Giga	18-Jul-2022 18:18
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	2.0°C/2.5°C UC/C	IR 31
Cooler(s)/Kit(s):	49172	
Date/Time sample(s) sent to storage:	07/13/22 11:30	

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: Dane Wacasey

Page 1 of 1

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)
LH18/24-SP650_071222	Water	07/12/22 / 14:00		3	X	X			H2SO4
LH18/24-SP650_071222	Water	07/12/22 / 14:00		1			X		NONE
LH18/24–SP650_071222_AIX	Water	07/12/22 / 14:00		1				X	NONE
LH18/24-SP650_071222_BIX	Water	07/12/22 / 14:00		1				X	NONE

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

HS2207056 6

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/12/22	14:30		7/13/22	09:30						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

49172 WC 2.0 LH#31 C/C has

(Word) S:\All-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

49172

CUSTODY SEAL
Date: 7/12/22 Time: 1430
Name: [illegible]
Company: [illegible]

Seal Broken By:
Date: 07/13/22

49172

Must Deliver Next Business Day
Time and Tempature Sensitive!

49172

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 12JUL22
ACTWGT: 1.00 LB
CAD: 1022124/CAFE3510
DIMS: 26x14x1

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAPP 16-B075777-RJ
PO#:

FedEx Express

TRK# 0473 0838 9542

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

July 19, 2022 Service Request No:E2200690

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22070566

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 13, 2022
For your reference, these analyses have been assigned our service request number **E2200690.**

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	**Service Request No.:**	E2200690
Project:	HS22070566	**Date Received:**	07/13/22
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

Two samples were received for analysis at ALS Environmental in Houston on 07/13/22.

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:

EQ2200295: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. RPD exceedance in LCS-DLCS; the individual recoveries met acceptance criteria.

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:**E2200690
Project: HS22070566

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200690-001	LH18/24-SP650_071222_AIX	7/12/2022	1400
E2200690-002	LH18/24-SP650_071222_BIX	7/12/2022	1400

Service Request Summary

Folder #: **E2200690**
Client Name: ALS Environmental - US
Project Name: HS22070566
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/20/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070566
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200690-001	LH18/24-SP650_071222_AIX	Water	07/12/22 1400	**IV**
E2200690-002	LH18/24-SP650_071222_BIX	Water	07/12/22 1400	**IV**

Service Request Summary

Folder #: **E2200690**
Client Name: ALS Environmental - US
Project Name: HS22070566
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/20/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070566
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932021-12	7/31/2022
Washington Department of Health	C819-2022	11/14/2022

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:** 19180

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22070566
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22070566-02**	**LH18/24-SP650_071222_AIX**	**Water**	**12 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			20 Jul 2022
2.	**HS22070566-03**	**LH18/24-SP650_071222_BIX**	**Water**	**12 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			20 Jul 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: Corey G Date/Time: 7-13-22 1202

Cooler ID(s): Temperature(s):

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-41 Thermometer ID 1231

Date/Time Received: 7-13-22 Initials: CG Date/Time Logged in: 7-13-22 Initials CG

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 If yes, how many and where?
Were they intact? ○ Yes ○ No ☒ N/A
Were they signed and dated? ○ Yes ○ No ☒ N/A

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		7-13-22	1202	CG	4.1	☑
						☐
						☐
						☐

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#: 402817 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/18/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200680-001	157 redoxed urine	.01	6850/ClO4			Water	10mL	
2	E2200680-002	185P raw urine	.01	6850/ClO4			Water	10mL	
3	E2200680-003	187P redoxed urine	.01	6850/ClO4			Water	10mL	
4	E2200680-004	195P redoxed urine	.01	6850/ClO4			Water	10mL	
5	E2200688-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2200689-001	LH18/24-SP140_071222	.01	6850/ClO4 DOD			Water	10mL	
7	E2200690-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
8	E2200690-002	LH18/24-SP650_071222_BIX	.01	6850/ClO4 DOD			Water	10mL	
9	EQ2200295-01	MB		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200295-02	LCS		6850/ClO4 DOD			Liquid	10mL	
11	EQ2200295-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
12	K2207770-001	LGAC-INF-071122	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200295-02 1.00µL EQ2200295-02 1.00µL EQ2200295-03 1.00µL EQ2200295-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200680-001 100.00µL E2200680-002 100.00µL E2200680-003 100.00µL E2200680-004 100.00µL E2200688-001 100.00µL E2200689-001 100.00µL
E2200690-001 100.00µL E2200690-002 100.00µL EQ2200295-01 100.00µL EQ2200295-01 100.00µL EQ2200295-02 100.00µL EQ2200295-02 100.00µL
EQ2200295-03 100.00µL EQ2200295-03 100.00µL K2207770-001 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223055) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (222410)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 7/18/22 13:00
Finished: 7/18/22 13:37
By: GRIVERA
Comments

Comments:

Preparation Information Benchsheet

Prep Run#: 402817
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 7/18/22 13:00

Reviewed By: GR Date: 7/18/22

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
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:**	E2200690
Project:	HS22070566	**Date Collected:**	7/12/22 1400
Sample Matrix:	Water	**Date Received:**	7/13/22
Sample Name:	LH18/24-SP650_071222_AIX	**Units:**	µg/L
Lab Code:	E2200690-001	**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	**0.0318**	J	0.100	0.0500	0.0250	1	7/18/22	7/19/22 11:07	402817	770867	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200690
Project:	HS22070566	**Date Collected:**	7/12/22 1400
Sample Matrix:	Water	**Date Received:**	7/13/22
Sample Name:	LH18/24-SP650_071222_BIX	**Units:**	µg/L
Lab Code:	E2200690-002	**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	**0.285**		0.100	0.0500	0.0250	1	7/18/22	7/19/22 11:26	402817	770867	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200690
Project:	HS22070566	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200295-01	**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	7/18/22	7/18/22 12:50	402817	770746	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22070566
Sample Matrix: Water

Service Request: E2200690
Date Analyzed: 7/18/22

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: 402817

	Lab Control Sample EQ2200295-02			Duplicate Lab Control Sample EQ2200295-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.0873	0.100	87	84 - 119	17 *	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:**	E2200690
Project:	HS22070566	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-02	**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	**0.103**		0.100	0.0500	0.0250	1	7/18/22	7/18/22 12:58	402817	770746	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200690
Project:	HS22070566	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-03	**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	**0.0873**	J	0.100	0.0500	0.0250	1	7/18/22	7/18/22 13:30	402817	770746	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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July 26, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070567**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Jul 13, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22070567

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070567-01	LH18/24-SP650_071222	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐
HS22070567-02	LH18/24-SP650_071222_AIX	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐
HS22070567-03	Trip Blank	Water		12-Jul-2022 00:00	13-Jul-2022 09:30	☐

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22070567

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 181263

Sample ID: LH18/24-SP650_071222 (HS22070567-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R412849

Sample ID: HS22070504-09MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020A

Batch ID: 181584

Sample ID: HS22070583-03MS

• MS is for an unrelated sample

WetChemistry by Method SW7196

Batch ID: R412845

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22070567
Sample ID: LH18/24-SP650_071222 Lab ID:HS22070567-01
Collection Date: 12-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	13-Jul-2022 13:24
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	13-Jul-2022 13:24
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	13-Jul-2022 13:24
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	13-Jul-2022 13:24
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	13-Jul-2022 13:24
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22070567
Sample ID: LH18/24-SP650_071222 Lab ID:HS22070567-01
Collection Date: 12-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
cis-1,2-Dichloroethene	**2.9**		**0.20**	**0.50**	**1.0**	**ug/L**	1	13-Jul-2022 13:24
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	13-Jul-2022 13:24
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	13-Jul-2022 13:24
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:24
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:24
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:24
Surr: 1,2-Dichloroethane-d4	*105*			**0**	*81-118*	*%REC*	*1*	*13-Jul-2022 13:24*
Surr: 4-Bromofluorobenzene	*99.6*			**0**	*85-114*	*%REC*	*1*	*13-Jul-2022 13:24*
Surr: Dibromofluoromethane	*98.6*			**0**	*80-119*	*%REC*	*1*	*13-Jul-2022 13:24*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*13-Jul-2022 13:24*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 15-Jul-2022		Analyst: JLJ
1,4-Dioxane	**14**	a	**1.0**	**1.0**	**1.0**	**ug/L**	100	21-Jul-2022 12:23
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*21-Jul-2022 12:23*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*21-Jul-2022 12:23*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*21-Jul-2022 12:23*
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 25-Jul-2022		Analyst: JC
Barium	**0.239**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	25-Jul-2022 23:34
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	25-Jul-2022 23:34
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	25-Jul-2022 23:34
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	25-Jul-2022 23:34

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:HS22070567
Sample ID: LH18/24-SP650_071222
Lab ID:HS22070567-01
Collection Date: 12-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
HEXAVALENT CHROMIUM BY SW7196A	**Method:SW7196**							Analyst: AP
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	13-Jul-2022 12:46

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:HS22070567
Sample ID: LH18/24-SP650_071222_AIX
Lab ID:HS22070567-02
Collection Date: 12-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jul-2022 19:43

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22070567
Sample ID: Trip Blank Lab ID:HS22070567-03
Collection Date: 12-Jul-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	13-Jul-2022 13:03
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	13-Jul-2022 13:03
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	13-Jul-2022 13:03
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	13-Jul-2022 13:03
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	13-Jul-2022 13:03
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22070567
Sample ID: Trip Blank Lab ID:HS22070567-03
Collection Date: 12-Jul-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	13-Jul-2022 13:03
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	13-Jul-2022 13:03
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Jul-2022 13:03
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Jul-2022 13:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	13-Jul-2022 13:03
Surr: 1,2-Dichloroethane-d4	*103*			**0**	*81-118*	*%REC*	*1*	*13-Jul-2022 13:03*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*13-Jul-2022 13:03*
Surr: Dibromofluoromethane	*97.4*			**0**	*80-119*	*%REC*	*1*	*13-Jul-2022 13:03*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*13-Jul-2022 13:03*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

Batch ID: 181263 **Start Date:** 15 Jul 2022 09:30 **End Date:** 15 Jul 2022 14:00
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22070567-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 181584 **Start Date:** 25 Jul 2022 08:00 **End Date:** 25 Jul 2022 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22070567-01		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 181263 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22070567-01	LH18/24-SP650_071222	12 Jul 2022 14:00		15 Jul 2022 14:09	21 Jul 2022 12:23	100
Batch ID: 181584 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22070567-01	LH18/24-SP650_071222	12 Jul 2022 14:00		25 Jul 2022 08:00	25 Jul 2022 23:34	1
Batch ID: R412845 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22070567-01	LH18/24-SP650_071222	12 Jul 2022 14:00			13 Jul 2022 12:46	1
Batch ID: R412849 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22070567-01	LH18/24-SP650_071222	12 Jul 2022 14:00			13 Jul 2022 13:24	1
HS22070567-03	Trip Blank	12 Jul 2022 00:00			13 Jul 2022 13:03	1
Batch ID: R413282 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22070567-02	LH18/24-SP650_071222_AIX	12 Jul 2022 14:00			19 Jul 2022 19:43	1

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: 181584 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-181584** Units: **mg/L** Analysis Date: **25-Jul-2022 22:45**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765081** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00500								U
Lead	0.00125	0.00500								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-181584** Units: **mg/L** Analysis Date: **25-Jul-2022 22:47**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765082** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.05213	0.00500	0.05	0	104	86 - 114				
Lead	0.05124	0.00500	0.05	0	102	88 - 115				
Selenium	0.05276	0.00500	0.05	0	106	80 - 120				
Silver	0.04844	0.00500	0.05	0	96.9	85 - 116				

MS Sample ID: **HS22070583-03MS** Units: **mg/L** Analysis Date: **25-Jul-2022 22:53**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765085** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1297	0.00500	0.05	0.07582	108	86 - 114				
Lead	0.0479	0.00500	0.05	0.000047	95.7	88 - 115				
Selenium	0.04707	0.00500	0.05	0.001226	91.7	80 - 120				
Silver	0.04198	0.00500	0.05	0.000005	84.0	85 - 116				S

MSD Sample ID: **HS22070583-03MSD** Units: **mg/L** Analysis Date: **25-Jul-2022 22:55**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765086** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1285	0.00500	0.05	0.07582	105	86 - 114	0.1297	0.96	20	
Lead	0.04862	0.00500	0.05	0.000047	97.2	88 - 115	0.0479	1.5	20	
Selenium	0.04999	0.00500	0.05	0.001226	97.5	80 - 120	0.04707	6.02	20	
Silver	0.0443	0.00500	0.05	0.000005	88.6	85 - 116	0.04198	5.36	20	

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: 181584 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22070583-03PDS** Units: **mg/L** Analysis Date: **25-Jul-2022 22:57**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765087** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1793	0.00500	0.1	0.07582	104	80 - 120				
Lead	0.09842	0.00500	0.1	0.000047	98.4	80 - 120				
Selenium	0.09789	0.00500	0.1	0.001226	96.7	80 - 120				
Silver	0.09109	0.00500	0.1	0.000005	91.1	80 - 120				

SD Sample ID: **HS22070583-03SD** Units: **mg/L** Analysis Date: **25-Jul-2022 22:51**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765084** PrepDate: **25-Jul-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.07193	0.0250					0.07582	5.13	10	
Lead	0.00625	0.0250					0.000047	0	10	U
Selenium	0.0125	0.0250					0.001226	0	10	U
Silver	0.00250	0.0250					0.000005	0	10	U

The following samples were analyzed in this batch: HS22070567-01

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: 181263 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-181263** Units: **ug/L** Analysis Date: **21-Jul-2022 11:03**
Client ID: Run ID: **SV-6_413649** SeqNo: **6763253** PrepDate: **15-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.07233*	*0*	*0.08*	*0*	*90.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.06012*	*0*	*0.08*	*0*	*75.1*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.0533*	*0*	*0.08*	*0*	*66.6*	*40 - 140*				

LCS Sample ID: **LCS-181263** Units: **ug/L** Analysis Date: **21-Jul-2022 11:22**
Client ID: Run ID: **SV-6_413649** SeqNo: **6763254** PrepDate: **15-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.09609	0.010	0.08	0	120	40 - 140				
Surr: 2-Fluorobiphenyl	*0.05091*	*0*	*0.08*	*0*	*63.6*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04295*	*0*	*0.08*	*0*	*53.7*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.04914*	*0*	*0.08*	*0*	*61.4*	*40 - 140*				

LCSD Sample ID: **LCSD-181263** Units: **ug/L** Analysis Date: **21-Jul-2022 11:41**
Client ID: Run ID: **SV-6_413649** SeqNo: **6763255** PrepDate: **15-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1033	0.010	0.08	0	129	40 - 140	0.09609	7.27	20	
Surr: 2-Fluorobiphenyl	*0.05298*	*0*	*0.08*	*0*	*66.2*	*40 - 140*	*0.05091*	*3.99*	*20*	
Surr: 4-Terphenyl-d14	*0.0425*	*0*	*0.08*	*0*	*53.1*	*40 - 140*	*0.04295*	*1.05*	*20*	
Surr: Nitrobenzene-d5	*0.05494*	*0*	*0.08*	*0*	*68.7*	*40 - 140*	*0.04914*	*11.2*	*20*	

The following samples were analyzed in this batch: HS22070567-01

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220713** Units: **ug/L** Analysis Date: **13-Jul-2022 12:42**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744497** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220713** Units: **ug/L** Analysis Date: **13-Jul-2022 12:42**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744497** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*50.7*	*1.0*	*50*	*0*	*101*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.14*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*48.86*	*1.0*	*50*	*0*	*97.7*	*80 - 119*				
Surr: Toluene-d8	*53.6*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220713** Units: **ug/L** Analysis Date: **13-Jul-2022 11:59**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744496** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.63	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.41	1.0	20	0	102	74 - 131				
1,1,2,2-Tetrachloroethane	19.67	1.0	20	0	98.3	71 - 121				
1,1,2-Trichloroethane	20.35	1.0	20	0	102	80 - 119				
1,1-Dichloroethane	18.83	1.0	20	0	94.1	77 - 125				
1,1-Dichloroethene	17.92	1.0	20	0	89.6	71 - 131				
1,1-Dichloropropene	19.68	1.0	20	0	98.4	78 - 125				
1,2,3-Trichlorobenzene	19.77	1.0	20	0	98.9	69 - 129				
1,2,3-Trichloropropane	18.03	1.0	20	0	90.1	73 - 122				
1,2,4-Trichlorobenzene	20.55	1.0	20	0	103	69 - 130				
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	76 - 124				
1,2-Dibromo-3-chloropropane	18.44	1.0	20	0	92.2	62 - 128				
1,2-Dibromoethane	21.01	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	21.65	1.0	20	0	108	73 - 128				
1,2-Dichloropropane	19.29	1.0	20	0	96.5	78 - 122				
1,3,5-Trimethylbenzene	20.04	1.0	20	0	100	75 - 124				
1,3-Dichlorobenzene	20.59	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	19.7	1.0	20	0	98.5	80 - 119				
1,4-Dichlorobenzene	19.8	1.0	20	0	99.0	79 - 118				
2,2-Dichloropropane	20.85	1.0	20	0	104	60 - 139				
2-Butanone	35.5	2.0	40	0	88.7	56 - 143				
2-Chlorotoluene	20	1.0	20	0	100	79 - 122				
2-Hexanone	37.94	2.0	40	0	94.9	57 - 139				
4-Chlorotoluene	20.48	1.0	20	0	102	78 - 122				
4-Isopropyltoluene	21.08	1.0	20	0	105	77 - 127				
4-Methyl-2-pentanone	38.53	2.0	40	0	96.3	67 - 130				
Acetone	37.7	2.0	40	0	94.2	39 - 160				
Benzene	19.73	1.0	20	0	98.6	79 - 120				
Bromobenzene	21.07	1.0	20	0	105	80 - 120				
Bromochloromethane	20.02	1.0	20	0	100	78 - 123				
Bromodichloromethane	20.34	1.0	20	0	102	79 - 125				
Bromoform	21.14	1.0	20	0	106	66 - 130				
Bromomethane	14.63	1.0	20	0	73.2	53 - 141				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220713** Units: **ug/L** Analysis Date: **13-Jul-2022 11:59**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744496** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.27	2.0	40	0	90.7	64 - 133				
Carbon tetrachloride	19.73	1.0	20	0	98.6	72 - 136				
Chlorobenzene	20.55	1.0	20	0	103	82 - 118				
Chloroethane	18.61	1.0	20	0	93.1	60 - 138				
Chloroform	20.17	1.0	20	0	101	79 - 124				
Chloromethane	15.13	1.0	20	0	75.6	50 - 139				
cis-1,2-Dichloroethene	19.93	1.0	20	0	99.6	78 - 123				
cis-1,3-Dichloropropene	20.34	1.0	20	0	102	75 - 124				
Dibromochloromethane	20.63	1.0	20	0	103	74 - 126				
Dibromomethane	20.03	1.0	20	0	100	79 - 123				
Dichlorodifluoromethane	14.17	1.0	20	0	70.8	32 - 152				
Ethylbenzene	19.95	1.0	20	0	99.8	79 - 121				
Hexachlorobutadiene	21.94	1.0	20	0	110	66 - 134				
Isopropylbenzene	20.06	1.0	20	0	100	72 - 131				
m,p-Xylene	40.85	2.0	40	0	102	80 - 121				
Methylene chloride	18.8	2.0	20	0	94.0	74 - 124				
Naphthalene	19.26	1.0	20	0	96.3	61 - 128				
n-Butylbenzene	21.39	1.0	20	0	107	75 - 128				
n-Propylbenzene	20.53	1.0	20	0	103	76 - 126				
o-Xylene	20.29	1.0	20	0	101	78 - 122				
sec-Butylbenzene	20.17	1.0	20	0	101	77 - 126				
Styrene	20.22	1.0	20	0	101	78 - 123				
tert-Butylbenzene	20.48	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.36	1.0	20	0	102	74 - 129				
Toluene	19.75	1.0	20	0	98.8	80 - 121				
trans-1,2-Dichloroethene	19.89	1.0	20	0	99.4	75 - 124				
trans-1,3-Dichloropropene	19.95	1.0	20	0	99.8	73 - 127				
Trichloroethene	20.42	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.94	1.0	20	0	99.7	65 - 141				
Vinyl chloride	15.79	1.0	20	0	79.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.8*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.2*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*51.56*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*48.92*	*1.0*	*50*	*0*	*97.8*	*89 - 112*				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070504-09MS** Units: **ug/L** Analysis Date: **13-Jul-2022 15:30**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744501** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.98	1.0	20	0	110	78 - 124				
1,1,1-Trichloroethane	20.98	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	21.05	1.0	20	0	105	71 - 121				
1,1,2-Trichloroethane	20.75	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	18.52	1.0	20	0	92.6	77 - 125				
1,1-Dichloroethene	17.95	1.0	20	0	89.7	71 - 131				
1,1-Dichloropropene	20.98	1.0	20	0	105	78 - 125				
1,2,3-Trichlorobenzene	19.24	1.0	20	0	96.2	69 - 129				
1,2,3-Trichloropropane	19.44	1.0	20	0	97.2	73 - 122				
1,2,4-Trichlorobenzene	21.14	1.0	20	0	106	69 - 130				
1,2,4-Trimethylbenzene	26.89	1.0	20	0	134	76 - 124				S
1,2-Dibromo-3-chloropropane	19.82	1.0	20	0	99.1	62 - 128				
1,2-Dibromoethane	22.13	1.0	20	0	111	77 - 121				
1,2-Dichlorobenzene	22.52	1.0	20	0	113	80 - 119				
1,2-Dichloroethane	22.17	1.0	20	0	111	73 - 128				
1,2-Dichloropropane	19.13	1.0	20	0	95.7	78 - 122				
1,3,5-Trimethylbenzene	24.4	1.0	20	0	122	75 - 124				
1,3-Dichlorobenzene	23.21	1.0	20	0	116	80 - 119				
1,3-Dichloropropane	20.65	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	22.62	1.0	20	0	113	79 - 118				
2,2-Dichloropropane	21.03	1.0	20	0	105	60 - 139				
2-Butanone	30.71	2.0	40	0	76.8	56 - 143				
2-Chlorotoluene	23.04	1.0	20	0	115	79 - 122				
2-Hexanone	39.68	2.0	40	0	99.2	57 - 139				
4-Chlorotoluene	23.44	1.0	20	0	117	78 - 122				
4-Isopropyltoluene	24.97	1.0	20	0	125	77 - 127				
4-Methyl-2-pentanone	40.2	2.0	40	0	101	67 - 130				
Acetone	27.68	2.0	40	0	69.2	39 - 160				
Benzene	20.62	1.0	20	0	103	79 - 120				
Bromobenzene	23.43	1.0	20	0	117	80 - 120				
Bromochloromethane	19.08	1.0	20	0	95.4	78 - 123				
Bromodichloromethane	20.32	1.0	20	0	102	79 - 125				
Bromoform	22.11	1.0	20	0	111	66 - 130				
Bromomethane	17.05	1.0	20	0	85.2	53 - 141				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070504-09MS** Units: **ug/L** Analysis Date: **13-Jul-2022 15:30**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744501** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.03	2.0	40	0	90.1	64 - 133				
Carbon tetrachloride	21.8	1.0	20	0	109	72 - 136				
Chlorobenzene	22.11	1.0	20	0	111	82 - 118				
Chloroethane	14.71	1.0	20	0	73.6	60 - 138				
Chloroform	20.44	1.0	20	0.8094	98.1	79 - 124				
Chloromethane	12.29	1.0	20	0	61.4	50 - 139				
cis-1,2-Dichloroethene	19.29	1.0	20	0	96.5	78 - 123				
cis-1,3-Dichloropropene	20.06	1.0	20	0	100	75 - 124				
Dibromochloromethane	21.3	1.0	20	0	106	74 - 126				
Dibromomethane	20	1.0	20	0	100	79 - 123				
Dichlorodifluoromethane	11.25	1.0	20	0	56.2	32 - 152				
Ethylbenzene	22.81	1.0	20	0	114	79 - 121				
Hexachlorobutadiene	24.06	1.0	20	0	120	66 - 134				
Isopropylbenzene	23.07	1.0	20	0	115	72 - 131				
m,p-Xylene	46.82	2.0	40	0	117	80 - 121				
Methylene chloride	17.61	2.0	20	0	88.0	74 - 124				
Naphthalene	26.71	1.0	20	0	134	61 - 128				S
n-Butylbenzene	25.66	1.0	20	0	128	75 - 128				S
n-Propylbenzene	24.86	1.0	20	0	124	76 - 126				
o-Xylene	22.9	1.0	20	0	115	78 - 122				
sec-Butylbenzene	24.6	1.0	20	0	123	77 - 126				
Styrene	21.8	1.0	20	0	109	78 - 123				
tert-Butylbenzene	24.46	1.0	20	0	122	78 - 124				
Tetrachloroethene	23.44	1.0	20	0	117	74 - 129				
Toluene	21.65	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	19.51	1.0	20	0	97.6	75 - 124				
trans-1,3-Dichloropropene	20.21	1.0	20	0	101	73 - 127				
Trichloroethene	21.7	1.0	20	0	109	79 - 123				
Trichlorofluoromethane	19.81	1.0	20	0	99.1	65 - 141				
Vinyl chloride	14.29	1.0	20	0	71.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.73*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.71*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*49.25*	*1.0*	*50*	*0*	*98.5*	*80 - 119*				
Surr: Toluene-d8	*53.85*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070504-09MSD** Units: **ug/L** Analysis Date: **13-Jul-2022 15:51**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744502** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.91	1.0	20	0	105	78 - 124	21.98	5.02	20	
1,1,1-Trichloroethane	19.83	1.0	20	0	99.2	74 - 131	20.98	5.61	20	
1,1,2,2-Tetrachloroethane	20.22	1.0	20	0	101	71 - 121	21.05	4.06	20	
1,1,2-Trichloroethane	20.19	1.0	20	0	101	80 - 119	20.75	2.75	20	
1,1-Dichloroethane	17.31	1.0	20	0	86.6	77 - 125	18.52	6.72	20	
1,1-Dichloroethene	17.08	1.0	20	0	85.4	71 - 131	17.95	4.95	20	
1,1-Dichloropropene	19.84	1.0	20	0	99.2	78 - 125	20.98	5.59	20	
1,2,3-Trichlorobenzene	21.21	1.0	20	0	106	69 - 129	19.24	9.75	20	
1,2,3-Trichloropropane	18.72	1.0	20	0	93.6	73 - 122	19.44	3.78	20	
1,2,4-Trichlorobenzene	22.11	1.0	20	0	111	69 - 130	21.14	4.48	20	
1,2,4-Trimethylbenzene	22.78	1.0	20	0	114	76 - 124	26.89	16.6	20	
1,2-Dibromo-3-chloropropane	19.99	1.0	20	0	99.9	62 - 128	19.82	0.838	20	
1,2-Dibromoethane	21.4	1.0	20	0	107	77 - 121	22.13	3.34	20	
1,2-Dichlorobenzene	21.5	1.0	20	0	107	80 - 119	22.52	4.67	20	
1,2-Dichloroethane	21.45	1.0	20	0	107	73 - 128	22.17	3.33	20	
1,2-Dichloropropane	18.54	1.0	20	0	92.7	78 - 122	19.13	3.14	20	
1,3,5-Trimethylbenzene	22.02	1.0	20	0	110	75 - 124	24.4	10.3	20	
1,3-Dichlorobenzene	21.38	1.0	20	0	107	80 - 119	23.21	8.23	20	
1,3-Dichloropropane	19.83	1.0	20	0	99.1	80 - 119	20.65	4.06	20	
1,4-Dichlorobenzene	21.17	1.0	20	0	106	79 - 118	22.62	6.65	20	
2,2-Dichloropropane	19.86	1.0	20	0	99.3	60 - 139	21.03	5.7	20	
2-Butanone	31.97	2.0	40	0	79.9	56 - 143	30.71	4.02	20	
2-Chlorotoluene	21.05	1.0	20	0	105	79 - 122	23.04	9.03	20	
2-Hexanone	39.01	2.0	40	0	97.5	57 - 139	39.68	1.71	20	
4-Chlorotoluene	21.48	1.0	20	0	107	78 - 122	23.44	8.75	20	
4-Isopropyltoluene	22.88	1.0	20	0	114	77 - 127	24.97	8.75	20	
4-Methyl-2-pentanone	38.96	2.0	40	0	97.4	67 - 130	40.2	3.13	20	
Acetone	28.32	2.0	40	0	70.8	39 - 160	27.68	2.3	20	
Benzene	19.46	1.0	20	0	97.3	79 - 120	20.62	5.79	20	
Bromobenzene	21.54	1.0	20	0	108	80 - 120	23.43	8.42	20	
Bromochloromethane	18.61	1.0	20	0	93.0	78 - 123	19.08	2.48	20	
Bromodichloromethane	19.85	1.0	20	0	99.2	79 - 125	20.32	2.38	20	
Bromoform	21.55	1.0	20	0	108	66 - 130	22.11	2.58	20	
Bromomethane	15.62	1.0	20	0	78.1	53 - 141	17.05	8.74	20	

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412849 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070504-09MSD** Units: **ug/L** Analysis Date: **13-Jul-2022 15:51**
Client ID: Run ID: **VOA6_412849** SeqNo: **6744502** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	33.73	2.0	40	0	84.3	64 - 133	36.03	6.6	20	
Carbon tetrachloride	20.87	1.0	20	0	104	72 - 136	21.8	4.34	20	
Chlorobenzene	20.79	1.0	20	0	104	82 - 118	22.11	6.15	20	
Chloroethane	18.16	1.0	20	0	90.8	60 - 138	14.71	20.9	20	R
Chloroform	19.38	1.0	20	0.8094	92.9	79 - 124	20.44	5.3	20	
Chloromethane	11.76	1.0	20	0	58.8	50 - 139	12.29	4.36	20	
cis-1,2-Dichloroethene	18.58	1.0	20	0	92.9	78 - 123	19.29	3.77	20	
cis-1,3-Dichloropropene	19.31	1.0	20	0	96.5	75 - 124	20.06	3.84	20	
Dibromochloromethane	20.75	1.0	20	0	104	74 - 126	21.3	2.6	20	
Dibromomethane	19.31	1.0	20	0	96.5	79 - 123	20	3.53	20	
Dichlorodifluoromethane	10.42	1.0	20	0	52.1	32 - 152	11.25	7.67	20	
Ethylbenzene	20.99	1.0	20	0	105	79 - 121	22.81	8.35	20	
Hexachlorobutadiene	22.52	1.0	20	0	113	66 - 134	24.06	6.61	20	
Isopropylbenzene	21.62	1.0	20	0	108	72 - 131	23.07	6.48	20	
m,p-Xylene	43.05	2.0	40	0	108	80 - 121	46.82	8.39	20	
Methylene chloride	17.23	2.0	20	0	86.2	74 - 124	17.61	2.14	20	
Naphthalene	23.2	1.0	20	0	116	61 - 128	26.71	14.1	20	
n-Butylbenzene	23.41	1.0	20	0	117	75 - 128	25.66	9.18	20	
n-Propylbenzene	22.26	1.0	20	0	111	76 - 126	24.86	11	20	
o-Xylene	21.01	1.0	20	0	105	78 - 122	22.9	8.6	20	
sec-Butylbenzene	22.12	1.0	20	0	111	77 - 126	24.6	10.6	20	
Styrene	20.54	1.0	20	0	103	78 - 123	21.8	5.98	20	
tert-Butylbenzene	22.23	1.0	20	0	111	78 - 124	24.46	9.55	20	
Tetrachloroethene	21.88	1.0	20	0	109	74 - 129	23.44	6.91	20	
Toluene	20.28	1.0	20	0	101	80 - 121	21.65	6.56	20	
trans-1,2-Dichloroethene	18.69	1.0	20	0	93.4	75 - 124	19.51	4.31	20	
trans-1,3-Dichloropropene	19.27	1.0	20	0	96.4	73 - 127	20.21	4.75	20	
Trichloroethene	20.34	1.0	20	0	102	79 - 123	21.7	6.49	20	
Trichlorofluoromethane	18.8	1.0	20	0	94.0	65 - 141	19.81	5.25	20	
Vinyl chloride	13.6	1.0	20	0	68.0	58 - 137	14.29	4.95	20	
Surr: 1,2-Dichloroethane-d4	*51.31*	*1.0*	*50*	*0*	*103*	*81 - 118*	*52.73*	*2.73*	*20*	
Surr: 4-Bromofluorobenzene	*51.97*	*1.0*	*50*	*0*	*104*	*85 - 114*	*51.71*	*0.49*	*20*	
Surr: Dibromofluoromethane	*49.52*	*1.0*	*50*	*0*	*99.0*	*80 - 119*	*49.25*	*0.543*	*20*	
Surr: Toluene-d8	*53.4*	*1.0*	*50*	*0*	*107*	*89 - 112*	*53.85*	*0.85*	*20*	

ALS Houston, US Date: 26-Jul-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:	HS22070567

QC BATCH REPORT

Batch ID:	**R412849 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22070567-01 HS22070567-03

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22070567

QC BATCH REPORT

Batch ID: R412845 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R412845** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744248** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R412845** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744247** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.24	0.0100	0.25	0	96.0	90 - 111				

MS Sample ID: **HS22070567-01MS** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: **LH18/24-SP650_071222** Run ID: **UV-2450_412845** SeqNo: **6744250** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.231	0.0100	0.25	0	92.4	90 - 111				

MSD Sample ID: **HS22070567-01MSD** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: **LH18/24-SP650_071222** Run ID: **UV-2450_412845** SeqNo: **6744249** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.245	0.0100	0.25	0	98.0	90 - 111	0.231	5.88	20	

The following samples were analyzed in this batch: HS22070567-01

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: **HS22070567**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 26-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070567 **Date/Time Received:** **13-Jul-2022 09:30**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Nilesh D. Ranchod	13-Jul-2022 11:28	**Reviewed by:**	/S/ Dane J. Wacasey	26-Jul-2022 11:06
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	2.0°C/2.5°C UC/C	IR 31
Cooler(s)/Kit(s):	49172	
Date/Time sample(s) sent to storage:	07/13/2022 11:30	

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: Dane Wacasey

Page 1 of 1

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

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY EFFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE	Remarks (Preservatives, etc.)
LH18/24-SP650_071222	Water	07/12/22 / 14:00		3	X					HCL
LH18/24-SP650_071222	Water	07/12/22 / 14:00		2			X	X		NONE
LH18/24-SP650_071222_AIX	Water	07/12/22 / 14:00		1					X	NONE
LH18/24-SP650_071222	Water	07/12/22 / 14:00		1		X				HNO3
Trip Blank	Water	07/12/22		2	X					HCL

Analyses

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/12/22	14:30		7/13/22	09:30						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

4917L ulc 2.0

IKK 21 clc +a5

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

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Effluent Sample

HS22070567

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

49172.

CUSTODY SEAL

Date: 7/12/22 Time: 1430

Name: [illegible]

Company: [illegible]

Seal Broken By:

Date: 07/13/22

49172

Must Deliver Next Business Day
Time and Tempature Sensitive!

49172

ORIGIN ID:SGRA (903) 930-6150
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1209-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 12JUL22
ACTWGT: 1.00 LB
CAD: 6221241/CAFE
DIMS: 26x14

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAPP 16 - B075777 - RJ

INV:
PO:

FedEx Express

TRK# 0473 0838 9542

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

July 19, 2022 Service Request No:E2200688

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22070567

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 13, 2022
For your reference, these analyses have been assigned our service request number **E2200688.**

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	**Service Request No.:**	E2200688
Project:	HS22070567	**Date Received:**	07/13/22
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

One sample was received for analysis at ALS Environmental in Houston on 7 /13/22.

The sample was received in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4 C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200295: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. RPD exceedance in LCS-DLCS; the individual recoveries met acceptance criteria.

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:**E2200688
Project: HS22070567

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200688-001	LH18/24-SP650_071222_AIX	7/12/2022	1400

Service Request Summary

Folder #: **E2200688**
Client Name: ALS Environmental - US
Project Name: HS22070567
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070567
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200688-001	LH18/24-SP650_071222_AIX	Water	07/12/22 1400	**IV**

Service Request Summary

Folder #: **E2200688**
Client Name: ALS Environmental - US
Project Name: HS22070567
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070567
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932021-12	7/31/2022
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
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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:** 19181

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22070567
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22070567-02**	**LH18/24-SP650_071222_AIX**	**Water**	**12 Jul 2022 14:00**
	Provide Level II and Level IV reports in separate pdf			27 Jul 2022

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: 7.13.22 1242

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-41 Thermometer ID 1231

Date/Time Received: 7-13-22 Initials: CG Date/Time Logged in: 7-13-22 Initials CG

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 If yes, how many and where?
Were they intact? ○ Yes ○ No ☒ N/A
Were they signed and dated? ○ Yes ○ No ☒ N/A

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		7-13-22	1202	CG	4.1	☑
						☐
						☐
						☐

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
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

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Preparation Information Benchsheet

Prep Run#: 402817 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/18/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200680-001	157 redoxed urine	.01	6850/ClO4			Water	10mL	
2	E2200680-002	185P raw urine	.01	6850/ClO4			Water	10mL	
3	E2200680-003	187P redoxed urine	.01	6850/ClO4			Water	10mL	
4	E2200680-004	195P redoxed urine	.01	6850/ClO4			Water	10mL	
5	E2200688-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2200689-001	LH18/24-SP140_071222	.01	6850/ClO4 DOD			Water	10mL	
7	E2200690-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
8	E2200690-002	LH18/24-SP650_071222_BIX	.01	6850/ClO4 DOD			Water	10mL	
9	EQ2200295-01	MB		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200295-02	LCS		6850/ClO4 DOD			Liquid	10mL	
11	EQ2200295-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
12	K2207770-001	LGAC-INF-071122	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200295-02 1.00µL EQ2200295-02 1.00µL EQ2200295-03 1.00µL EQ2200295-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200680-001 100.00µL E2200680-002 100.00µL E2200680-003 100.00µL E2200680-004 100.00µL E2200688-001 100.00µL E2200689-001 100.00µL
E2200690-001 100.00µL E2200690-002 100.00µL EQ2200295-01 100.00µL EQ2200295-01 100.00µL EQ2200295-02 100.00µL EQ2200295-02 100.00µL
EQ2200295-03 100.00µL EQ2200295-03 100.00µL K2207770-001 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223055) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (222410)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 7/18/22 13:00
Finished: 7/18/22 13:37
By: GRIVERA
Comments

Comments:

Preparation Information Benchsheet

Prep Run#: 402817
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 7/18/22 13:00

Reviewed By: GR Date: 7/18/22

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:**	E2200688
Project:	HS22070567	**Date Collected:**	7/12/22 1400
Sample Matrix:	Water	**Date Received:**	7/13/22
Sample Name:	LH18/24-SP650_071222_AIX	**Units:**	µg/L
Lab Code:	E2200688-001	**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	**0.186**		0.100	0.0500	0.0250	1	7/18/22	7/19/22 12:01	402817	770867	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200688
Project:	HS22070567	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200295-01	**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	7/18/22	7/18/22 12:50	402817	770746	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22070567
Sample Matrix: Water

Service Request: E2200688
Date Analyzed: 7/18/22

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: 402817

	Lab Control Sample EQ2200295-02			Duplicate Lab Control Sample EQ2200295-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.0873	0.100	87	84 - 119	17 *	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:**	E2200688
Project:	HS22070567	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-02	**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	**0.103**		0.100	0.0500	0.0250	1	7/18/22	7/18/22 12:58	402817	770746	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200688
Project:	HS22070567	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-03	**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	**0.0873**	J	0.100	0.0500	0.0250	1	7/18/22	7/18/22 13:30	402817	770746	

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July 26, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070568**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia Olive,

ALS Environmental received 1 sample(s) on Jul 13, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22070568

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070568-01	LH18/24-SP140_071222	Water		12-Jul-2022 14:00	13-Jul-2022 09:30	☐

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22070568

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Metals by Method SW6020A

Batch ID: 181584

Sample ID: HS22070583-03MS

• MS is for an unrelated sample

WetChemistry by Method SW7196

Batch ID: R412845

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

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Influent Samples WorkOrder:HS22070568

Sample ID: LH18/24-SP140_071222 Lab ID:HS22070568-01

Collection Date: 12-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 25-Jul-2022		Analyst: JC
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	25-Jul-2022 23:36
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	25-Jul-2022 23:36
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: AP
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	13-Jul-2022 12:46
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jul-2022 19:43

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22070568

Batch ID: 181584 **Start Date:** 25 Jul 2022 08:00 **End Date:** 25 Jul 2022 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22070568-01		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22070568

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 181584 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22070568-01	LH18/24-SP140_071222	12 Jul 2022 14:00		25 Jul 2022 08:00	25 Jul 2022 23:36	1
Batch ID: R412845 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22070568-01	LH18/24-SP140_071222	12 Jul 2022 14:00			13 Jul 2022 12:46	1
Batch ID: R413282 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22070568-01	LH18/24-SP140_071222	12 Jul 2022 14:00			19 Jul 2022 19:43	1

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22070568

QC BATCH REPORT

Batch ID: 181584 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-181584** Units: **mg/L** Analysis Date: **25-Jul-2022 22:45**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765081** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-181584** Units: **mg/L** Analysis Date: **25-Jul-2022 22:47**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765082** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05276	0.00500	0.05	0	106	80 - 120				
Silver	0.04844	0.00500	0.05	0	96.9	85 - 116				

MS Sample ID: **HS22070583-03MS** Units: **mg/L** Analysis Date: **25-Jul-2022 22:53**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765085** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04707	0.00500	0.05	0.001226	91.7	80 - 120				
Silver	0.04198	0.00500	0.05	0.000005	84.0	85 - 116				S

MSD Sample ID: **HS22070583-03MSD** Units: **mg/L** Analysis Date: **25-Jul-2022 22:55**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765086** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04999	0.00500	0.05	0.001226	97.5	80 - 120	0.04707	6.02	20	
Silver	0.0443	0.00500	0.05	0.000005	88.6	85 - 116	0.04198	5.36	20	

PDS Sample ID: **HS22070583-03PDS** Units: **mg/L** Analysis Date: **25-Jul-2022 22:57**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765087** PrepDate: **25-Jul-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.09789	0.00500	0.1	0.001226	96.7	80 - 120				
Silver	0.09109	0.00500	0.1	0.000005	91.1	80 - 120				

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22070568

QC BATCH REPORT

Batch ID: 181584 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22070583-03SD** Units: **mg/L** Analysis Date: **25-Jul-2022 22:51**
Client ID: Run ID: **ICPMS06_413711** SeqNo: **6765084** PrepDate: **25-Jul-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0125	0.0250					0.001226	0	10	U
Silver	0.00250	0.0250					0.000005	0	10	U

The following samples were analyzed in this batch: HS22070568-01

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22070568

QC BATCH REPORT

Batch ID: R412845 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R412845** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744248** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R412845** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744247** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.24	0.0100	0.25	0	96.0	90 - 111				

MS Sample ID: **HS22070567-01MS** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744250** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.231	0.0100	0.25	0	92.4	90 - 111				

MSD Sample ID: **HS22070567-01MSD** Units: **mg/L** Analysis Date: **13-Jul-2022 12:46**
Client ID: Run ID: **UV-2450_412845** SeqNo: **6744249** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.245	0.0100	0.25	0	98.0	90 - 111	0.231	5.88	20	

The following samples were analyzed in this batch: HS22070568-01

ALS Houston, US Date: 26-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: **HS22070568**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 26-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070568 **Date/Time Received:** **13-Jul-2022 09:30**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By: */S/ Pablo Marinez* (eSignature) 08-Jun-2022 11:40 (Date/Time) **Reviewed by:** (eSignature) (Date/Time)

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	2.0°C/2.5°C UC/C	IR 31
Cooler(s)/Kit(s):	49172	
Date/Time sample(s) sent to storage:	07/13/22 11:40	

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: Ragen Gigi

Page 1 of 1

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT MONTHLY INFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: SILVER & SELENIUM	HEXAVALENT CHROMIUM	PERCHLORATE	Remarks (Preservatives, etc.)
LH18/24-SP140_071222	Water	07/12/22 / 14:00		1	X			HNO3
LH18/24-SP140_071222	Water	07/12/22 / 14:00		2		X	X	NONE

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Influent Sample

HS22070568

Additional Remarks: STANDARD TURN AROUND TIME

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/12/22	14:30	[illegible]	7/13/22	09:30						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

4/11/22 ULC 2.0
ULM 31 c/f + 2.5

(Word) S:\U-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

49172

CUSTODY SEAL

Date: 7/12/22 Time: 1430
Name: [illegible]
Company: SGRA

Seal Broken By: [illegible]
Date: 07/13/22

49172

Must Deliver Next Business Day
Time and Tempature Sensitive!

49172

ORIGIN ID:SGRA (903) 930-6193
SCOTT GEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 04JAN
ACTWGT: 1.00 LB
CAD: 0221242/
DIMS: 26x14

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAPP 16-B075777-RJ
INV:
PO:

FedEx Express

PRIORITY OVERNIGHT

TRK# 0473 0838 9542

AB SGRA

77099
TX-US
IAH

July 19, 2022 Service Request No:E2200689

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22070568

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 13, 2022
For your reference, these analyses have been assigned our service request number **E2200689.**

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	**Service Request No.:**	E2200689
Project:	HS22070568	**Date Received:**	07/13/22
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

One sample was received for analysis at ALS Environmental in Houston on 07/13/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200295: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. RPD exceedance in LCS-DLCS; the individual recoveries met acceptance criteria.

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:**E2200689
Project: HS22070568

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200689-001	LH18/24-SP140_071222	7/12/2022	1400

Service Request Summary

Folder #: **E2200689**
Client Name: ALS Environmental - US
Project Name: HS22070568
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070568
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200689-001	LH18/24-SP140_071222	Water	07/12/22 1400	**IV**

Service Request Summary

Folder #: **E2200689**
Client Name: ALS Environmental - US
Project Name: HS22070568
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/13/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070568
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932021-12	7/31/2022
Washington Department of Health	C819-2022	11/14/2022

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:** 19182

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22070568
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22070568-01**	**LH18/24-SP140_071222**	**Water**	**12 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			27 Jul 2022

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: 7-19-22 12.02

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-41 Thermometer ID 1231

Date/Time Received: 7-13-22 Initials: CG Date/Time Logged in: 7-13-22 Initials CG

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 If yes, how many and where?
Were they intact? ○ Yes ○ No ☒ N/A
Were they signed and dated? ○ Yes ○ No ☒ N/A

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		7-13-22	1202	CG	4.1	☑
						☐
						☐
						☐

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#: 402817 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/18/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200680-001	157 redoxed urine	.01	6850/ClO4			Water	10mL	
2	E2200680-002	185P raw urine	.01	6850/ClO4			Water	10mL	
3	E2200680-003	187P redoxed urine	.01	6850/ClO4			Water	10mL	
4	E2200680-004	195P redoxed urine	.01	6850/ClO4			Water	10mL	
5	E2200688-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
6	E2200689-001	LH18/24-SP140_071222	.01	6850/ClO4 DOD			Water	10mL	
7	E2200690-001	LH18/24-SP650_071222_AIX	.01	6850/ClO4 DOD			Water	10mL	
8	E2200690-002	LH18/24-SP650_071222_BIX	.01	6850/ClO4 DOD			Water	10mL	
9	EQ2200295-01	MB		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200295-02	LCS		6850/ClO4 DOD			Liquid	10mL	
11	EQ2200295-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
12	K2207770-001	LGAC-INF-071122	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200295-02 1.00µL EQ2200295-02 1.00µL EQ2200295-03 1.00µL EQ2200295-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200680-001 100.00µL E2200680-002 100.00µL E2200680-003 100.00µL E2200680-004 100.00µL E2200688-001 100.00µL E2200689-001 100.00µL
E2200690-001 100.00µL E2200690-002 100.00µL EQ2200295-01 100.00µL EQ2200295-01 100.00µL EQ2200295-02 100.00µL EQ2200295-02 100.00µL
EQ2200295-03 100.00µL EQ2200295-03 100.00µL K2207770-001 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223055) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (222410)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 7/18/22 13:00
Finished: 7/18/22 13:37
By: GRIVERA
Comments

Comments:

Preparation Information Benchsheet

Prep Run#: 402817
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 7/18/22 13:00

Reviewed By: GR Date: 7/18/22

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:**	E2200689
Project:	HS22070568	**Date Collected:**	7/12/22 1400
Sample Matrix:	Water	**Date Received:**	7/13/22
Sample Name:	LH18/24-SP140_071222	**Units:**	µg/L
Lab Code:	E2200689-001	**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	**8330**		50.0	25.0	12.5	500	7/18/22	7/19/22 11:52	402817	770867	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200689
Project:	HS22070568	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200295-01	**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	7/18/22	7/18/22 12:50	402817	770746	

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: HS22070568
Sample Matrix: Water

Service Request: E2200689
Date Analyzed: 7/18/22

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: 402817

	Lab Control Sample EQ2200295-02			Duplicate Lab Control Sample EQ2200295-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.0873	0.100	87	84 - 119	17 *	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:**	E2200689
Project:	HS22070568	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-02	**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	**0.103**		0.100	0.0500	0.0250	1	7/18/22	7/18/22 12:58	402817	770746	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200689
Project:	HS22070568	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200295-03	**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	**0.0873**	J	0.100	0.0500	0.0250	1	7/18/22	7/18/22 13:30	402817	770746	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 27, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070986**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Jul 20, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22070986

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070986-01	LH18/24-SP650_071922	Water		19-Jul-2022 14:00	20-Jul-2022 10:05	☐
HS22070986-02	LH18/24-SP650_071922_AIX	Water		19-Jul-2022 14:00	20-Jul-2022 10:05	☐
HS22070986-03	LH18/24-SP650_071922_BIX	Water		19-Jul-2022 14:00	20-Jul-2022 10:05	☐

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22070986

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E415.1

Batch ID: R413843

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

WetChemistry by Method E350.3

Batch ID: R413772

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

WetChemistry by Method E365.3

Batch ID: R413452

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

ALS Houston, US

Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22070986

Sample ID: LH18/24-SP650_071922

Lab ID:HS22070986-01

Collection Date: 19-Jul-2022 14:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**24**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	26-Jul-2022 15:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**8.05**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	20-Jul-2022 16:52
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**13.0**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	26-Jul-2022 21:02

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

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22070986
Sample ID: LH18/24-SP650_071922_AIX
Lab ID:HS22070986-02
Collection Date: 19-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Jul-2022 16:32

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

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22070986
Sample ID: LH18/24-SP650_071922_BIX
Lab ID:HS22070986-03
Collection Date: 19-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	27-Jul-2022 16:32

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

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070986

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R413452 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22070986-01	LH18/24-SP650_071922	19 Jul 2022 14:00			20 Jul 2022 16:52	10
Batch ID: R413772 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22070986-01	LH18/24-SP650_071922	19 Jul 2022 14:00			26 Jul 2022 15:00	1
Batch ID: R413843 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22070986-01	LH18/24-SP650_071922	19 Jul 2022 14:00			26 Jul 2022 21:02	1
Batch ID: R413881 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22070986-02	LH18/24-SP650_071922_AIX	19 Jul 2022 14:00			27 Jul 2022 16:32	1
HS22070986-03	LH18/24-SP650_071922_BIX	19 Jul 2022 14:00			27 Jul 2022 16:32	1

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070986

QC BATCH REPORT

Batch ID: R413452 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R413452** Units: **mg/L** Analysis Date: **20-Jul-2022 16:52**
Client ID: Run ID: **UV-2450_413452** SeqNo: **6758322** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R413452** Units: **mg/L** Analysis Date: **20-Jul-2022 16:52**
Client ID: Run ID: **UV-2450_413452** SeqNo: **6758321** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.264	0.0250	0.25	0	106	85 - 115				

MS Sample ID: **HS22070978-01MS** Units: **mg/L** Analysis Date: **20-Jul-2022 16:52**
Client ID: Run ID: **UV-2450_413452** SeqNo: **6758324** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.258	0.0250	0.25	-0.006	106	80 - 120				

MSD Sample ID: **HS22070978-01MSD** Units: **mg/L** Analysis Date: **20-Jul-2022 16:52**
Client ID: Run ID: **UV-2450_413452** SeqNo: **6758323** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.258	0.0250	0.25	-0.006	106	80 - 120	0.258	0	20	

The following samples were analyzed in this batch: HS22070986-01

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070986

QC BATCH REPORT

Batch ID: R413772 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R413772** Units: **mg/L** Analysis Date: **26-Jul-2022 15:00**
Client ID: Run ID: **WetChem_HS_413772** SeqNo: **6766550** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R413772** Units: **mg/L** Analysis Date: **26-Jul-2022 15:00**
Client ID: Run ID: **WetChem_HS_413772** SeqNo: **6766549** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.211	0.20	10	0	92.1	80 - 120				

MS Sample ID: **HS22070912-01MS** Units: **mg/L** Analysis Date: **26-Jul-2022 15:00**
Client ID: Run ID: **WetChem_HS_413772** SeqNo: **6766555** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.13	0.20	10	1.225	99.1	80 - 120				

MSD Sample ID: **HS22070912-01MSD** Units: **mg/L** Analysis Date: **26-Jul-2022 15:00**
Client ID: Run ID: **WetChem_HS_413772** SeqNo: **6766554** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	11.14	0.20	10	1.225	99.1	80 - 120	11.13	0.0269	20	

The following samples were analyzed in this batch: HS22070986-01

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22070986

QC BATCH REPORT

Batch ID: R413843 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-07262022** Units: **mg/L** Analysis Date: **26-Jul-2022 19:33**
Client ID: Run ID: **TOC_04_413843** SeqNo: **6768180** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-07262022** Units: **mg/L** Analysis Date: **26-Jul-2022 19:46**
Client ID: Run ID: **TOC_04_413843** SeqNo: **6768181** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.371	1.00	10	0	93.7	85 - 115				

LCSD Sample ID: **LCSD-07262022** Units: **mg/L** Analysis Date: **26-Jul-2022 20:00**
Client ID: Run ID: **TOC_04_413843** SeqNo: **6768182** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.405	1.00	10	0	94.0	85 - 115	9.371	0.362	20	

MS Sample ID: **HS22070969-01MS** Units: **mg/L** Analysis Date: **26-Jul-2022 20:25**
Client ID: Run ID: **TOC_04_413843** SeqNo: **6768184** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	14.12	1.00	10	4.042	101	80 - 120				

The following samples were analyzed in this batch: HS22070986-01

ALS Houston, US Date: 27-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22070986**

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: 27-Jul-22

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 27-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070986 **Date/Time Received:** **20-Jul-2022 10:05**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: /S/ Paresh M. Giga (eSignature) 20-Jul-2022 12:10 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 26-Jul-2022 10:52 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	2.7C/3.2C U/C	IR31	
Cooler(s)/Kit(s):	Blue		
Date/Time sample(s) sent to storage:	7/20/22 12:20		
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:

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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22070986

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE							Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_071922	Water	07/19/22 / 14:00		3	X	X									H2SO4	
LH18/24-SP650_071922	Water	07/19/22 / 14:00		1			X								NONE	
LH18/24–SP650_071922_AIX	Water	07/19/22 / 14:00		1				X							NONE	
LH18/24-SP650_071922_BIX	Water	07/19/22 / 14:00		1				X							NONE	

Analyses

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/19/22	14:30	[illegible]	7/20/2022	10:55						

For Lab Use Only

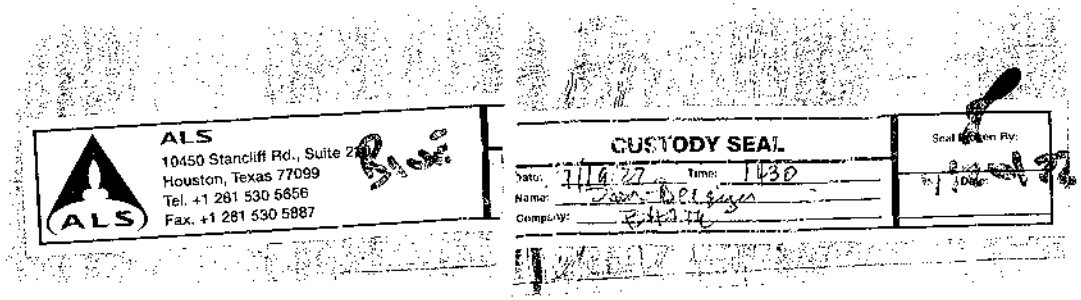
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

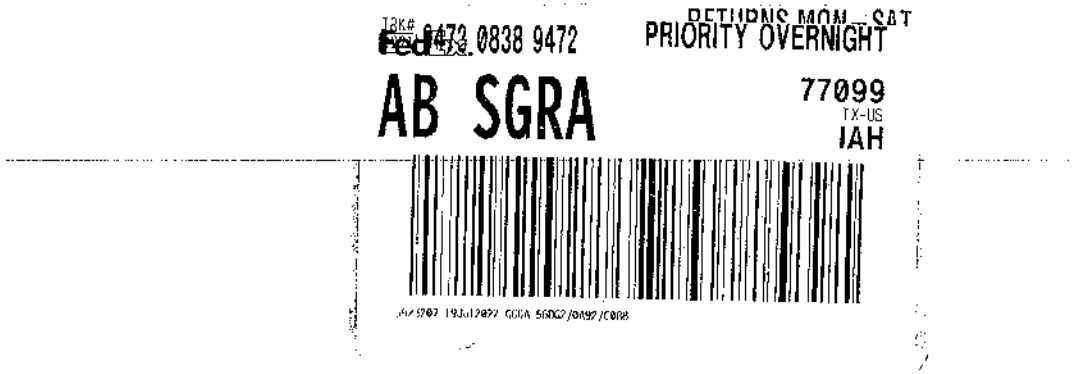
Remarks:

SE

Blue 2.7 @ 31 C (0.5)

(Word) S:\1-ees\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite 2
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 7/14/22
Time: 1430
Name:
Company:
Seal Broken By:
Date:


TRK# 0838 9472
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

July 27, 2022 Service Request No:E2200706

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22070986

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 20, 2022
For your reference, these analyses have been assigned our service request number **E2200706.**

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	**Service Request No.:**	E2200706
Project:	HS22070986	**Date Received:**	07/20/22
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

Two samples were received for analysis at ALS Environmental in Houston on 07/20/22.

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:

EQ2200306: 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 met acceptance criteria. MS/MSD was performed on an unrelated sample.

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:**E2200706
Project: HS22070986

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200706-001	LH18/24-SP650_071922_AIX	7/19/2022	1400
E2200706-002	LH18/24-SP650_071922_BIX	7/19/2022	1400

Service Request Summary

Folder #: **E2200706**
Client Name: ALS Environmental - US
Project Name: HS22070986
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/20/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070986
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200706-001	LH18/24-SP650_071922_AIX	Water	07/19/22 1400	**IV**
E2200706-002	LH18/24-SP650_071922_BIX	Water	07/19/22 1400	**IV**

Service Request Summary

Folder #: **E2200706**
Client Name: ALS Environmental - US
Project Name: HS22070986
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/20/22
Internal Due Date: 7/27/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22070986
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	IV Due 8/10

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022	7/31/2022
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Concervation and Natural Resources	TX026932022-1	7/31/2022
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932021-12	7/31/2022
Washington Department of Health	C819-2022	11/14/2022

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:** 19238

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22070986
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22070986-02**	**LH18/24-SP650_071922_AIX**	**Water**	**19 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			27 Jul 2022
2.	**HS22070986-03**	**LH18/24-SP650_071922_BIX**	**Water**	**19 Jul 2022 14:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			27 Jul 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: [illegible] Date/Time: 7-20-22 1520

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-HI

Thermometer ID 1231

Date/Time Received: 7-20-22 Initials: CH

Date/Time Logged in: 7-20-22 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?
NA		7-20-22	1520	CH	5.1	☒
						☐
						☐
						☐

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#: 403150 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/21/22 08:46

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200702-001	OBFOB-MW03	.01	6850/ClO4 DOD			Water	10mL	
2	E2200702-002	OBFOB-MW02	.01	6850/ClO4 DOD			Water	10mL	
3	E2200702-003	OBF-2	.01	6850/ClO4 DOD			Water	10mL	
4	E2200702-004	OBFOB-MW01	.01	6850/ClO4 DOD			Water	10mL	
5	E2200702-005	OBFOD-MW01	.01	6850/ClO4 DOD			Water	10mL	
6	E2200702-006	OBFOD-1	.01	6850/ClO4 DOD			Water	10mL	
7	E2200702-007	OBFOD-3	.01	6850/ClO4 DOD			Water	10mL	
8	E2200702-008	OBFOD-2R	.01	6850/ClO4 DOD			Water	10mL	
9	E2200703-001	JOD-MW02	.01	6850/ClO4 DOD			Water	10mL	
10	E2200703-002	JOD-MW03	.01	6850/ClO4 DOD			Water	10mL	
11	E2200703-003	JOD-MW04	.01	6850/ClO4 DOD			Water	10mL	
12	E2200703-004	JOD-MW01	.01	6850/ClO4 DOD			Water	10mL	
13	E2200703-005	DUP-01	.01	6850/ClO4 DOD			Water	10mL	
14	E2200703-006	DUP-02	.01	6850/ClO4 DOD			Water	10mL	
15	E2200706-001	LH18/24-SP650_071922_AIX	.01	6850/ClO4 DOD			Water	10mL	
16	E2200706-002	LH18/24-SP650_071922_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	EQ2200306-01	MB		6850/ClO4 DOD			Liquid	10mL	
18	EQ2200306-02	LCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2200306-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200306-04	JOD-MW01 MS	.02	6850/ClO4 DOD			Liquid	10mL	
21	EQ2200306-05	JOD-MW01 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200306-02	1.00µL	EQ2200306-03	1.00µL	EQ2200306-04	1.00µL	EQ2200306-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200702-001	100.00µL	E2200702-002	100.00µL	E2200702-003	100.00µL	E2200702-004	100.00µL	E2200702-005	100.00µL	E2200702-006	100.00µL
E2200702-007	100.00µL	E2200702-008	100.00µL	E2200703-001	100.00µL	E2200703-002	100.00µL	E2200703-003	100.00µL	E2200703-004	100.00µL
E2200703-005	100.00µL	E2200703-006	100.00µL	E2200706-001	100.00µL	E2200706-002	100.00µL	EQ2200306-01	100.00µL	EQ2200306-02	100.00µL
EQ2200306-03	100.00µL	EQ2200306-04	100.00µL	EQ2200306-05	100.00µL						

Preparation Information Benchsheet

Prep Run#: 403150 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/21/22 08:46

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223055)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (222410)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 7/21/22 08:46
Finished: 7/21/22 09:15
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 7/21/22

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:**	E2200706
Project:	HS22070986	**Date Collected:**	7/19/22 1400
Sample Matrix:	Water	**Date Received:**	7/20/22
Sample Name:	LH18/24-SP650_071922_AIX	**Units:**	µg/L
Lab Code:	E2200706-001	**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	**1.32**		0.200	0.100	0.0500	2	7/21/22	7/25/22 10:58	403150	771568	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200706
Project:	HS22070986	**Date Collected:**	7/19/22 1400
Sample Matrix:	Water	**Date Received:**	7/20/22
Sample Name:	LH18/24-SP650_071922_BIX	**Units:**	µg/L
Lab Code:	E2200706-002	**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	**7.86**		0.500	0.250	0.125	5	7/21/22	7/25/22 17:11	403150	771568	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200706
Project:	HS22070986	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200306-01	**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	7/21/22	7/21/22 13:38	403150	771246	

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: HS22070986
Sample Matrix: Water

Service Request: E2200706
Date Analyzed: 7/21/22

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: 403150

	Lab Control Sample EQ2200306-02			Duplicate Lab Control Sample EQ2200306-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.116	0.100	116	0.110	0.100	110	84 - 119	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:**	E2200706
Project:	HS22070986	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200306-02	**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	**0.116**		0.100	0.0500	0.0250	1	7/21/22	7/21/22 13:46	403150	771246	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200706
Project:	HS22070986	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200306-03	**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	7/21/22	7/21/22 14:22	403150	771246	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

July 22, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22070992**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Jul 20, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22070992

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22070992-01	LH18/24-SP650_071922	Water		19-Jul-2022 14:00	20-Jul-2022 10:05	☐
HS22070992-02	Trip Blank	Water	CG-061422-312	19-Jul-2022 14:00	20-Jul-2022 10:05	☐

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22070992

GCMS Volatiles by Method SW8260

Batch ID: R413493

Sample ID: HS22070893-08MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R413467

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

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070992
Sample ID: LH18/24-SP650_071922 Lab ID:HS22070992-01
Collection Date: 19-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	21-Jul-2022 13:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	21-Jul-2022 13:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	21-Jul-2022 13:25
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	21-Jul-2022 13:25
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	21-Jul-2022 13:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25

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

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22070992
Sample ID: LH18/24-SP650_071922 Lab ID:HS22070992-01
Collection Date: 19-Jul-2022 14:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
cis-1,2-Dichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	21-Jul-2022 13:25
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	21-Jul-2022 13:25
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	21-Jul-2022 13:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:25
Surr: 1,2-Dichloroethane-d4	*94.7*			**0**	*81-118*	*%REC*	*1*	*21-Jul-2022 13:25*
Surr: 4-Bromofluorobenzene	*95.5*			**0**	*85-114*	*%REC*	*1*	*21-Jul-2022 13:25*
Surr: Dibromofluoromethane	*94.0*			**0**	*80-119*	*%REC*	*1*	*21-Jul-2022 13:25*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*21-Jul-2022 13:25*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,030**		**4.00**	**10.0**	**10.0**	**mg/L**	20	21-Jul-2022 11:01
Sulfate	**19.9**		**0.200**	**0.500**	**0.500**	**mg/L**	1	21-Jul-2022 12:05

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

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:HS22070992
Sample ID: Trip Blank
Lab ID:HS22070992-02
Collection Date: 19-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	21-Jul-2022 13:04
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	21-Jul-2022 13:04
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	21-Jul-2022 13:04
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	21-Jul-2022 13:04
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	21-Jul-2022 13:04
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04

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

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:HS22070992
Sample ID: Trip Blank
Lab ID:HS22070992-02
Collection Date: 19-Jul-2022 14:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	21-Jul-2022 13:04
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	21-Jul-2022 13:04
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	21-Jul-2022 13:04
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	21-Jul-2022 13:04
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	21-Jul-2022 13:04
Surr: 1,2-Dichloroethane-d4	*93.0*			**0**	*81-118*	*%REC*	*1*	*21-Jul-2022 13:04*
Surr: 4-Bromofluorobenzene	*96.7*			**0**	*85-114*	*%REC*	*1*	*21-Jul-2022 13:04*
Surr: Dibromofluoromethane	*95.7*			**0**	*80-119*	*%REC*	*1*	*21-Jul-2022 13:04*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*21-Jul-2022 13:04*

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

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R413467 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22070992-01	LH18/24-SP650_071922	19 Jul 2022 14:00			21 Jul 2022 12:05	1
HS22070992-01	LH18/24-SP650_071922	19 Jul 2022 14:00			21 Jul 2022 11:01	20
Batch ID: R413493 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22070992-01	LH18/24-SP650_071922	19 Jul 2022 14:00			21 Jul 2022 13:25	1
HS22070992-02	Trip Blank	19 Jul 2022 14:00			21 Jul 2022 13:04	1

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220721** Units: **ug/L** Analysis Date: **21-Jul-2022 12:38**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220721** Units: **ug/L** Analysis Date: **21-Jul-2022 12:38**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*47.06*	*1.0*	*50*	*0*	*94.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.03*	*1.0*	*50*	*0*	*96.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.59*	*1.0*	*50*	*0*	*95.2*	*80 - 119*				
Surr: Toluene-d8	*53.79*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220721** Units: **ug/L** Analysis Date: **21-Jul-2022 11:56**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759273** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.5	78 - 124				
1,1,1-Trichloroethane	19.08	1.0	20	0	95.4	74 - 131				
1,1,2,2-Tetrachloroethane	19.38	1.0	20	0	96.9	71 - 121				
1,1,2-Trichloroethane	19.36	1.0	20	0	96.8	80 - 119				
1,1-Dichloroethane	19.8	1.0	20	0	99.0	77 - 125				
1,1-Dichloroethene	18.2	1.0	20	0	91.0	71 - 131				
1,1-Dichloropropene	18.78	1.0	20	0	93.9	78 - 125				
1,2,3-Trichlorobenzene	20.88	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	20.47	1.0	20	0	102	73 - 122				
1,2,4-Trichlorobenzene	20.3	1.0	20	0	102	69 - 130				
1,2,4-Trimethylbenzene	19.85	1.0	20	0	99.2	76 - 124				
1,2-Dibromo-3-chloropropane	20.08	1.0	20	0	100	62 - 128				
1,2-Dibromoethane	19.95	1.0	20	0	99.8	77 - 121				
1,2-Dichlorobenzene	19.61	1.0	20	0	98.0	80 - 119				
1,2-Dichloroethane	20.11	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	19.72	1.0	20	0	98.6	78 - 122				
1,3,5-Trimethylbenzene	19.64	1.0	20	0	98.2	75 - 124				
1,3-Dichlorobenzene	20.08	1.0	20	0	100	80 - 119				
1,3-Dichloropropane	19.66	1.0	20	0	98.3	80 - 119				
1,4-Dichlorobenzene	19.62	1.0	20	0	98.1	79 - 118				
2,2-Dichloropropane	19.64	1.0	20	0	98.2	60 - 139				
2-Butanone	37.06	2.0	40	0	92.6	56 - 143				
2-Chlorotoluene	19.12	1.0	20	0	95.6	79 - 122				
2-Hexanone	40.3	2.0	40	0	101	57 - 139				
4-Chlorotoluene	19.72	1.0	20	0	98.6	78 - 122				
4-Isopropyltoluene	19.75	1.0	20	0	98.8	77 - 127				
4-Methyl-2-pentanone	40.51	2.0	40	0	101	67 - 130				
Acetone	48.23	2.0	40	0	121	39 - 160				
Benzene	19.38	1.0	20	0	96.9	79 - 120				
Bromobenzene	20.18	1.0	20	0	101	80 - 120				
Bromochloromethane	19.19	1.0	20	0	95.9	78 - 123				
Bromodichloromethane	20.41	1.0	20	0	102	79 - 125				
Bromoform	19	1.0	20	0	95.0	66 - 130				
Bromomethane	20.7	1.0	20	0	104	53 - 141				

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220721** Units: **ug/L** Analysis Date: **21-Jul-2022 11:56**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759273** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.08	2.0	40	0	95.2	64 - 133				
Carbon tetrachloride	17.63	1.0	20	0	88.2	72 - 136				
Chlorobenzene	20.02	1.0	20	0	100	82 - 118				
Chloroethane	19.54	1.0	20	0	97.7	60 - 138				
Chloroform	19.75	1.0	20	0	98.8	79 - 124				
Chloromethane	20.33	1.0	20	0	102	50 - 139				
cis-1,2-Dichloroethene	20.29	1.0	20	0	101	78 - 123				
cis-1,3-Dichloropropene	20.29	1.0	20	0	101	75 - 124				
Dibromochloromethane	19.86	1.0	20	0	99.3	74 - 126				
Dibromomethane	19.77	1.0	20	0	98.9	79 - 123				
Dichlorodifluoromethane	17.74	1.0	20	0	88.7	32 - 152				
Ethylbenzene	19.89	1.0	20	0	99.5	79 - 121				
Hexachlorobutadiene	19.39	1.0	20	0	96.9	66 - 134				
Isopropylbenzene	19.25	1.0	20	0	96.2	72 - 131				
m,p-Xylene	39.98	2.0	40	0	100.0	80 - 121				
Methylene chloride	21.04	2.0	20	0	105	74 - 124				
Naphthalene	18.66	1.0	20	0	93.3	61 - 128				
n-Butylbenzene	19.79	1.0	20	0	98.9	75 - 128				
n-Propylbenzene	19.91	1.0	20	0	99.5	76 - 126				
o-Xylene	19.86	1.0	20	0	99.3	78 - 122				
sec-Butylbenzene	18.89	1.0	20	0	94.4	77 - 126				
Styrene	20.12	1.0	20	0	101	78 - 123				
tert-Butylbenzene	19.31	1.0	20	0	96.5	78 - 124				
Tetrachloroethene	19.1	1.0	20	0	95.5	74 - 129				
Toluene	19.6	1.0	20	0	98.0	80 - 121				
trans-1,2-Dichloroethene	19.58	1.0	20	0	97.9	75 - 124				
trans-1,3-Dichloropropene	20.08	1.0	20	0	100	73 - 127				
Trichloroethene	19.79	1.0	20	0	99.0	79 - 123				
Trichlorofluoromethane	17.56	1.0	20	0	87.8	65 - 141				
Vinyl chloride	18.3	1.0	20	0	91.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.07*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.74*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*53.95*	*1.0*	*50*	*0*	*108*	*80 - 119*				
Surr: Toluene-d8	*52.14*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070893-08MS** Units: **ug/L** Analysis Date: **21-Jul-2022 20:05**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	23.15	1.0	20	0	116	78 - 124				
1,1,1-Trichloroethane	22.09	1.0	20	0	110	74 - 131				
1,1,2,2-Tetrachloroethane	22.58	1.0	20	0	113	71 - 121				
1,1,2-Trichloroethane	22.79	1.0	20	0	114	80 - 119				
1,1-Dichloroethane	21.06	1.0	20	0	105	77 - 125				
1,1-Dichloroethene	21.71	1.0	20	0	109	71 - 131				
1,1-Dichloropropene	22.78	1.0	20	0	114	78 - 125				
1,2,3-Trichlorobenzene	21.15	1.0	20	0	106	69 - 129				
1,2,3-Trichloropropane	23.53	1.0	20	0	118	73 - 122				
1,2,4-Trichlorobenzene	22.67	1.0	20	0	113	69 - 130				
1,2,4-Trimethylbenzene	25.65	1.0	20	1.857	119	76 - 124				
1,2-Dibromo-3-chloropropane	22.8	1.0	20	0	114	62 - 128				
1,2-Dibromoethane	23.25	1.0	20	0	116	77 - 121				
1,2-Dichlorobenzene	23.56	1.0	20	0	118	80 - 119				
1,2-Dichloroethane	22.52	1.0	20	0	113	73 - 128				
1,2-Dichloropropane	21.83	1.0	20	0	109	78 - 122				
1,3,5-Trimethylbenzene	24.5	1.0	20	0.9016	118	75 - 124				
1,3-Dichlorobenzene	23.18	1.0	20	0	116	80 - 119				
1,3-Dichloropropane	22.63	1.0	20	0	113	80 - 119				
1,4-Dichlorobenzene	22.73	1.0	20	0	114	79 - 118				
2,2-Dichloropropane	20.7	1.0	20	0	104	60 - 139				
2-Butanone	39.14	2.0	40	0	97.9	56 - 143				
2-Chlorotoluene	23.65	1.0	20	0	118	79 - 122				
2-Hexanone	48.23	2.0	40	0	121	57 - 139				
4-Chlorotoluene	23.33	1.0	20	0	117	78 - 122				
4-Isopropyltoluene	25.63	1.0	20	0	128	77 - 127				S
4-Methyl-2-pentanone	49.68	2.0	40	0	124	67 - 130				
Acetone	41.21	2.0	40	0	103	39 - 160				
Benzene	45.97	1.0	20	23.53	112	79 - 120				
Bromobenzene	23	1.0	20	0	115	80 - 120				
Bromochloromethane	20.27	1.0	20	0	101	78 - 123				
Bromodichloromethane	22.32	1.0	20	0	112	79 - 125				
Bromoform	21.62	1.0	20	0	108	66 - 130				
Bromomethane	15.41	1.0	20	0	77.1	53 - 141				

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22070893-08MS** Units: **ug/L** Analysis Date: **21-Jul-2022 20:05**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	45.29	2.0	40	0	113	64 - 133				
Carbon tetrachloride	22.88	1.0	20	0	114	72 - 136				
Chlorobenzene	23.17	1.0	20	0	116	82 - 118				
Chloroethane	18.45	1.0	20	0	92.2	60 - 138				
Chloroform	21.69	1.0	20	0	108	79 - 124				
Chloromethane	36.63	1.0	20	0	183	50 - 139				S
cis-1,2-Dichloroethene	21.57	1.0	20	0	108	78 - 123				
cis-1,3-Dichloropropene	22	1.0	20	0	110	75 - 124				
Dibromochloromethane	22.62	1.0	20	0	113	74 - 126				
Dibromomethane	22.24	1.0	20	0	111	79 - 123				
Dichlorodifluoromethane	19.81	1.0	20	0	99.1	32 - 152				
Ethylbenzene	36.17	1.0	20	12.65	118	79 - 121				
Hexachlorobutadiene	21.68	1.0	20	0	108	66 - 134				
Isopropylbenzene	103.6	1.0	20	81.82	109	72 - 131				O
m,p-Xylene	49.36	2.0	40	1.748	119	80 - 121				
Methylene chloride	21.84	2.0	20	0	109	74 - 124				
Naphthalene	36.51	1.0	20	13.4	116	61 - 128				
n-Butylbenzene	34.77	1.0	20	10.53	121	75 - 128				
n-Propylbenzene	188.1	1.0	20	174.5	68.0	76 - 126				SO
o-Xylene	24.04	1.0	20	0.9334	116	78 - 122				
sec-Butylbenzene	30.79	1.0	20	7.133	118	77 - 126				
Styrene	23.26	1.0	20	0	116	78 - 123				
tert-Butylbenzene	24.21	1.0	20	0	121	78 - 124				
Tetrachloroethene	23.39	1.0	20	0	117	74 - 129				
Toluene	29.37	1.0	20	6.413	115	80 - 121				
trans-1,2-Dichloroethene	21.35	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	21.33	1.0	20	0	107	73 - 127				
Trichloroethene	22.47	1.0	20	0	112	79 - 123				
Trichlorofluoromethane	21.85	1.0	20	0	109	65 - 141				
Vinyl chloride	20.78	1.0	20	0	104	58 - 137				
Surr: 1,2-Dichloroethane-d4	*47.44*	*1.0*	*50*	*0*	*94.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.67*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*48.36*	*1.0*	*50*	*0*	*96.7*	*80 - 119*				
Surr: Toluene-d8	*52.73*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070893-08MSD** Units: **ug/L** Analysis Date: **21-Jul-2022 20:26**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.16	1.0	20	0	106	78 - 124	23.15	8.97	20	
1,1,1-Trichloroethane	19.9	1.0	20	0	99.5	74 - 131	22.09	10.5	20	
1,1,2,2-Tetrachloroethane	20.98	1.0	20	0	105	71 - 121	22.58	7.37	20	
1,1,2-Trichloroethane	20.96	1.0	20	0	105	80 - 119	22.79	8.39	20	
1,1-Dichloroethane	19.47	1.0	20	0	97.4	77 - 125	21.06	7.86	20	
1,1-Dichloroethene	19.54	1.0	20	0	97.7	71 - 131	21.71	10.5	20	
1,1-Dichloropropene	21.16	1.0	20	0	106	78 - 125	22.78	7.38	20	
1,2,3-Trichlorobenzene	22.7	1.0	20	0	113	69 - 129	21.15	7.04	20	
1,2,3-Trichloropropane	20.79	1.0	20	0	104	73 - 122	23.53	12.4	20	
1,2,4-Trichlorobenzene	22.99	1.0	20	0	115	69 - 130	22.67	1.41	20	
1,2,4-Trimethylbenzene	23.04	1.0	20	1.857	106	76 - 124	25.65	10.7	20	
1,2-Dibromo-3-chloropropane	24.68	1.0	20	0	123	62 - 128	22.8	7.91	20	
1,2-Dibromoethane	21.21	1.0	20	0	106	77 - 121	23.25	9.18	20	
1,2-Dichlorobenzene	21.57	1.0	20	0	108	80 - 119	23.56	8.81	20	
1,2-Dichloroethane	20.67	1.0	20	0	103	73 - 128	22.52	8.58	20	
1,2-Dichloropropane	19.9	1.0	20	0	99.5	78 - 122	21.83	9.27	20	
1,3,5-Trimethylbenzene	22.11	1.0	20	0.9016	106	75 - 124	24.5	10.2	20	
1,3-Dichlorobenzene	21.18	1.0	20	0	106	80 - 119	23.18	8.99	20	
1,3-Dichloropropane	20.76	1.0	20	0	104	80 - 119	22.63	8.6	20	
1,4-Dichlorobenzene	21.07	1.0	20	0	105	79 - 118	22.73	7.58	20	
2,2-Dichloropropane	18.94	1.0	20	0	94.7	60 - 139	20.7	8.88	20	
2-Butanone	37.4	2.0	40	0	93.5	56 - 143	39.14	4.57	20	
2-Chlorotoluene	21.3	1.0	20	0	106	79 - 122	23.65	10.5	20	
2-Hexanone	44.94	2.0	40	0	112	57 - 139	48.23	7.07	20	
4-Chlorotoluene	21.12	1.0	20	0	106	78 - 122	23.33	9.91	20	
4-Isopropyltoluene	23.57	1.0	20	0	118	77 - 127	25.63	8.36	20	
4-Methyl-2-pentanone	46.23	2.0	40	0	116	67 - 130	49.68	7.2	20	
Acetone	39.89	2.0	40	0	99.7	39 - 160	41.21	3.26	20	
Benzene	42.12	1.0	20	23.53	93.0	79 - 120	45.97	8.74	20	
Bromobenzene	20.96	1.0	20	0	105	80 - 120	23	9.28	20	
Bromochloromethane	18.73	1.0	20	0	93.6	78 - 123	20.27	7.93	20	
Bromodichloromethane	20.57	1.0	20	0	103	79 - 125	22.32	8.17	20	
Bromoform	19.8	1.0	20	0	99.0	66 - 130	21.62	8.81	20	
Bromomethane	12.46	1.0	20	0	62.3	53 - 141	15.41	21.2	20	R

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413493 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22070893-08MSD** Units: **ug/L** Analysis Date: **21-Jul-2022 20:26**
Client ID: Run ID: **VOA6_413493** SeqNo: **6759296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	41.07	2.0	40	0	103	64 - 133	45.29	9.79	20	
Carbon tetrachloride	20.82	1.0	20	0	104	72 - 136	22.88	9.44	20	
Chlorobenzene	21.16	1.0	20	0	106	82 - 118	23.17	9.07	20	
Chloroethane	16.41	1.0	20	0	82.0	60 - 138	18.45	11.7	20	
Chloroform	19.79	1.0	20	0	99.0	79 - 124	21.69	9.16	20	
Chloromethane	32.21	1.0	20	0	161	50 - 139	36.63	12.8	20	S
cis-1,2-Dichloroethene	19.4	1.0	20	0	97.0	78 - 123	21.57	10.6	20	
cis-1,3-Dichloropropene	19.9	1.0	20	0	99.5	75 - 124	22	10	20	
Dibromochloromethane	20.86	1.0	20	0	104	74 - 126	22.62	8.11	20	
Dibromomethane	20.62	1.0	20	0	103	79 - 123	22.24	7.57	20	
Dichlorodifluoromethane	18.17	1.0	20	0	90.9	32 - 152	19.81	8.63	20	
Ethylbenzene	33	1.0	20	12.65	102	79 - 121	36.17	9.14	20	
Hexachlorobutadiene	20.78	1.0	20	0	104	66 - 134	21.68	4.27	20	
Isopropylbenzene	94.55	1.0	20	81.82	63.6	72 - 131	103.6	9.1	20	SO
m,p-Xylene	44.98	2.0	40	1.748	108	80 - 121	49.36	9.28	20	
Methylene chloride	20.33	2.0	20	0	102	74 - 124	21.84	7.15	20	
Naphthalene	37.68	1.0	20	13.4	121	61 - 128	36.51	3.15	20	
n-Butylbenzene	32.03	1.0	20	10.53	108	75 - 128	34.77	8.2	20	
n-Propylbenzene	171.5	1.0	20	174.5	-15.1	76 - 126	188.1	9.25	20	SO
o-Xylene	22.01	1.0	20	0.9334	105	78 - 122	24.04	8.79	20	
sec-Butylbenzene	28.11	1.0	20	7.133	105	77 - 126	30.79	9.09	20	
Styrene	21.31	1.0	20	0	107	78 - 123	23.26	8.74	20	
tert-Butylbenzene	21.82	1.0	20	0	109	78 - 124	24.21	10.4	20	
Tetrachloroethene	20.98	1.0	20	0	105	74 - 129	23.39	10.9	20	
Toluene	26.59	1.0	20	6.413	101	80 - 121	29.37	9.94	20	
trans-1,2-Dichloroethene	19.92	1.0	20	0	99.6	75 - 124	21.35	6.9	20	
trans-1,3-Dichloropropene	20.13	1.0	20	0	101	73 - 127	21.33	5.78	20	
Trichloroethene	20.46	1.0	20	0	102	79 - 123	22.47	9.37	20	
Trichlorofluoromethane	19.83	1.0	20	0	99.1	65 - 141	21.85	9.72	20	
Vinyl chloride	17.8	1.0	20	0	89.0	58 - 137	20.78	15.4	20	
Surr: 1,2-Dichloroethane-d4	*46.01*	*1.0*	*50*	*0*	*92.0*	*81 - 118*	*47.44*	*3.06*	*20*	
Surr: 4-Bromofluorobenzene	*52.05*	*1.0*	*50*	*0*	*104*	*85 - 114*	*51.67*	*0.742*	*20*	
Surr: Dibromofluoromethane	*47.31*	*1.0*	*50*	*0*	*94.6*	*80 - 119*	*48.36*	*2.19*	*20*	
Surr: Toluene-d8	*52.17*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.73*	*1.08*	*20*	

ALS Houston, US Date: 22-Jul-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22070992

QC BATCH REPORT

Batch ID:	**R413493 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22070992-01	HS22070992-02

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22070992

QC BATCH REPORT

Batch ID: R413467 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **21-Jul-2022 10:13**
Client ID: Run ID: **ICS-Integrion_413467** SeqNo: **6758620** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **21-Jul-2022 10:19**
Client ID: Run ID: **ICS-Integrion_413467** SeqNo: **6758621** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.81	0.500	20	0	99.1	80 - 120				
Sulfate	19.52	0.500	20	0	97.6	80 - 120				

MS Sample ID: **HS22070651-03MS** Units: **mg/L** Analysis Date: **21-Jul-2022 10:29**
Client ID: Run ID: **ICS-Integrion_413467** SeqNo: **6758623** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.83	0.500	10	10.55	103	80 - 120				
Sulfate	12.26	0.500	10	2.082	102	80 - 120				

MSD Sample ID: **HS22070651-03MSD** Units: **mg/L** Analysis Date: **21-Jul-2022 10:34**
Client ID: Run ID: **ICS-Integrion_413467** SeqNo: **6758624** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.82	0.500	10	10.55	103	80 - 120	20.83	0.0912	20	
Sulfate	12.23	0.500	10	2.082	101	80 - 120	12.26	0.31	20	

The following samples were analyzed in this batch: HS22070992-01

ALS Houston, US Date: 22-Jul-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22070992**

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
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

ALS Houston, US Date: 22-Jul-22

Sample Receipt Checklist

Work Order ID: HS22070992 **Date/Time Received:** **20-Jul-2022 10:05**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: /S/ Paresh M. Giga (eSignature) 20-Jul-2022 12:32 (Date/Time) **Reviewed by:** /S/ Dane J. Wacasey (eSignature) 22-Jul-2022 11:08 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	2.7C/3.2C U/C	IR31	
Cooler(s)/Kit(s):	Blue		
Date/Time sample(s) sent to storage:	7/20/22 12:40		
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 ATTN: Dane Wacasey

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

Project No.
NWO1312.0150.0 16.0001

Job:
GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O Number

HS22070992

Bhate Environmental Associates, Inc.
.onghorn GW Treatment Plant Bi-Weekly Samples

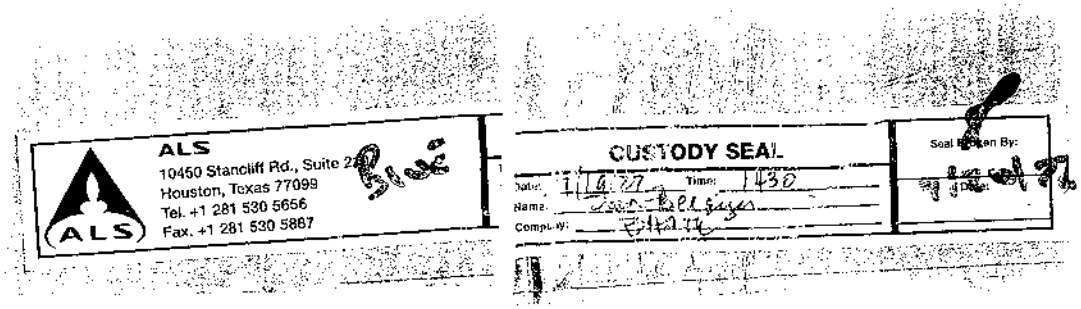
Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_071922	Water	07/19/22 / 14:00		3	3		HCL	
LH18/24-SP650_071922	Water	07/19/22 / 14:00		1		1	NONE	
Trip Blank	Water	07/19/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/19/22	14:30		7/20/22	10:05						

U/C:
Blu: 2.7°
#31
C(1-0.5)°

(Word) S:\1-ces\Forms\Chain of Custody - Bi\Weekly


ALS
10450 Stancliff Rd., Suite 2
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
ALS
CUSTODY SEAL
Time: 1430
Name:
Company:
Seal Broken By:


TRK# 0838 9472
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

August 04, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22071367**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Jul 27, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22071367

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22071367-01	LH18/24-SP650_072622	Water		26-Jul-2022 13:00	27-Jul-2022 10:05	☐
HS22071367-02	LH18/24-SP650_072622_AIX	Water		26-Jul-2022 13:00	27-Jul-2022 10:05	☐
HS22071367-03	LH18/24-SP650_072622_BIX	Water		26-Jul-2022 13:00	27-Jul-2022 10:05	☐

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22071367

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R414326

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

WetChemistry by Method E415.1

Batch ID: R414298

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

WetChemistry by Method E365.3

Batch ID: R413955

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

ALS Houston, US

Date: 04-Aug-22

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS22071367
Sample ID:	LH18/24-SP650_072622	Lab ID:HS22071367-01
Collection Date:	26-Jul-2022 13:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**17**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	03-Aug-2022 11:40
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: AP
Phosphorus, Total Orthophosphate (As P)	**2.90**	a	**0.250**	**0.312**	**0.625**	**mg/L**	25	28-Jul-2022 10:09
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**24.3**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	02-Aug-2022 18:48

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

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22071367
Sample ID: LH18/24-SP650_072622_AIX Lab ID:HS22071367-02
Collection Date: 26-Jul-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	03-Aug-2022 18:18

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

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22071367
Sample ID: LH18/24-SP650_072622_BIX Lab ID:HS22071367-03
Collection Date: 26-Jul-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	03-Aug-2022 18:18

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

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22071367

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R413955 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22071367-01	LH18/24-SP650_072622	26 Jul 2022 13:00			28 Jul 2022 10:09	25
Batch ID: R414298 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22071367-01	LH18/24-SP650_072622	26 Jul 2022 13:00			02 Aug 2022 18:48	1
Batch ID: R414326 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22071367-01	LH18/24-SP650_072622	26 Jul 2022 13:00			03 Aug 2022 11:40	1
Batch ID: R414377 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22071367-02	LH18/24-SP650_072622_AIX	26 Jul 2022 13:00			03 Aug 2022 18:18	1
HS22071367-03	LH18/24-SP650_072622_BIX	26 Jul 2022 13:00			03 Aug 2022 18:18	1

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22071367

QC BATCH REPORT

Batch ID: R413955 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R413955** Units: **mg/L** Analysis Date: **28-Jul-2022 10:09**
Client ID: Run ID: **UV-2450_413955** SeqNo: **6771395** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R413955** Units: **mg/L** Analysis Date: **28-Jul-2022 10:09**
Client ID: Run ID: **UV-2450_413955** SeqNo: **6771394** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.264	0.0250	0.25	0	106	85 - 115				

MS Sample ID: **HS22071367-01MS** Units: **mg/L** Analysis Date: **28-Jul-2022 10:09**
Client ID: **LH18/24-SP650_072622** Run ID: **UV-2450_413955** SeqNo: **6771397** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	9.2	0.625	6.25	2.9	101	80 - 120				

MSD Sample ID: **HS22071367-01MSD** Units: **mg/L** Analysis Date: **28-Jul-2022 10:09**
Client ID: **LH18/24-SP650_072622** Run ID: **UV-2450_413955** SeqNo: **6771396** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	9.425	0.625	6.25	2.9	104	80 - 120	9.2	2.42	20	

The following samples were analyzed in this batch: HS22071367-01

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22071367

QC BATCH REPORT

Batch ID: R414298 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-08022022** Units: **mg/L** Analysis Date: **02-Aug-2022 18:09**
Client ID: Run ID: **TOC_04_414298** SeqNo: **6784066** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-08022022** Units: **mg/L** Analysis Date: **02-Aug-2022 18:23**
Client ID: Run ID: **TOC_04_414298** SeqNo: **6784067** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.526	1.00	10	0	95.3	85 - 115				

LCSD Sample ID: **LCSD-08022022** Units: **mg/L** Analysis Date: **02-Aug-2022 18:37**
Client ID: Run ID: **TOC_04_414298** SeqNo: **6784068** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.58	1.00	10	0	95.8	85 - 115	9.526	0.565	20	

MS Sample ID: **HS22071367-01MS** Units: **mg/L** Analysis Date: **02-Aug-2022 19:00**
Client ID: **LH18/24-SP650_072622** Run ID: **TOC_04_414298** SeqNo: **6784070** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	35.64	1.00	10	24.29	114	80 - 120				

The following samples were analyzed in this batch: HS22071367-01

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22071367

QC BATCH REPORT

Batch ID: R414326 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R414326** Units: **mg/L** Analysis Date: **03-Aug-2022 11:40**
Client ID: Run ID: **WetChem_HS_414326** SeqNo: **6784405** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R414326** Units: **mg/L** Analysis Date: **03-Aug-2022 11:40**
Client ID: Run ID: **WetChem_HS_414326** SeqNo: **6784404** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.987	0.20	10	0	99.9	80 - 120				

MS Sample ID: **HS22071314-01MS** Units: **mg/L** Analysis Date: **03-Aug-2022 11:40**
Client ID: Run ID: **WetChem_HS_414326** SeqNo: **6784409** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.62	0.20	10	0.761	98.6	80 - 120				

MSD Sample ID: **HS22071314-01MSD** Units: **mg/L** Analysis Date: **03-Aug-2022 11:40**
Client ID: Run ID: **WetChem_HS_414326** SeqNo: **6784408** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.61	0.20	10	0.761	98.5	80 - 120	10.62	0.0565	20	

The following samples were analyzed in this batch: HS22071367-01

ALS Houston, US Date: 04-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22071367**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 04-Aug-22

Sample Receipt Checklist

Work Order ID: HS22071367 **Date/Time Received:** **27-Jul-2022 10:05**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Pablo Marinez	27-Jul-2022 12:17	**Reviewed by:**	/S/ Ragen Giga	02-Aug-2022 08:44
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	0.8°C/1.3°C UC/C	IR 31
Cooler(s)/Kit(s):	48581	
Date/Time sample(s) sent to storage:	7/27/22 12:20	

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:

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: Dane Wacasey

HS22071367

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_072622	Water	07/26/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_072622	Water	07/26/22 / 13:00		1			X		NONE	
LH18/24-SP650_072622_AIX	Water	07/26/22 / 13:00		1				X	NONE	
LH18/24-SP650_072622_BIX	Water	07/26/22 / 13:00		1				X	NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	07/26/22	13:30		7/27/22	16:05						

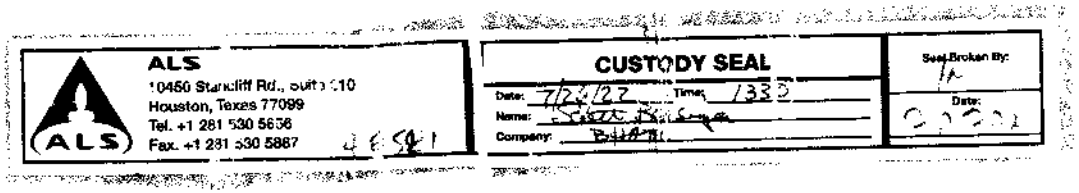
For Lab Use Only

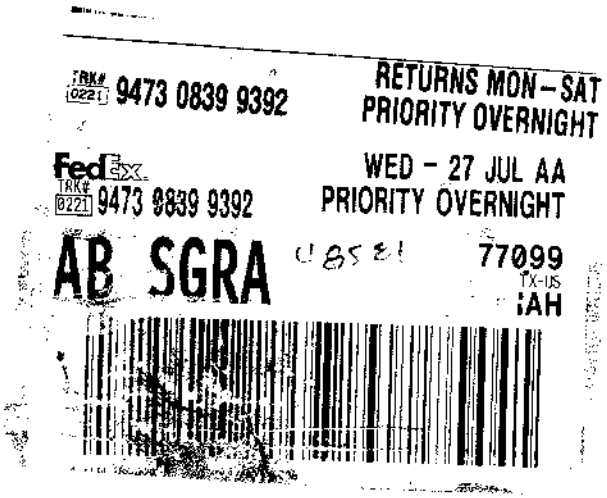
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

4850 0.2c IK7 1645

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


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUSTODY SEAL
Date: 7/27/22
Time: 1335
Name:
Company:
Seal Broken By:
Date:


TRK# 9473 0839 9392
RETURNS MON – SAT
PRIORITY OVERNIGHT
FedEx
TRK# 9473 9839 9392
WED – 27 JUL AA
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
HAH

August 03, 2022 Service Request No:E2200724

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22071367

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory July 27, 2022
For your reference, these analyses have been assigned our service request number **E2200724.**

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

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	**Service Request No.:**	E2200724
Project:	HS22071367	**Date Received:**	07/27/22
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

Two samples were received for analysis at ALS Environmental in Houston on 07/27/22.

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:

EQ2200320: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries met acceptance criteria.

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:**E2200724
Project: HS22071367

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200724-001	LH18/24-SP650_072622_AIX	7/26/2022	1300
E2200724-002	LH18/24-SP650_072622_BIX	7/26/2022	1300

Service Request Summary

Folder #: **E2200724**
Client Name: ALS Environmental - US
Project Name: HS22071367
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/27/22
Internal Due Date: 8/3/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22071367
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200724-001	LH18/24-SP650_072622_AIX	Water	07/26/22 1300	**IV**
E2200724-002	LH18/24-SP650_072622_BIX	Water	07/26/22 1300	**IV**

Service Request Summary

Folder #: **E2200724**
Client Name: ALS Environmental - US
Project Name: HS22071367
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 07/27/22
Internal Due Date: 8/3/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22071367
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	IV Due 8/17

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
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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:** **19272**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22071367
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22071367-02**	**LH18/24-SP650_072622_AIX**	**Water**	**26 Jul 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			03 Aug 2022
2.	**HS22071367-03**	**LH18/24-SP650_072622_BIX**	**Water**	**26 Jul 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			03 Aug 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: Paul Rm Date/Time: 72722 12:30

Received By: IVRE+G Date/Time: 7.27.22 12:4

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: IA

Client/Project: ALS-H

Thermometer ID: IR11

Date/Time Received: 7-27-22 Initials: IA

Date/Time Logged in: 7-27-22 Initials: IA

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 — If yes, how many and where?
   Were they intact? ○ Yes ○ No ☒ N/A
   Were they signed and dated? ○ Yes ○ No ☒ N/A

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		7-27-22	1230	IA	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

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#: 403546 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 7/28/22 10:15

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200724-001	LH18/24-SP650_072622_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200724-002	LH18/24-SP650_072622_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200725-001	EA-26_0322	.01	6850/ClO4			Water	10mL	
4	E2200725-002	CTC-51_0322	.01	6850/ClO4			Water	10mL	
5	E2200725-003	EA-46_0322	.01	6850/ClO4			Water	10mL	
6	E2200725-004	CTC-10_0322	.01	6850/ClO4			Water	10mL	
7	E2200725-005	CTC-23_0322	.01	6850/ClO4			Water	10mL	
8	E2200725-006	CTC-2_0322	.01	6850/ClO4			Water	10mL	
9	E2200725-007	CTC-3_0322	.01	6850/ClO4			Water	10mL	
10	E2200725-008	CTC-17_0322	.01	6850/ClO4			Water	10mL	
11	EQ2200320-01	MB		6850/ClO4 DOD			Liquid	10mL	
12	EQ2200320-02	LCS		6850/ClO4 DOD			Liquid	10mL	
13	EQ2200320-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200320-02	1.00µL	EQ2200320-02	1.00µL	EQ2200320-03	1.00µL	EQ2200320-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200724-001	100.00µL	E2200724-002	100.00µL	E2200725-001	100.00µL	E2200725-002	100.00µL	E2200725-003	100.00µL	E2200725-004	100.00µL
E2200725-005	100.00µL	E2200725-006	100.00µL	E2200725-007	100.00µL	E2200725-008	100.00µL	EQ2200320-01	100.00µL	EQ2200320-01	100.00µL
EQ2200320-02	100.00µL	EQ2200320-02	100.00µL	EQ2200320-03	100.00µL	EQ2200320-03	100.00µL				

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (222410)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 7/28/22 10:15
Finished: 7/28/22 10:45
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 403546
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 7/28/22 10:15

Comments:

Reviewed By: GR Date: 7/28/22

Chain of Custody

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

Analytical Results

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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:**	E2200724
Project:	HS22071367	**Date Collected:**	7/26/22 1300
Sample Matrix:	Water	**Date Received:**	7/27/22
Sample Name:	LH18/24-SP650_072622_AIX	**Units:**	µg/L
Lab Code:	E2200724-001	**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	**0.0476**	J	0.100	0.0500	0.0250	1	7/28/22	8/3/22 14:36	403546	772718	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200724
Project:	HS22071367	**Date Collected:**	7/26/22 1300
Sample Matrix:	Water	**Date Received:**	7/27/22
Sample Name:	LH18/24-SP650_072622_BIX	**Units:**	µg/L
Lab Code:	E2200724-002	**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	**0.0964**	J	0.100	0.0500	0.0250	1	7/28/22	8/3/22 14:45	403546	772718	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200724
Project:	HS22071367	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200320-01	**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	7/28/22	8/3/22 13:37	403546	772718	

Accuracy & Precision

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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: HS22071367
Sample Matrix: Water

Service Request: E2200724
Date Analyzed: 8/ 3/22

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: 403546

	Lab Control Sample EQ2200320-02			Duplicate Lab Control Sample EQ2200320-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.111	0.100	111	0.106	0.100	106	84 - 119	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:**	E2200724
Project:	HS22071367	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200320-02	**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	**0.111**		0.100	0.0500	0.0250	1	7/28/22	8/3/22 14:00	403546	772718	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200724
Project:	HS22071367	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200320-03	**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	**0.106**		0.100	0.0500	0.0250	1	7/28/22	8/3/22 14:18	403546	772718	

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August 12, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080124**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 03, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080124

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080124-01	LH18/24-SP650_080222	Water		02-Aug-2022 13:00	03-Aug-2022 09:35	☐
HS22080124-02	LH18/24-SP650_080222_AIX	Water		02-Aug-2022 13:00	03-Aug-2022 09:35	☐
HS22080124-03	LH18/24-SP650_080222_BIX	Water		02-Aug-2022 13:00	03-Aug-2022 09:35	☐

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080124

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R414748

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

WetChemistry by Method E415.1

Batch ID: R414563

Sample ID: HS22080213-01MS

- MS is for an unrelated sample

WetChemistry by Method E365.3

Batch ID: R414451

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

ALS Houston, US

Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22080124

Sample ID: LH18/24-SP650_080222

Lab ID:HS22080124-01

Collection Date: 02-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**18**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	09-Aug-2022 15:30
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**6.98**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	04-Aug-2022 12:20
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**17.4**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	05-Aug-2022 15:48

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

ALS Houston, US

Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22080124

Sample ID: LH18/24-SP650_080222_AIX

Lab ID:HS22080124-02

Collection Date: 02-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	12-Aug-2022 11:17

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

ALS Houston, US

Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22080124

Sample ID: LH18/24-SP650_080222_BIX

Lab ID:HS22080124-03

Collection Date: 02-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	12-Aug-2022 11:17

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

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080124

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R414451 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22080124-01	LH18/24-SP650_080222	02 Aug 2022 13:00			04 Aug 2022 12:20	10
Batch ID: R414563 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22080124-01	LH18/24-SP650_080222	02 Aug 2022 13:00			05 Aug 2022 15:48	1
Batch ID: R414748 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22080124-01	LH18/24-SP650_080222	02 Aug 2022 13:00			09 Aug 2022 15:30	1
Batch ID: R414942 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080124-02	LH18/24-SP650_080222_AIX	02 Aug 2022 13:00			12 Aug 2022 11:17	1
HS22080124-03	LH18/24-SP650_080222_BIX	02 Aug 2022 13:00			12 Aug 2022 11:17	1

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080124

QC BATCH REPORT

Batch ID: R414451 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R414451** Units: **mg/L** Analysis Date: **04-Aug-2022 12:20**
Client ID: Run ID: **UV-2450_414451** SeqNo: **6786981** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R414451** Units: **mg/L** Analysis Date: **04-Aug-2022 12:20**
Client ID: Run ID: **UV-2450_414451** SeqNo: **6786980** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.278	0.0250	0.25	0	111	85 - 115				

MS Sample ID: **HS22080124-01MS** Units: **mg/L** Analysis Date: **04-Aug-2022 12:20**
Client ID: **LH18/24-SP650_080222** Run ID: **UV-2450_414451** SeqNo: **6786983** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	9.34	0.250	2.5	6.98	94.4	80 - 120				

MSD Sample ID: **HS22080124-01MSD** Units: **mg/L** Analysis Date: **04-Aug-2022 12:20**
Client ID: **LH18/24-SP650_080222** Run ID: **UV-2450_414451** SeqNo: **6786982** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	9.32	0.250	2.5	6.98	93.6	80 - 120	9.34	0.214	20	

The following samples were analyzed in this batch: HS22080124-01

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080124

QC BATCH REPORT

Batch ID: R414563 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-08052022** Units: **mg/L** Analysis Date: **05-Aug-2022 15:09**
Client ID: Run ID: **TOC_04_414563** SeqNo: **6790167** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-08052022** Units: **mg/L** Analysis Date: **05-Aug-2022 15:23**
Client ID: Run ID: **TOC_04_414563** SeqNo: **6790168** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.711	1.00	10	0	97.1	85 - 115				

LCSD Sample ID: **LCSD-08052022** Units: **mg/L** Analysis Date: **05-Aug-2022 15:37**
Client ID: Run ID: **TOC_04_414563** SeqNo: **6790169** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.652	1.00	10	0	96.5	85 - 115	9.711	0.609	20	

MS Sample ID: **HS22080213-01MS** Units: **mg/L** Analysis Date: **05-Aug-2022 16:15**
Client ID: Run ID: **TOC_04_414563** SeqNo: **6790172** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	33.74	1.00	10	20.4	133	80 - 120				S

The following samples were analyzed in this batch: HS22080124-01

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080124

QC BATCH REPORT

Batch ID: R414748 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R414748** Units: **mg/L** Analysis Date: **09-Aug-2022 15:30**
Client ID: Run ID: **WetChem_HS_414748** SeqNo: **6794654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R414748** Units: **mg/L** Analysis Date: **09-Aug-2022 15:30**
Client ID: Run ID: **WetChem_HS_414748** SeqNo: **6794653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.13	0.20	10	0	101	80 - 120				

MS Sample ID: **HS22080414-01MS** Units: **mg/L** Analysis Date: **09-Aug-2022 15:30**
Client ID: Run ID: **WetChem_HS_414748** SeqNo: **6794656** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.4	0.20	10	0.882	95.2	80 - 120				

MSD Sample ID: **HS22080414-01MSD** Units: **mg/L** Analysis Date: **09-Aug-2022 15:30**
Client ID: Run ID: **WetChem_HS_414748** SeqNo: **6794655** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.4	0.20	10	0.882	95.2	80 - 120	10.4	0.00962	20	

The following samples were analyzed in this batch: HS22080124-01

ALS Houston, US Date: 12-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22080124**

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: 12-Aug-22

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 12-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080124 **Date/Time Received:** 03-Aug-2022 09:35

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By: /S/ Corey Grandits (eSignature) 03-Aug-2022 10:36 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 03-Aug-2022 15:24 (Date/Time)

Matrices: W 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 ☐	
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):	2.0UC/2.5C	IR31
Cooler(s)/Kit(s):	46409	
Date/Time sample(s) sent to storage:	8/3/2022	

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:

HS22080124

CHAIN OF CUSTODY

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

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Ar	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_080222	Water	08/02/22 / 13:00		3	X	X				H2SO4	
LH18/24-SP650_080222	Water	08/02/22 / 13:00		1			X			NONE	
LH18/24-SP650_080222_AIX	Water	08/02/22 / 13:00		1				X		NONE	
LH18/24-SP650_080222_BIX	Water	08/02/22 / 13:00		1				X		NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/02/22	13:30		8.3.22	0935						

For Lab Use Only

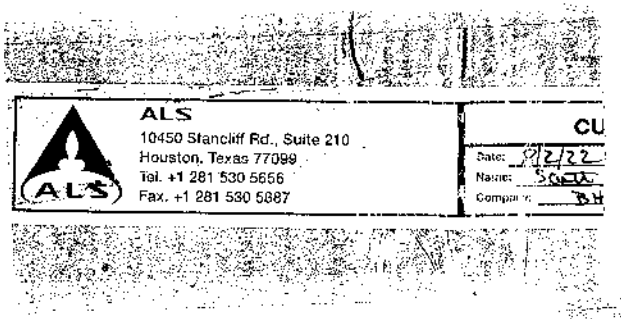
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

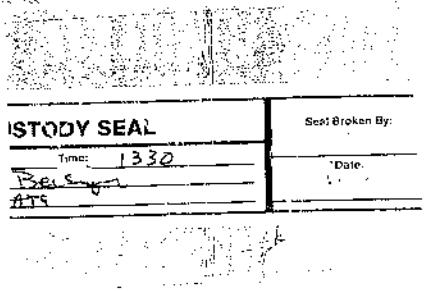
Remarks:

464109 2.0°
1821

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


FedEx
Express
E
AB SGRA
77099
TX-US
IAH


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


STODY SEAL
Time: 1330
Seal Broken By:
Date:

August 10, 2022 Service Request No:E2200756

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22080124

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 03, 2022
For your reference, these analyses have been assigned our service request number **E2200756.**

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 Environmental - US	**Service Request No.:**	E2200756
Project:	HS22080124	**Date Received:**	08/03/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 08/03/22.

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:

EQ2200338-02: 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 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:**E2200756

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200756-001	LH18/24-SP650_080222_AIX	8/02/2022	1400
E2200756-002	LH18/24-SP650_080222_BIX	8/02/2022	1400

Service Request Summary

Folder #: **E2200756**
Client Name: ALS Environmental - US
Project Name:
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
281-575-2190

Phone Number: 281-530-5887
Cell Number: dane.wacasey@alsglobal.com
Fax Number:
E-mail:

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/03/22
Internal Due Date: 8/10/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number:
EDD:

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200756-001	LH18/24-SP650_080222_AIX	Water	08/02/22 1400	**IV**
E2200756-002	LH18/24-SP650_080222_BIX	Water	08/02/221400	**IV**

Service Request Summary

Folder #: **E2200756**
Client Name: ALS Environmental - US
Project Name:
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
281-575-2190

Phone Number: 281-530-5887
Cell Number: dane.wacasey@alsglobal.com
Fax Number:
E-mail:

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/03/22
Internal Due Date: 8/10/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number:
EDD:

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	IV Due 8/24

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

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: 19307**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080124
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080124-02**	**LH18/24-SP650_080222_AIX**	**Water**	**02 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			10 Aug 2022
2.	**HS22080124-03**	**LH18/24-SP650_080222_BIX**	**Water**	**02 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			10 Aug 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: Torrey L Date/Time: 8/3/22 1600

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CA

Client/Project ALS

Thermometer ID IR21

Date/Time Received: 8.3.22 Initials: CA

Date/Time Logged in: 8.3.22 Initials CA

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		8.3.22	1600	CA	5.1	☒
						☐
						☐
						☐

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#: 404146 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 8/8/22 10:08

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200753-001	04WW07-220802	.01	6850/ClO4 DOD			Water	10mL	
2	E2200753-002	04WW09-220802	.01	6850/ClO4 DOD			Water	10mL	
3	E2200753-003	04WW10-220802	.01	6850/ClO4 DOD			Water	10mL	
4	E2200753-004	04WW04-220802	.01	6850/ClO4 DOD			Water	10mL	
5	E2200753-005	04WW05-220802	.01	6850/ClO4 DOD			Water	10mL	
6	E2200753-006	04WW05-220802-FD	.01	6850/ClO4 DOD			Water	10mL	
7	E2200753-007	04WW11-220802	.01	6850/ClO4 DOD			Water	10mL	
8	E2200753-008	04WW01-220802	.01	6850/ClO4 DOD			Water	10mL	
9	E2200756-001	LH18/24-SP650_080222_AIX	.01	6850/ClO4 DOD			Water	10mL	
10	E2200756-002	LH18/24-SP650_080222_BIX	.01	6850/ClO4 DOD			Water	10mL	
11	EQ2200338-01	MB		6850/ClO4 DOD			Liquid	10mL	
12	EQ2200338-02	LCS		6850/ClO4 DOD			Liquid	10mL	
13	EQ2200338-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
14	EQ2200338-04	04WW11-220802 MS	.01	6850/ClO4 DOD			Liquid	10mL	
15	EQ2200338-05	04WW11-220802 DMS	.01	6850/ClO4 DOD			Liquid	10mL	
16	EQ2200338-06	MTW-31-220729 MS	.01	6850/ClO4 DOD			Liquid	10mL	
17	EQ2200338-07	MTW-31-220729 DMS	.01	6850/ClO4 DOD			Liquid	10mL	
18	K2208630-001	MTW-31-220729	.01	6850/ClO4 DOD			Ground Water	10mL	
19	K2208630-002	SB-220729-01	.01	6850/ClO4 DOD			Ground Water	10mL	
20	K2208630-003	EB-220729-01	.01	6850/ClO4 DOD			Ground Water	10mL	
21	K2208630-004	FD-220729-01	.01	6850/ClO4 DOD			Ground Water	10mL	
22	K2208654-001	MTW-26-220725	.02	6850/ClO4 DOD			Ground Water	10mL	
23	K2208654-002	MTW-30-220726	.02	6850/ClO4 DOD			Ground Water	10mL	
24	K2208654-003	MTW-21-220726	.02	6850/ClO4 DOD			Ground Water	10mL	
25	K2208654-004	MTW-27-220728	.02	6850/ClO4 DOD			Ground Water	10mL	
26	K2208654-005	MTW-33-220728	.02	6850/ClO4 DOD			Ground Water	10mL	
27	K2208660-001	LGAC-INF-080122	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200338-02 1.00µL EQ2200338-02 1.00µL EQ2200338-03 1.00µL EQ2200338-03 1.00µL EQ2200338-04 1.00µL EQ2200338-05 1.00µL
EQ2200338-06 1.00µL EQ2200338-07 1.00µL

Preparation Information Benchsheet

Prep Run#: 404146 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 8/8/22 10:08

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200753-001	100.00µL	E2200753-002	100.00µL	E2200753-003	100.00µL	E2200753-004	100.00µL	E2200753-005	100.00µL	E2200753-006	100.00µL
E2200753-007	100.00µL	E2200753-008	100.00µL	E2200756-001	100.00µL	E2200756-002	100.00µL	EQ2200338-01	100.00µL	EQ2200338-01	100.00µL
EQ2200338-02	100.00µL	EQ2200338-02	100.00µL	EQ2200338-03	100.00µL	EQ2200338-03	100.00µL	EQ2200338-04	100.00µL	EQ2200338-05	100.00µL
EQ2200338-06	100.00µL	EQ2200338-07	100.00µL	K2208630-001	100.00µL	K2208630-002	100.00µL	K2208630-003	100.00µL	K2208630-004	100.00µL
K2208654-001	100.00µL	K2208654-002	100.00µL	K2208654-003	100.00µL	K2208654-004	100.00µL	K2208654-005	100.00µL	K2208660-001	100.00µL

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (222410)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/8/22 10:08
Finished: 8/8/22 11:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/08/22

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:**	E2200756
Project:	HS22080124	**Date Collected:**	8/2/22 1400
Sample Matrix:	Water	**Date Received:**	8/ 3/22
Sample Name:	LH18/24-SP650_080222_AIX	**Units:**	µg/L
Lab Code:	E2200756-001	**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	**0.0287**	J	0.100	0.0500	0.0250	1	8/ 8/22	8/8/22 15:38	404146	773191	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200756
Project:	HS22080124	**Date Collected:**	8/2/22 1400
Sample Matrix:	Water	**Date Received:**	8/ 3/22
Sample Name:	LH18/24-SP650_080222_BIX	**Units:**	µg/L
Lab Code:	E2200756-002	**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	**0.909**		0.100	0.0500	0.0250	1	8/ 8/22	8/8/22 13:51	404146	773191	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200756
Project:	HS22080124	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200338-01	**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	8/ 8/22	8/8/22 12:47	404146	773191	

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: HS22080124
Sample Matrix: Water

Service Request: E2200756
Date Analyzed: 8/ 8/22

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: 404146

	Lab Control Sample EQ2200338-02			Duplicate Lab Control Sample EQ2200338-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0964	0.100	96	0.102	0.100	102	84 - 119	6	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:**	E2200756
Project:	HS22080124	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200338-02	**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	**0.0964**	J	0.100	0.0500	0.0250	1	8/ 8/22	8/8/22 12:55	404146	773191	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200756
Project:	HS22080124	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200338-03	**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	**0.102**		0.100	0.0500	0.0250	1	8/ 8/22	8/8/22 13:16	404146	773191	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

August 08, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080125**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Aug 03, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22080125

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080125-01	LH18/24-SP650_080222	Water		02-Aug-2022 13:00	03-Aug-2022 09:35	☐
HS22080125-02	Trip Blank	Water		02-Aug-2022 13:00	03-Aug-2022 09:35	☐

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22080125

GCMS Volatiles by Method SW8260

Batch ID: R414386

Sample ID: LH18/24-SP650_080222(HS22080125-01MS/MSD

- The recovery of the Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) associated to some analytes were outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS/MSD may be due to sample matrix interference.

Sample ID: LH18/24-SP650_080222 (HS22080125-01MSD)

- The RPD between the MS and MSD was outside of the control limit. Hexachlorobutadiene, n-Butylbenzene

WetChemistry by Method SW9056

Batch ID: R414475

Sample ID: HS22080185-02MS

- MS and MSD are for an unrelated sample (Sulfate)

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080125
Sample ID: LH18/24-SP650_080222 Lab ID:HS22080125-01
Collection Date: 02-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	03-Aug-2022 14:13
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	03-Aug-2022 14:13
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	03-Aug-2022 14:13
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	03-Aug-2022 14:13
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	03-Aug-2022 14:13
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13

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

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080125
Sample ID: LH18/24-SP650_080222 Lab ID:HS22080125-01
Collection Date: 02-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
cis-1,2-Dichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**ug/L**	1	03-Aug-2022 14:13
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	03-Aug-2022 14:13
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	03-Aug-2022 14:13
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 14:13
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 14:13
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 14:13
Surr: 1,2-Dichloroethane-d4	*96.3*			**0**	*81-118*	*%REC*	*1*	*03-Aug-2022 14:13*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*1*	*03-Aug-2022 14:13*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*1*	*03-Aug-2022 14:13*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*03-Aug-2022 14:13*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,040**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Aug-2022 17:12
Sulfate	**22.0**		**0.400**	**1.00**	**1.00**	**mg/L**	2	04-Aug-2022 17:07

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

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080125
Sample ID: Trip Blank Lab ID:HS22080125-02
Collection Date: 02-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	03-Aug-2022 13:31
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	03-Aug-2022 13:31
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	03-Aug-2022 13:31
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	03-Aug-2022 13:31
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	03-Aug-2022 13:31
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31

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

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080125
Sample ID: Trip Blank Lab ID:HS22080125-02
Collection Date: 02-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	03-Aug-2022 13:31
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	03-Aug-2022 13:31
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Aug-2022 13:31
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Aug-2022 13:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	03-Aug-2022 13:31
Surr: 1,2-Dichloroethane-d4	*96.7*			**0**	*81-118*	*%REC*	*1*	*03-Aug-2022 13:31*
Surr: 4-Bromofluorobenzene	*97.3*			**0**	*85-114*	*%REC*	*1*	*03-Aug-2022 13:31*
Surr: Dibromofluoromethane	*94.2*			**0**	*80-119*	*%REC*	*1*	*03-Aug-2022 13:31*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*03-Aug-2022 13:31*

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

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R414386 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22080125-01	LH18/24-SP650_080222	02 Aug 2022 13:00			03 Aug 2022 14:13	1
HS22080125-02	Trip Blank	02 Aug 2022 13:00			03 Aug 2022 13:31	1
Batch ID: R414475 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22080125-01	LH18/24-SP650_080222	02 Aug 2022 13:00			04 Aug 2022 17:12	20
HS22080125-01	LH18/24-SP650_080222	02 Aug 2022 13:00			04 Aug 2022 17:07	2

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220803** Units: **ug/L** Analysis Date: **03-Aug-2022 13:10**
Client ID: Run ID: **VOA6_414386** SeqNo: **6785471** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220803** Units: **ug/L** Analysis Date: **03-Aug-2022 13:10**
Client ID: Run ID: **VOA6_414386** SeqNo: **6785471** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*47.45*	*1.0*	*50*	*0*	*94.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.71*	*1.0*	*50*	*0*	*95.4*	*85 - 114*				
Surr: Dibromofluoromethane	*47.64*	*1.0*	*50*	*0*	*95.3*	*80 - 119*				
Surr: Toluene-d8	*53.03*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220803** Units: **ug/L** Analysis Date: **03-Aug-2022 12:07**
Client ID: Run ID: **VOA6_414386** SeqNo: **6785470** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.56	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	19.68	1.0	20	0	98.4	74 - 131				
1,1,2,2-Tetrachloroethane	20.55	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	20.35	1.0	20	0	102	80 - 119				
1,1-Dichloroethane	20.3	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	18.39	1.0	20	0	91.9	71 - 131				
1,1-Dichloropropene	19.31	1.0	20	0	96.6	78 - 125				
1,2,3-Trichlorobenzene	18.73	1.0	20	0	93.7	69 - 129				
1,2,3-Trichloropropane	21.68	1.0	20	0	108	73 - 122				
1,2,4-Trichlorobenzene	18.7	1.0	20	0	93.5	69 - 130				
1,2,4-Trimethylbenzene	19.71	1.0	20	0	98.5	76 - 124				
1,2-Dibromo-3-chloropropane	19.77	1.0	20	0	98.9	62 - 128				
1,2-Dibromoethane	20.91	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.32	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.19	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	20.4	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	19.29	1.0	20	0	96.4	75 - 124				
1,3-Dichlorobenzene	19.9	1.0	20	0	99.5	80 - 119				
1,3-Dichloropropane	20.62	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	19.86	1.0	20	0	99.3	79 - 118				
2,2-Dichloropropane	20.3	1.0	20	0	102	60 - 139				
2-Butanone	36.7	2.0	40	0	91.8	56 - 143				
2-Chlorotoluene	19.52	1.0	20	0	97.6	79 - 122				
2-Hexanone	39.26	2.0	40	0	98.1	57 - 139				
4-Chlorotoluene	19.92	1.0	20	0	99.6	78 - 122				
4-Isopropyltoluene	19.17	1.0	20	0	95.8	77 - 127				
4-Methyl-2-pentanone	41.87	2.0	40	0	105	67 - 130				
Acetone	38.26	2.0	40	0	95.7	39 - 160				
Benzene	19.87	1.0	20	0	99.3	79 - 120				
Bromobenzene	20.6	1.0	20	0	103	80 - 120				
Bromochloromethane	19.65	1.0	20	0	98.2	78 - 123				
Bromodichloromethane	20.51	1.0	20	0	103	79 - 125				
Bromoform	19.37	1.0	20	0	96.9	66 - 130				
Bromomethane	20.92	1.0	20	0	105	53 - 141				

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220803** Units: **ug/L** Analysis Date: **03-Aug-2022 12:07**
Client ID: Run ID: **VOA6_414386** SeqNo: **6785470** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.16	2.0	40	0	95.4	64 - 133				
Carbon tetrachloride	18.62	1.0	20	0	93.1	72 - 136				
Chlorobenzene	20.28	1.0	20	0	101	82 - 118				
Chloroethane	18.98	1.0	20	0	94.9	60 - 138				
Chloroform	20.42	1.0	20	0	102	79 - 124				
Chloromethane	22.19	1.0	20	0	111	50 - 139				
cis-1,2-Dichloroethene	20.67	1.0	20	0	103	78 - 123				
cis-1,3-Dichloropropene	20.66	1.0	20	0	103	75 - 124				
Dibromochloromethane	20.74	1.0	20	0	104	74 - 126				
Dibromomethane	20.19	1.0	20	0	101	79 - 123				
Dichlorodifluoromethane	19.17	1.0	20	0	95.8	32 - 152				
Ethylbenzene	19.44	1.0	20	0	97.2	79 - 121				
Hexachlorobutadiene	19.4	1.0	20	0	97.0	66 - 134				
Isopropylbenzene	18.84	1.0	20	0	94.2	72 - 131				
m,p-Xylene	39.52	2.0	40	0	98.8	80 - 121				
Methylene chloride	21.9	2.0	20	0	110	74 - 124				
Naphthalene	17.97	1.0	20	0	89.8	61 - 128				
n-Butylbenzene	19.55	1.0	20	0	97.7	75 - 128				
n-Propylbenzene	19.64	1.0	20	0	98.2	76 - 126				
o-Xylene	19.82	1.0	20	0	99.1	78 - 122				
sec-Butylbenzene	18.63	1.0	20	0	93.1	77 - 126				
Styrene	20.24	1.0	20	0	101	78 - 123				
tert-Butylbenzene	18.74	1.0	20	0	93.7	78 - 124				
Tetrachloroethene	18.57	1.0	20	0	92.8	74 - 129				
Toluene	20.08	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	20.11	1.0	20	0	101	75 - 124				
trans-1,3-Dichloropropene	20.73	1.0	20	0	104	73 - 127				
Trichloroethene	19.28	1.0	20	0	96.4	79 - 123				
Trichlorofluoromethane	18.53	1.0	20	0	92.7	65 - 141				
Vinyl chloride	18.51	1.0	20	0	92.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.43*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.49*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*51.34*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*50.33*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080125-01MS** Units: **ug/L** Analysis Date: **03-Aug-2022 14:55**
Client ID: **LH18/24-SP650_080222** Run ID: **VOA6_414386** SeqNo: **6785475** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.66	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.51	1.0	20	0	103	74 - 131				
1,1,2,2-Tetrachloroethane	22.08	1.0	20	0	110	71 - 121				
1,1,2-Trichloroethane	21.1	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	19.73	1.0	20	0	98.6	77 - 125				
1,1-Dichloroethene	19.66	1.0	20	0	98.3	71 - 131				
1,1-Dichloropropene	21.61	1.0	20	0	108	78 - 125				
1,2,3-Trichlorobenzene	26.41	1.0	20	0	132	69 - 129				S
1,2,3-Trichloropropane	22.09	1.0	20	0	110	73 - 122				
1,2,4-Trichlorobenzene	26.98	1.0	20	0	135	69 - 130				S
1,2,4-Trimethylbenzene	22.88	1.0	20	0	114	76 - 124				
1,2-Dibromo-3-chloropropane	25.79	1.0	20	0	129	62 - 128				S
1,2-Dibromoethane	21.16	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	22.37	1.0	20	0	112	80 - 119				
1,2-Dichloroethane	19.89	1.0	20	0	99.5	73 - 128				
1,2-Dichloropropane	19.7	1.0	20	0	98.5	78 - 122				
1,3,5-Trimethylbenzene	23.15	1.0	20	0	116	75 - 124				
1,3-Dichlorobenzene	21.9	1.0	20	0	109	80 - 119				
1,3-Dichloropropane	20.52	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	21.49	1.0	20	0	107	79 - 118				
2,2-Dichloropropane	20.64	1.0	20	0	103	60 - 139				
2-Butanone	40.39	2.0	40	0	101	56 - 143				
2-Chlorotoluene	21.15	1.0	20	0	106	79 - 122				
2-Hexanone	51.4	2.0	40	0	129	57 - 139				
4-Chlorotoluene	21.9	1.0	20	0	110	78 - 122				
4-Isopropyltoluene	24.9	1.0	20	0	124	77 - 127				
4-Methyl-2-pentanone	51.86	2.0	40	0	130	67 - 130				
Acetone	35.36	2.0	40	0	88.4	39 - 160				
Benzene	20.41	1.0	20	0	102	79 - 120				
Bromobenzene	21.05	1.0	20	0	105	80 - 120				
Bromochloromethane	18.34	1.0	20	0	91.7	78 - 123				
Bromodichloromethane	20.35	1.0	20	0	102	79 - 125				
Bromoform	20.87	1.0	20	0	104	66 - 130				
Bromomethane	15.04	1.0	20	0	75.2	53 - 141				

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080125-01MS** Units: **ug/L** Analysis Date: **03-Aug-2022 14:55**
Client ID: **LH18/24-SP650_080222** Run ID: **VOA6_414386** SeqNo: **6785475** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.59	2.0	40	0	106	64 - 133				
Carbon tetrachloride	20.61	1.0	20	0	103	72 - 136				
Chlorobenzene	20.84	1.0	20	0	104	82 - 118				
Chloroethane	14.57	1.0	20	0	72.9	60 - 138				
Chloroform	19.27	1.0	20	0	96.4	79 - 124				
Chloromethane	24.38	1.0	20	0	122	50 - 139				
cis-1,2-Dichloroethene	23.15	1.0	20	3.342	99.0	78 - 123				
cis-1,3-Dichloropropene	20.16	1.0	20	0	101	75 - 124				
Dibromochloromethane	20.62	1.0	20	0	103	74 - 126				
Dibromomethane	20.53	1.0	20	0	103	79 - 123				
Dichlorodifluoromethane	18.14	1.0	20	0	90.7	32 - 152				
Ethylbenzene	21.98	1.0	20	0	110	79 - 121				
Hexachlorobutadiene	28.81	1.0	20	0	144	66 - 134				S
Isopropylbenzene	23.2	1.0	20	0	116	72 - 131				
m,p-Xylene	44.28	2.0	40	0	111	80 - 121				
Methylene chloride	18.93	2.0	20	0	94.6	74 - 124				
Naphthalene	26.6	1.0	20	0	133	61 - 128				S
n-Butylbenzene	26.71	1.0	20	0	134	75 - 128				S
n-Propylbenzene	24.13	1.0	20	0	121	76 - 126				
o-Xylene	21.12	1.0	20	0	106	78 - 122				
sec-Butylbenzene	24.81	1.0	20	0	124	77 - 126				
Styrene	20.98	1.0	20	0	105	78 - 123				
tert-Butylbenzene	24.07	1.0	20	0	120	78 - 124				
Tetrachloroethene	22.03	1.0	20	0	110	74 - 129				
Toluene	20.83	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	20.12	1.0	20	0	101	75 - 124				
trans-1,3-Dichloropropene	20.8	1.0	20	0	104	73 - 127				
Trichloroethene	20.89	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	20.23	1.0	20	0	101	65 - 141				
Vinyl chloride	18.97	1.0	20	0	94.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.94*	*1.0*	*50*	*0*	*99.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.45*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*48.4*	*1.0*	*50*	*0*	*96.8*	*80 - 119*				
Surr: Toluene-d8	*52.05*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080125-01MSD** Units: **ug/L** Analysis Date: **03-Aug-2022 15:16**
Client ID: **LH18/24-SP650_080222** Run ID: **VOA6_414386** SeqNo: **6785476** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.34	1.0	20	0	102	78 - 124	20.66	1.58	20	
1,1,1-Trichloroethane	19.93	1.0	20	0	99.6	74 - 131	20.51	2.89	20	
1,1,2,2-Tetrachloroethane	23.12	1.0	20	0	116	71 - 121	22.08	4.59	20	
1,1,2-Trichloroethane	21.15	1.0	20	0	106	80 - 119	21.1	0.205	20	
1,1-Dichloroethane	19.31	1.0	20	0	96.6	77 - 125	19.73	2.14	20	
1,1-Dichloroethene	19.15	1.0	20	0	95.7	71 - 131	19.66	2.65	20	
1,1-Dichloropropene	20.27	1.0	20	0	101	78 - 125	21.61	6.36	20	
1,2,3-Trichlorobenzene	28.09	1.0	20	0	140	69 - 129	26.41	6.18	20	S
1,2,3-Trichloropropane	22.86	1.0	20	0	114	73 - 122	22.09	3.45	20	
1,2,4-Trichlorobenzene	25.66	1.0	20	0	128	69 - 130	26.98	5.03	20	
1,2,4-Trimethylbenzene	20.63	1.0	20	0	103	76 - 124	22.88	10.3	20	
1,2-Dibromo-3-chloropropane	26.44	1.0	20	0	132	62 - 128	25.79	2.5	20	S
1,2-Dibromoethane	21.3	1.0	20	0	107	77 - 121	21.16	0.657	20	
1,2-Dichlorobenzene	21.72	1.0	20	0	109	80 - 119	22.37	2.92	20	
1,2-Dichloroethane	20.18	1.0	20	0	101	73 - 128	19.89	1.44	20	
1,2-Dichloropropane	19.04	1.0	20	0	95.2	78 - 122	19.7	3.4	20	
1,3,5-Trimethylbenzene	20.48	1.0	20	0	102	75 - 124	23.15	12.2	20	
1,3-Dichlorobenzene	20.64	1.0	20	0	103	80 - 119	21.9	5.89	20	
1,3-Dichloropropane	21.03	1.0	20	0	105	80 - 119	20.52	2.45	20	
1,4-Dichlorobenzene	20.85	1.0	20	0	104	79 - 118	21.49	3.02	20	
2,2-Dichloropropane	20.19	1.0	20	0	101	60 - 139	20.64	2.21	20	
2-Butanone	42.13	2.0	40	0	105	56 - 143	40.39	4.2	20	
2-Chlorotoluene	20.01	1.0	20	0	100	79 - 122	21.15	5.53	20	
2-Hexanone	53.01	2.0	40	0	133	57 - 139	51.4	3.07	20	
4-Chlorotoluene	20.43	1.0	20	0	102	78 - 122	21.9	6.98	20	
4-Isopropyltoluene	20.83	1.0	20	0	104	77 - 127	24.9	17.8	20	
4-Methyl-2-pentanone	53.98	2.0	40	0	135	67 - 130	51.86	4.01	20	S
Acetone	38.37	2.0	40	0	95.9	39 - 160	35.36	8.17	20	
Benzene	19.47	1.0	20	0	97.4	79 - 120	20.41	4.67	20	
Bromobenzene	20.71	1.0	20	0	104	80 - 120	21.05	1.64	20	
Bromochloromethane	18.63	1.0	20	0	93.2	78 - 123	18.34	1.61	20	
Bromodichloromethane	19.46	1.0	20	0	97.3	79 - 125	20.35	4.47	20	
Bromoform	21.1	1.0	20	0	106	66 - 130	20.87	1.08	20	
Bromomethane	14.43	1.0	20	0	72.1	53 - 141	15.04	4.15	20	

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414386 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080125-01MSD** Units: **ug/L** Analysis Date: **03-Aug-2022 15:16**
Client ID: **LH18/24-SP650_080222** Run ID: **VOA6_414386** SeqNo: **6785476** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	41.16	2.0	40	0	103	64 - 133	42.59	3.41	20	
Carbon tetrachloride	19.91	1.0	20	0	99.6	72 - 136	20.61	3.42	20	
Chlorobenzene	20.36	1.0	20	0	102	82 - 118	20.84	2.37	20	
Chloroethane	16.6	1.0	20	0	83.0	60 - 138	14.57	13	20	
Chloroform	19.25	1.0	20	0	96.2	79 - 124	19.27	0.126	20	
Chloromethane	24.65	1.0	20	0	123	50 - 139	24.38	1.12	20	
cis-1,2-Dichloroethene	23.01	1.0	20	3.342	98.3	78 - 123	23.15	0.582	20	
cis-1,3-Dichloropropene	19.5	1.0	20	0	97.5	75 - 124	20.16	3.33	20	
Dibromochloromethane	20.66	1.0	20	0	103	74 - 126	20.62	0.163	20	
Dibromomethane	20.45	1.0	20	0	102	79 - 123	20.53	0.397	20	
Dichlorodifluoromethane	17.2	1.0	20	0	86.0	32 - 152	18.14	5.3	20	
Ethylbenzene	20.54	1.0	20	0	103	79 - 121	21.98	6.75	20	
Hexachlorobutadiene	22.8	1.0	20	0	114	66 - 134	28.81	23.3	20	R
Isopropylbenzene	20.28	1.0	20	0	101	72 - 131	23.2	13.4	20	
m,p-Xylene	41.26	2.0	40	0	103	80 - 121	44.28	7.05	20	
Methylene chloride	18.82	2.0	20	0	94.1	74 - 124	18.93	0.574	20	
Naphthalene	28.9	1.0	20	0	144	61 - 128	26.6	8.29	20	S
n-Butylbenzene	21.86	1.0	20	0	109	75 - 128	26.71	20	20	R
n-Propylbenzene	21.12	1.0	20	0	106	76 - 126	24.13	13.3	20	
o-Xylene	20.19	1.0	20	0	101	78 - 122	21.12	4.54	20	
sec-Butylbenzene	20.73	1.0	20	0	104	77 - 126	24.81	17.9	20	
Styrene	20.45	1.0	20	0	102	78 - 123	20.98	2.57	20	
tert-Butylbenzene	20.37	1.0	20	0	102	78 - 124	24.07	16.6	20	
Tetrachloroethene	20.78	1.0	20	0	104	74 - 129	22.03	5.83	20	
Toluene	20.48	1.0	20	0	102	80 - 121	20.83	1.65	20	
trans-1,2-Dichloroethene	20.08	1.0	20	0	100	75 - 124	20.12	0.17	20	
trans-1,3-Dichloropropene	20.5	1.0	20	0	103	73 - 127	20.8	1.42	20	
Trichloroethene	19.94	1.0	20	0	99.7	79 - 123	20.89	4.68	20	
Trichlorofluoromethane	19.46	1.0	20	0	97.3	65 - 141	20.23	3.91	20	
Vinyl chloride	18.41	1.0	20	0	92.0	58 - 137	18.97	3.01	20	
Surr: 1,2-Dichloroethane-d4	*48.9*	*1.0*	*50*	*0*	*97.8*	*81 - 118*	*49.94*	*2.1*	*20*	
Surr: 4-Bromofluorobenzene	*50.55*	*1.0*	*50*	*0*	*101*	*85 - 114*	*51.45*	*1.76*	*20*	
Surr: Dibromofluoromethane	*48.32*	*1.0*	*50*	*0*	*96.6*	*80 - 119*	*48.4*	*0.173*	*20*	
Surr: Toluene-d8	*52*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.05*	*0.0841*	*20*	

ALS Houston, US Date: 08-Aug-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22080125

QC BATCH REPORT

Batch ID:	**R414386 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22080125-01	HS22080125-02

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080125

QC BATCH REPORT

Batch ID: R414475 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Aug-2022 16:03**
Client ID: Run ID: **ICS-Integrion_414475** SeqNo: **6787783** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Aug-2022 16:08**
Client ID: Run ID: **ICS-Integrion_414475** SeqNo: **6787784** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.84	0.500	20	0	99.2	80 - 120				
Sulfate	19.4	0.500	20	0	97.0	80 - 120				

MS Sample ID: **HS22080185-02MS** Units: **mg/L** Analysis Date: **04-Aug-2022 16:19**
Client ID: Run ID: **ICS-Integrion_414475** SeqNo: **6787786** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	127.8	2.50	50	76.62	102	80 - 120				
Sulfate	2538	2.50	50	2593	-109	80 - 120				SEO

MSD Sample ID: **HS22080185-02MSD** Units: **mg/L** Analysis Date: **04-Aug-2022 16:24**
Client ID: Run ID: **ICS-Integrion_414475** SeqNo: **6787787** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	128.5	2.50	50	76.62	104	80 - 120	127.8	0.488	20	
Sulfate	2546	2.50	50	2593	-92.5	80 - 120	2538	0.316	20	SEO

The following samples were analyzed in this batch: HS22080125-01

ALS Houston, US Date: 08-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22080125**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 08-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080125 **Date/Time Received:** 03-Aug-2022 09:35

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By: /S/ Corey Grandits (eSignature) 03-Aug-2022 10:38 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 03-Aug-2022 15:14 (Date/Time)

Matrices: W 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 ☐	
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):	2.0UC/2.5C	IR31	
Cooler(s)/Kit(s):	46409		
Date/Time sample(s) sent to storage:	8/3/2022		
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

HS22080125

Name Of Lab Shipping To: ALS, 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: Dane Wacasey

Bhate Environmental Associates, Inc.

Longhorn GW Treatment Plant Bi-Weekly Samples

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOC	CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_080222	Water	08/02/22 / 13:00		3	3		HCL	
LH18/24-SP650_080222	Water	08/02/22 / 13:00		1		1	NONE	
Trip Blank	Water	08/02/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/02/22	13:30	[illegible]	8-3-22	0735						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

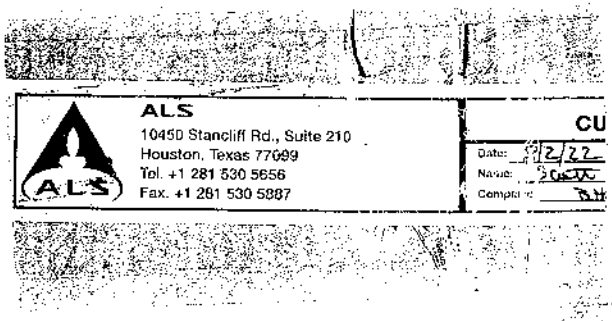
Remarks

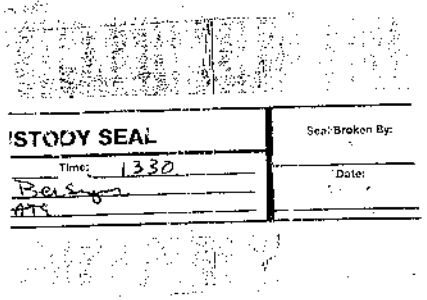
96409 2.0°

1871

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


FedEx
Express
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
ALS
CU
Date: 12/22


STODY SEAL
Time: 1330
Seal Broken By:
Date:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

August 24, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080472**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 10, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22080472

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080472-01	LH18/24-SP650_080922	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐
HS22080472-02	LH18/24-SP650_080922_AIX	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐
HS22080472-03	Trip Blank	Water	CG-061422-298	09-Aug-2022 00:00	10-Aug-2022 09:45	☐

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22080472

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 182382

Sample ID: LH18/24-SP650_080922 (HS22080472-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R414821

Sample ID: LH18/24-SP650_08092(HS22080472-01MSD)

• The RPD between the MS and MSD was outside of the control limit. 1,2,3-Trichlorobenzene, Naphthalene

Metals by Method SW6020A

Batch ID: 182618

Sample ID: LH18/24-SP650_080922 (HS22080472-01MS)

• Silver failed for MS/MSD but passed for PDS

WetChemistry by Method SW7196

Batch ID: R414786

Sample ID: LH18/24-SP650_080922 (HS22080472-01MS)

• 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: LH18/24-SP650_080922 (HS22080472-01MSD)

• 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.

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472
Sample ID: LH18/24-SP650_080922 Lab ID:HS22080472-01
Collection Date: 09-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	10-Aug-2022 15:19
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	10-Aug-2022 15:19
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	10-Aug-2022 15:19
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	10-Aug-2022 15:19
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	10-Aug-2022 15:19
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19

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

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472
Sample ID: LH18/24-SP650_080922 Lab ID:HS22080472-01
Collection Date: 09-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
cis-1,2-Dichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Aug-2022 15:19
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	10-Aug-2022 15:19
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	10-Aug-2022 15:19
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 15:19
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 15:19
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 15:19
Surr: 1,2-Dichloroethane-d4	*95.5*			**0**	*81-118*	*%REC*	*1*	*10-Aug-2022 15:19*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*1*	*10-Aug-2022 15:19*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*1*	*10-Aug-2022 15:19*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*10-Aug-2022 15:19*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**36**	a	**1.0**	**1.0**	**1.0**	**ug/L**	100	23-Aug-2022 18:27
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*23-Aug-2022 18:27*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*23-Aug-2022 18:27*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*23-Aug-2022 18:27*
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 19-Aug-2022		Analyst: YP
Barium	**0.355**		**0.00950**	**0.0125**	**0.0250**	**mg/L**	5	22-Aug-2022 20:40
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	23-Aug-2022 13:04
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Aug-2022 13:04
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Aug-2022 13:04

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

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472

Sample ID: LH18/24-SP650_080922 Lab ID:HS22080472-01

Collection Date: 09-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: AP
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	10-Aug-2022 12:40

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

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472

Sample ID: LH18/24-SP650_080922_AIX Lab ID:HS22080472-02

Collection Date: 09-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Aug-2022 16:32

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

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472

Sample ID: Trip Blank Lab ID:HS22080472-03

Collection Date: 09-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	10-Aug-2022 14:58
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	10-Aug-2022 14:58
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	10-Aug-2022 14:58
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	10-Aug-2022 14:58
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	10-Aug-2022 14:58
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58

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

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22080472

Sample ID: Trip Blank Lab ID:HS22080472-03

Collection Date: 09-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	10-Aug-2022 14:58
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	10-Aug-2022 14:58
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	10-Aug-2022 14:58
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	10-Aug-2022 14:58
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	10-Aug-2022 14:58
Surr: 1,2-Dichloroethane-d4	*94.3*			**0**	*81-118*	*%REC*	*1*	*10-Aug-2022 14:58*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*10-Aug-2022 14:58*
Surr: Dibromofluoromethane	*93.7*			**0**	*80-119*	*%REC*	*1*	*10-Aug-2022 14:58*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*10-Aug-2022 14:58*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

Batch ID: 182382 **Start Date:** 12 Aug 2022 10:30 **End Date:** 12 Aug 2022 14:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22080472-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 182618 **Start Date:** 19 Aug 2022 09:00 **End Date:** 19 Aug 2022 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22080472-01		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 182382 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22080472-01	LH18/24-SP650_080922	09 Aug 2022 13:00		12 Aug 2022 13:02	23 Aug 2022 18:27	100
Batch ID: 182618 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22080472-01	LH18/24-SP650_080922	09 Aug 2022 13:00		19 Aug 2022 09:00	23 Aug 2022 13:04	1
HS22080472-01	LH18/24-SP650_080922	09 Aug 2022 13:00		19 Aug 2022 09:00	22 Aug 2022 20:40	5
Batch ID: R414786 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22080472-01	LH18/24-SP650_080922	09 Aug 2022 13:00			10 Aug 2022 12:40	1
Batch ID: R414821 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22080472-01	LH18/24-SP650_080922	09 Aug 2022 13:00			10 Aug 2022 15:19	1
HS22080472-03	Trip Blank	09 Aug 2022 00:00			10 Aug 2022 14:58	1
Batch ID: R414981 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080472-02	LH18/24-SP650_080922_AIX	09 Aug 2022 13:00			12 Aug 2022 16:32	1

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:36**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813234** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00500								U
Lead	0.00125	0.00500								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:38**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813235** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.05404	0.00500	0.05	0	108	86 - 114				
Lead	0.04892	0.00500	0.05	0	97.8	88 - 115				
Selenium	0.05753	0.00500	0.05	0	115	80 - 120				
Silver	0.04447	0.00500	0.05	0	88.9	85 - 116				

MS Sample ID: **HS22080472-01MS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:08**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415638** SeqNo: **6815411** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.452	0.00500	0.05	0.3987	107	86 - 114				O
Lead	0.05145	0.00500	0.05	0.000298	102	88 - 115				
Selenium	0.04953	0.00500	0.05	0.000217	98.6	80 - 120				
Silver	0.04119	0.00500	0.05	0.000012	82.4	85 - 116				S

MSD Sample ID: **HS22080472-01MSD** Units: **mg/L** Analysis Date: **23-Aug-2022 15:05**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415638** SeqNo: **6815479** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.4467	0.00500	0.05	0.3987	96.0	86 - 114	0.452	1.19	20	O
Lead	0.05234	0.00500	0.05	0	105	88 - 115	0.05145	1.71	20	
Selenium	0.04688	0.00500	0.05	0	93.8	80 - 120	0.04953	5.5	20	
Silver	0.04077	0.00500	0.05	0	81.5	85 - 116	0.04119	1.02	20	S

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22080472-01PDS** Units: **mg/L** Analysis Date: **22-Aug-2022 20:48**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415559** SeqNo: **6813240** PrepDate: **19-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.899	0.0250	0.5	0.3548	109	80 - 120				

PDS Sample ID: **HS22080472-01PDS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:12**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415638** SeqNo: **6815413** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.1084	0.00500	0.1	0.000298	108	80 - 120				
Selenium	0.1085	0.00500	0.1	0.000217	108	80 - 120				
Silver	0.1035	0.00500	0.1	0.000012	103	80 - 120				

SD Sample ID: **HS22080472-01SD** Units: **mg/L** Analysis Date: **22-Aug-2022 20:42**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415559** SeqNo: **6813237** PrepDate: **19-Aug-2022** DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.3432	0.125					0.3548	3.27	10	

SD Sample ID: **HS22080472-01SD** Units: **mg/L** Analysis Date: **23-Aug-2022 13:06**
Client ID: **LH18/24-SP650_080922** Run ID: **ICPMS07_415638** SeqNo: **6815410** PrepDate: **19-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Lead	0.00625	0.0250					0.000298	0	10	U
Selenium	0.0125	0.0250					0.000217	0	10	U
Silver	0.00250	0.0250					0.000012	0	10	U

The following samples were analyzed in this batch: HS22080472-01

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: 182382 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:16**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817428** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.0349*	*0*	*0.08*	*0*	*43.6*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.05239*	*0*	*0.08*	*0*	*65.5*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07908*	*0*	*0.08*	*0*	*98.9*	*40 - 140*				

LCS Sample ID: **LCS-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:34**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817429** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1057	0.010	0.08	0	132	40 - 140				
Surr: 2-Fluorobiphenyl	*0.03441*	*0*	*0.08*	*0*	*43.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.05302*	*0*	*0.08*	*0*	*66.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07408*	*0*	*0.08*	*0*	*92.6*	*40 - 140*				

LCSD Sample ID: **LCSD-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:52**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817430** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1071	0.010	0.08	0	134	40 - 140	0.1057	1.31	20	
Surr: 2-Fluorobiphenyl	*0.03726*	*0*	*0.08*	*0*	*46.6*	*40 - 140*	*0.03441*	*7.97*	*20*	
Surr: 4-Terphenyl-d14	*0.05532*	*0*	*0.08*	*0*	*69.2*	*40 - 140*	*0.05302*	*4.26*	*20*	
Surr: Nitrobenzene-d5	*0.07327*	*0*	*0.08*	*0*	*91.6*	*40 - 140*	*0.07408*	*1.1*	*20*	

The following samples were analyzed in this batch: HS22080472-01

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220810** Units: **ug/L** Analysis Date: **10-Aug-2022 12:52**
Client ID: Run ID: **VOA6_414821** SeqNo: **6796144** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220810** Units: **ug/L** Analysis Date: **10-Aug-2022 12:52**
Client ID: Run ID: **VOA6_414821** SeqNo: **6796144** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*47.99*	*1.0*	*50*	*0*	*96.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.03*	*1.0*	*50*	*0*	*96.1*	*85 - 114*				
Surr: Dibromofluoromethane	*47.59*	*1.0*	*50*	*0*	*95.2*	*80 - 119*				
Surr: Toluene-d8	*54.49*	*1.0*	*50*	*0*	*109*	*89 - 112*				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220810** Units: **ug/L** Analysis Date: **10-Aug-2022 11:49**
Client ID: Run ID: **VOA6_414821** SeqNo: **6796143** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.98	1.0	20	0	99.9	78 - 124				
1,1,1-Trichloroethane	20.57	1.0	20	0	103	74 - 131				
1,1,2,2-Tetrachloroethane	19.42	1.0	20	0	97.1	71 - 121				
1,1,2-Trichloroethane	19.59	1.0	20	0	98.0	80 - 119				
1,1-Dichloroethane	19.94	1.0	20	0	99.7	77 - 125				
1,1-Dichloroethene	19.23	1.0	20	0	96.1	71 - 131				
1,1-Dichloropropene	20.47	1.0	20	0	102	78 - 125				
1,2,3-Trichlorobenzene	22.45	1.0	20	0	112	69 - 129				
1,2,3-Trichloropropane	18.68	1.0	20	0	93.4	73 - 122				
1,2,4-Trichlorobenzene	21.51	1.0	20	0	108	69 - 130				
1,2,4-Trimethylbenzene	21.3	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	19.66	1.0	20	0	98.3	62 - 128				
1,2-Dibromoethane	19.51	1.0	20	0	97.6	77 - 121				
1,2-Dichlorobenzene	20.36	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.49	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	19.73	1.0	20	0	98.7	78 - 122				
1,3,5-Trimethylbenzene	21.12	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.61	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	19.35	1.0	20	0	96.8	80 - 119				
1,4-Dichlorobenzene	20.52	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	21.53	1.0	20	0	108	60 - 139				
2-Butanone	35.63	2.0	40	0	89.1	56 - 143				
2-Chlorotoluene	20.39	1.0	20	0	102	79 - 122				
2-Hexanone	38.29	2.0	40	0	95.7	57 - 139				
4-Chlorotoluene	20.77	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	22.34	1.0	20	0	112	77 - 127				
4-Methyl-2-pentanone	40.29	2.0	40	0	101	67 - 130				
Acetone	36.45	2.0	40	0	91.1	39 - 160				
Benzene	19.79	1.0	20	0	99.0	79 - 120				
Bromobenzene	20.31	1.0	20	0	102	80 - 120				
Bromochloromethane	19.18	1.0	20	0	95.9	78 - 123				
Bromodichloromethane	20.1	1.0	20	0	100	79 - 125				
Bromoform	18.23	1.0	20	0	91.1	66 - 130				
Bromomethane	20.53	1.0	20	0	103	53 - 141				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220810** Units: **ug/L** Analysis Date: **10-Aug-2022 11:49**
Client ID: Run ID: **VOA6_414821** SeqNo: **6796143** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.82	2.0	40	0	99.6	64 - 133				
Carbon tetrachloride	19.73	1.0	20	0	98.7	72 - 136				
Chlorobenzene	20.08	1.0	20	0	100	82 - 118				
Chloroethane	19.47	1.0	20	0	97.3	60 - 138				
Chloroform	20.34	1.0	20	0	102	79 - 124				
Chloromethane	22.48	1.0	20	0	112	50 - 139				
cis-1,2-Dichloroethene	20.33	1.0	20	0	102	78 - 123				
cis-1,3-Dichloropropene	19.91	1.0	20	0	99.5	75 - 124				
Dibromochloromethane	19.37	1.0	20	0	96.9	74 - 126				
Dibromomethane	19.53	1.0	20	0	97.6	79 - 123				
Dichlorodifluoromethane	22.11	1.0	20	0	111	32 - 152				
Ethylbenzene	20.69	1.0	20	0	103	79 - 121				
Hexachlorobutadiene	21.7	1.0	20	0	108	66 - 134				
Isopropylbenzene	21.1	1.0	20	0	105	72 - 131				
m,p-Xylene	41.42	2.0	40	0	104	80 - 121				
Methylene chloride	21.07	2.0	20	0	105	74 - 124				
Naphthalene	19.5	1.0	20	0	97.5	61 - 128				
n-Butylbenzene	22.89	1.0	20	0	114	75 - 128				
n-Propylbenzene	22.03	1.0	20	0	110	76 - 126				
o-Xylene	20.08	1.0	20	0	100	78 - 122				
sec-Butylbenzene	22.14	1.0	20	0	111	77 - 126				
Styrene	20.41	1.0	20	0	102	78 - 123				
tert-Butylbenzene	21.52	1.0	20	0	108	78 - 124				
Tetrachloroethene	20.27	1.0	20	0	101	74 - 129				
Toluene	19.89	1.0	20	0	99.4	80 - 121				
trans-1,2-Dichloroethene	20.48	1.0	20	0	102	75 - 124				
trans-1,3-Dichloropropene	20.01	1.0	20	0	100	73 - 127				
Trichloroethene	19.83	1.0	20	0	99.2	79 - 123				
Trichlorofluoromethane	19.94	1.0	20	0	99.7	65 - 141				
Vinyl chloride	19.22	1.0	20	0	96.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*55.93*	*1.0*	*50*	*0*	*112*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.49*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*54.11*	*1.0*	*50*	*0*	*108*	*80 - 119*				
Surr: Toluene-d8	*51.03*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080472-01MS** Units: **ug/L** Analysis Date: **10-Aug-2022 20:13**
Client ID: **LH18/24-SP650_080922** Run ID: **VOA6_414821** SeqNo: **6797045** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.89	1.0	20	0	109	78 - 124				
1,1,1-Trichloroethane	22.01	1.0	20	0	110	74 - 131				
1,1,2,2-Tetrachloroethane	20.8	1.0	20	0	104	71 - 121				
1,1,2-Trichloroethane	21.28	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.54	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	20.42	1.0	20	0	102	71 - 131				
1,1-Dichloropropene	23.02	1.0	20	0	115	78 - 125				
1,2,3-Trichlorobenzene	15.25	1.0	20	0	76.3	69 - 129				
1,2,3-Trichloropropane	20.09	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	17.53	1.0	20	0	87.6	69 - 130				
1,2,4-Trimethylbenzene	22.96	1.0	20	0	115	76 - 124				
1,2-Dibromo-3-chloropropane	17.8	1.0	20	0	89.0	62 - 128				
1,2-Dibromoethane	21.47	1.0	20	0	107	77 - 121				
1,2-Dichlorobenzene	21.71	1.0	20	0	109	80 - 119				
1,2-Dichloroethane	20.87	1.0	20	0	104	73 - 128				
1,2-Dichloropropane	21.27	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	23.3	1.0	20	0	117	75 - 124				
1,3-Dichlorobenzene	22.3	1.0	20	0	111	80 - 119				
1,3-Dichloropropane	21.3	1.0	20	0	107	80 - 119				
1,4-Dichlorobenzene	21.73	1.0	20	0	109	79 - 118				
2,2-Dichloropropane	20.88	1.0	20	0	104	60 - 139				
2-Butanone	32.93	2.0	40	0	82.3	56 - 143				
2-Chlorotoluene	22.57	1.0	20	0	113	79 - 122				
2-Hexanone	41.75	2.0	40	0	104	57 - 139				
4-Chlorotoluene	22.91	1.0	20	0	115	78 - 122				
4-Isopropyltoluene	23.88	1.0	20	0	119	77 - 127				
4-Methyl-2-pentanone	44.49	2.0	40	0	111	67 - 130				
Acetone	30.36	2.0	40	0	75.9	39 - 160				
Benzene	21.59	1.0	20	0	108	79 - 120				
Bromobenzene	22.75	1.0	20	0	114	80 - 120				
Bromochloromethane	18.84	1.0	20	0	94.2	78 - 123				
Bromodichloromethane	21.34	1.0	20	0	107	79 - 125				
Bromoform	19.36	1.0	20	0	96.8	66 - 130				
Bromomethane	17.69	1.0	20	0	88.4	53 - 141				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080472-01MS** Units: **ug/L** Analysis Date: **10-Aug-2022 20:13**
Client ID: **LH18/24-SP650_080922** Run ID: **VOA6_414821** SeqNo: **6797045** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	44.07	2.0	40	0	110	64 - 133				
Carbon tetrachloride	22.81	1.0	20	0	114	72 - 136				
Chlorobenzene	22.42	1.0	20	0	112	82 - 118				
Chloroethane	18.2	1.0	20	0	91.0	60 - 138				
Chloroform	20.9	1.0	20	0	104	79 - 124				
Chloromethane	25.35	1.0	20	0	127	50 - 139				
cis-1,2-Dichloroethene	24.2	1.0	20	3.185	105	78 - 123				
cis-1,3-Dichloropropene	20.65	1.0	20	0	103	75 - 124				
Dibromochloromethane	21.46	1.0	20	0	107	74 - 126				
Dibromomethane	20.86	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	18.98	1.0	20	0	94.9	32 - 152				
Ethylbenzene	23.04	1.0	20	0	115	79 - 121				
Hexachlorobutadiene	21.26	1.0	20	0	106	66 - 134				
Isopropylbenzene	23.41	1.0	20	0	117	72 - 131				
m,p-Xylene	46.21	2.0	40	0	116	80 - 121				
Methylene chloride	20.19	2.0	20	0	101	74 - 124				
Naphthalene	13.61	1.0	20	0	68.1	61 - 128				
n-Butylbenzene	24.05	1.0	20	0	120	75 - 128				
n-Propylbenzene	24.38	1.0	20	0	122	76 - 126				
o-Xylene	22.54	1.0	20	0	113	78 - 122				
sec-Butylbenzene	23.9	1.0	20	0	119	77 - 126				
Styrene	22.22	1.0	20	0	111	78 - 123				
tert-Butylbenzene	23.84	1.0	20	0	119	78 - 124				
Tetrachloroethene	22.65	1.0	20	0	113	74 - 129				
Toluene	22.66	1.0	20	0	113	80 - 121				
trans-1,2-Dichloroethene	21.41	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	20.36	1.0	20	0	102	73 - 127				
Trichloroethene	21.95	1.0	20	0	110	79 - 123				
Trichlorofluoromethane	20.95	1.0	20	0	105	65 - 141				
Vinyl chloride	19.8	1.0	20	0	99.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*47.25*	*1.0*	*50*	*0*	*94.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.77*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*47.67*	*1.0*	*50*	*0*	*95.3*	*80 - 119*				
Surr: Toluene-d8	*53.02*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22080472-01MSD** Units: **ug/L** Analysis Date: **10-Aug-2022 20:35**
Client ID: **LH18/24-SP650_080922** Run ID: **VOA6_414821** SeqNo: **6797046** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.28	1.0	20	0	106	78 - 124	21.89	2.82	20	
1,1,1-Trichloroethane	20.86	1.0	20	0	104	74 - 131	22.01	5.37	20	
1,1,2,2-Tetrachloroethane	21.08	1.0	20	0	105	71 - 121	20.8	1.35	20	
1,1,2-Trichloroethane	20.82	1.0	20	0	104	80 - 119	21.28	2.18	20	
1,1-Dichloroethane	20.1	1.0	20	0	100	77 - 125	20.54	2.19	20	
1,1-Dichloroethene	19.33	1.0	20	0	96.7	71 - 131	20.42	5.46	20	
1,1-Dichloropropene	21.79	1.0	20	0	109	78 - 125	23.02	5.49	20	
1,2,3-Trichlorobenzene	20.62	1.0	20	0	103	69 - 129	15.25	29.9	20	R
1,2,3-Trichloropropane	20.55	1.0	20	0	103	73 - 122	20.09	2.28	20	
1,2,4-Trichlorobenzene	20.81	1.0	20	0	104	69 - 130	17.53	17.1	20	
1,2,4-Trimethylbenzene	22.5	1.0	20	0	113	76 - 124	22.96	2.03	20	
1,2-Dibromo-3-chloropropane	21.12	1.0	20	0	106	62 - 128	17.8	17.1	20	
1,2-Dibromoethane	20.89	1.0	20	0	104	77 - 121	21.47	2.74	20	
1,2-Dichlorobenzene	21.47	1.0	20	0	107	80 - 119	21.71	1.12	20	
1,2-Dichloroethane	20.52	1.0	20	0	103	73 - 128	20.87	1.71	20	
1,2-Dichloropropane	20.58	1.0	20	0	103	78 - 122	21.27	3.27	20	
1,3,5-Trimethylbenzene	22.58	1.0	20	0	113	75 - 124	23.3	3.16	20	
1,3-Dichlorobenzene	21.88	1.0	20	0	109	80 - 119	22.3	1.91	20	
1,3-Dichloropropane	20.9	1.0	20	0	105	80 - 119	21.3	1.88	20	
1,4-Dichlorobenzene	21.32	1.0	20	0	107	79 - 118	21.73	1.89	20	
2,2-Dichloropropane	19.78	1.0	20	0	98.9	60 - 139	20.88	5.46	20	
2-Butanone	34.17	2.0	40	0	85.4	56 - 143	32.93	3.67	20	
2-Chlorotoluene	21.7	1.0	20	0	109	79 - 122	22.57	3.93	20	
2-Hexanone	42.25	2.0	40	0	106	57 - 139	41.75	1.18	20	
4-Chlorotoluene	22.07	1.0	20	0	110	78 - 122	22.91	3.71	20	
4-Isopropyltoluene	22.82	1.0	20	0	114	77 - 127	23.88	4.56	20	
4-Methyl-2-pentanone	44.62	2.0	40	0	112	67 - 130	44.49	0.289	20	
Acetone	30.09	2.0	40	0	75.2	39 - 160	30.36	0.886	20	
Benzene	20.87	1.0	20	0	104	79 - 120	21.59	3.36	20	
Bromobenzene	22.08	1.0	20	0	110	80 - 120	22.75	2.97	20	
Bromochloromethane	18.76	1.0	20	0	93.8	78 - 123	18.84	0.434	20	
Bromodichloromethane	20.98	1.0	20	0	105	79 - 125	21.34	1.7	20	
Bromoform	19.53	1.0	20	0	97.7	66 - 130	19.36	0.906	20	
Bromomethane	14.54	1.0	20	0	72.7	53 - 141	17.69	19.5	20	

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414821 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22080472-01MSD** Units: **ug/L** Analysis Date: **10-Aug-2022 20:35**
Client ID: **LH18/24-SP650_080922** Run ID: **VOA6_414821** SeqNo: **6797046** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.91	2.0	40	0	102	64 - 133	44.07	7.43	20	
Carbon tetrachloride	21.6	1.0	20	0	108	72 - 136	22.81	5.47	20	
Chlorobenzene	21.36	1.0	20	0	107	82 - 118	22.42	4.86	20	
Chloroethane	17.86	1.0	20	0	89.3	60 - 138	18.2	1.87	20	
Chloroform	19.97	1.0	20	0	99.9	79 - 124	20.9	4.52	20	
Chloromethane	26.87	1.0	20	0	134	50 - 139	25.35	5.83	20	
cis-1,2-Dichloroethene	23.19	1.0	20	3.185	100	78 - 123	24.2	4.28	20	
cis-1,3-Dichloropropene	20.28	1.0	20	0	101	75 - 124	20.65	1.79	20	
Dibromochloromethane	21.16	1.0	20	0	106	74 - 126	21.46	1.4	20	
Dibromomethane	20.61	1.0	20	0	103	79 - 123	20.86	1.19	20	
Dichlorodifluoromethane	17.78	1.0	20	0	88.9	32 - 152	18.98	6.51	20	
Ethylbenzene	21.59	1.0	20	0	108	79 - 121	23.04	6.51	20	
Hexachlorobutadiene	21.36	1.0	20	0	107	66 - 134	21.26	0.484	20	
Isopropylbenzene	22.21	1.0	20	0	111	72 - 131	23.41	5.27	20	
m,p-Xylene	44.09	2.0	40	0	110	80 - 121	46.21	4.71	20	
Methylene chloride	19.53	2.0	20	0	97.7	74 - 124	20.19	3.29	20	
Naphthalene	18.58	1.0	20	0	92.9	61 - 128	13.61	30.8	20	R
n-Butylbenzene	23.06	1.0	20	0	115	75 - 128	24.05	4.22	20	
n-Propylbenzene	23.22	1.0	20	0	116	76 - 126	24.38	4.91	20	
o-Xylene	21.44	1.0	20	0	107	78 - 122	22.54	5	20	
sec-Butylbenzene	23.06	1.0	20	0	115	77 - 126	23.9	3.56	20	
Styrene	21.4	1.0	20	0	107	78 - 123	22.22	3.76	20	
tert-Butylbenzene	22.88	1.0	20	0	114	78 - 124	23.84	4.07	20	
Tetrachloroethene	21.07	1.0	20	0	105	74 - 129	22.65	7.24	20	
Toluene	21.59	1.0	20	0	108	80 - 121	22.66	4.81	20	
trans-1,2-Dichloroethene	20.48	1.0	20	0	102	75 - 124	21.41	4.45	20	
trans-1,3-Dichloropropene	20.54	1.0	20	0	103	73 - 127	20.36	0.885	20	
Trichloroethene	20.96	1.0	20	0	105	79 - 123	21.95	4.62	20	
Trichlorofluoromethane	19.12	1.0	20	0	95.6	65 - 141	20.95	9.13	20	
Vinyl chloride	18.33	1.0	20	0	91.7	58 - 137	19.8	7.71	20	
Surr: 1,2-Dichloroethane-d4	*46.87*	*1.0*	*50*	*0*	*93.7*	*81 - 118*	*47.25*	*0.813*	*20*	
Surr: 4-Bromofluorobenzene	*50.73*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.77*	*0.0929*	*20*	
Surr: Dibromofluoromethane	*47.52*	*1.0*	*50*	*0*	*95.0*	*80 - 119*	*47.67*	*0.317*	*20*	
Surr: Toluene-d8	*52.53*	*1.0*	*50*	*0*	*105*	*89 - 112*	*53.02*	*0.935*	*20*	

ALS Houston, US Date: 24-Aug-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:	HS22080472

QC BATCH REPORT

Batch ID:	**R414821 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22080472-01 HS22080472-03

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22080472

QC BATCH REPORT

Batch ID: R414786 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R414786** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795335** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R414786** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795334** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.27	0.0100	0.25	0	108	90 - 111				

MS Sample ID: **HS22080472-01MS** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: **LH18/24-SP650_080922** Run ID: **UV-2450_414786** SeqNo: **6795337** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.222	0.0100	0.25	0	88.8	90 - 111				S

MSD Sample ID: **HS22080472-01MSD** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: **LH18/24-SP650_080922** Run ID: **UV-2450_414786** SeqNo: **6795336** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.223	0.0100	0.25	0	89.2	90 - 111	0.222	0.449	20	S

The following samples were analyzed in this batch: HS22080472-01

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: **HS22080472**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 24-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080472 **Date/Time Received:** **10-Aug-2022 09:45**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Pablo Marinez	10-Aug-2022 10:55	**Reviewed by:**	/S/ Ragen Giga	16-Aug-2022 18:42
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	0.5°C/1.0°C UC/C	IR 31
Cooler(s)/Kit(s):	48925	
Date/Time sample(s) sent to storage:	8/10/22 11:00	

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: Dane Wacasey

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

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY EFFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS22080472

Bhate Environmental Associates, Inc.
ıghorn GW Treatment Plant Monthly Effluent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_080922	Water	08/09/22 / 13:00		3	X					HCL	
LH18/24-SP650_080922	Water	08/09/22 / 13:00		2			X	X		NONE	
LH18/24-SP650_080922_AIX	Water	08/09/22 / 13:00		1					X	NONE	
LH18/24-SP650_080922	Water	08/09/22 / 13:00		1		X				HNO3	
Trip Blank	Water	08/09/22		2	X					HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/09/22	14:30	Paul Kramer	8/10/22	0945						

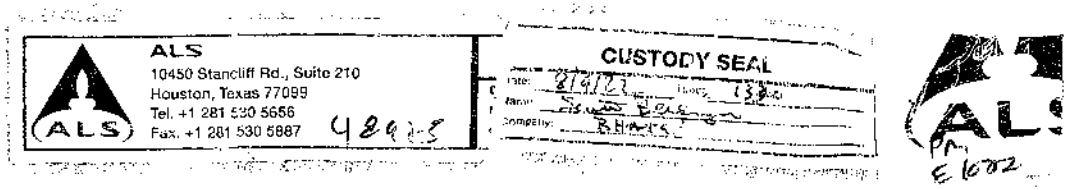
For Lab Use Only

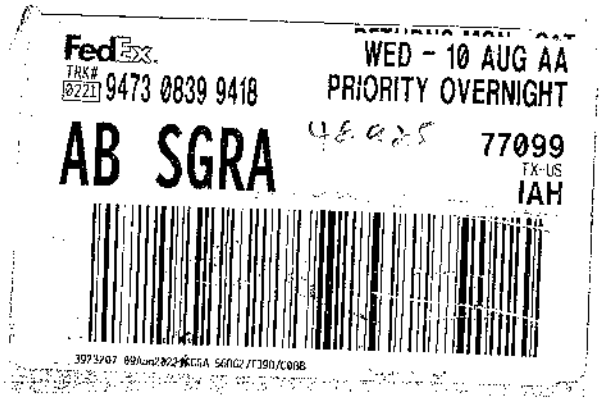
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

40 CFR 136 USC 9605

(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
CUSTODY SEAL


FedEx
TRK# 0221 9473 0839 9418
WED - 10 AUG AA
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

August 12, 2022 Service Request No:E2200778

Bernadette Fini
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22080472

Dear Bernadette,

Enclosed are the results of the sample(s) submitted to our laboratory August 10, 2022
For your reference, these analyses have been assigned our service request number **E2200778.**

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
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2200778
Project:	HS22080472	**Date Received:**	08/10/22
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

One sample was received for analysis at ALS Environmental in Houston on 08/10/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200344: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200778
Project: HS22080472

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200778-001	LH18/24-SP650_080922_AIX	8/9/2022	1300

Service Request Summary

Folder #: **E2200778**
Client Name: ALS Environmental - US
Project Name: HS22080472
Project Number:

Report To: Bernadette Fini
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: bernadette.fini@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080472
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200778-001	LH18/24-SP650_080922_AIX	Water	08/09/22 1300	**IV**

Service Request Summary

Folder #: **E2200778**
Client Name: ALS Environmental - US
Project Name: HS22080472
Project Number:

Report To: Bernadette Fini
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: bernadette.fini@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080472
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM 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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19346**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080472
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080472-02**	**LH18/24-SP650_080922_AIX**	**Water**	**09 Aug 2022 13:00**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022

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: E1022 11:10

Received By: _____ Date/Time: _____

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

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Sample Receipt Checklist

Work Order ID: HS22080473 **Date/Time received:** 10 Aug 2022 09:45

Client name: Bhate Environmental Associates, Inc. **Received by:** Pablo Marinez

Completed/By: 10 Aug 2022 10:59 (Date/Time) Pablo Marinez (eSignature) **Reviewed/By:** (Date/Time) (eSignature)

Matrices: WATER **Carrier name:** FedEx Priority Overnight

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 ID(s): CLIENT
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): 0.5°C/1.0°C UC/C IR 31

Cooler Information: 1 Cooler(s), 48925

Date/Time sample(s) sent to storage: 8/10/22 11:00

Water - VOA vials have zero headspace?	☐ Yes	☐ No	☑ No VOA vials submitted
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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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#: 404310 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/10/22 12:10

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200776-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200776-002	LH18/24-SP650_080922_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200777-001	LH18/24-SP140_080922	.01	6850/ClO4 DOD			Water	10mL	
4	E2200778-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	EQ2200344-01	MB		6850/ClO4 DOD			Liquid	10mL	
6	EQ2200344-02	LCS		6850/ClO4 DOD			Liquid	10mL	
7	EQ2200344-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200344-02 1.00µL EQ2200344-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200776-001 100.00µL E2200776-002 100.00µL E2200777-001 100.00µL E2200778-001 100.00µL EQ2200344-01 100.00µL EQ2200344-02 100.00µL
EQ2200344-03 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 8/10/22 12:10
Finished: 8/10/22 12:40
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ 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:**	E2200778
Project:	HS22080472	**Date Collected:**	8/ 9/22 1300
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	LH18/24-SP650_080922_AIX	**Units:**	µg/L
Lab Code:	E2200778-001	**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	**1.98**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 16:24	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200778
Project:	HS22080472	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200344-01	**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	8/10/22	8/11/22 11:14	404310	773685	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22080472
Sample Matrix: Water

Service Request: E2200778
Date Analyzed: 8/11/22

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: 404310

	Lab Control Sample EQ2200344-02			Duplicate Lab Control Sample EQ2200344-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.108	0.100	108	0.109	0.100	109	84 - 119	1	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:**	E2200778
Project:	HS22080472	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-02	**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	**0.108**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 11:41	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200778
Project:	HS22080472	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-03	**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	**0.109**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 12:10	404310	773685	

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Houston, TX 77099
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August 24, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080473**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia Olive,

ALS Environmental received 1 sample(s) on Aug 10, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22080473

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080473-01	LH18/24-SP140_080922	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22080473

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Metals by Method SW6020A

Batch ID: 182618

Sample ID: HS22080472-01MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SW7196

Batch ID: R414786

Sample ID: HS22080472-01MS

- MS and MSD are for an unrelated sample

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder:HS22080473
Sample ID: LH18/24-SP140_080922
Lab ID:HS22080473-01
Collection Date: 09-Aug-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 19-Aug-2022		Analyst: YP
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Aug-2022 13:14
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Aug-2022 13:14
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: AP
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	10-Aug-2022 12:40
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Aug-2022 16:32

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.

Project: Longhorn GW Treatment Plant Monthly Influent Samples

WorkOrder: HS22080473

Batch ID: 182618 **Start Date:** 19 Aug 2022 09:00 **End Date:** 19 Aug 2022 13:00

Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22080473-01		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22080473

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 182618 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22080473-01	LH18/24-SP140_080922	09 Aug 2022 13:00		19 Aug 2022 09:00	23 Aug 2022 13:14	1
Batch ID: R414786 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22080473-01	LH18/24-SP140_080922	09 Aug 2022 13:00			10 Aug 2022 12:40	1
Batch ID: R414981 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080473-01	LH18/24-SP140_080922	09 Aug 2022 13:00			12 Aug 2022 16:32	1

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22080473

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:36**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813234** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:38**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813235** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05753	0.00500	0.05	0	115	80 - 120				
Silver	0.04447	0.00500	0.05	0	88.9	85 - 116				

MS Sample ID: **HS22080472-01MS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:08**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815411** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04953	0.00500	0.05	0.000217	98.6	80 - 120				
Silver	0.04119	0.00500	0.05	0.000012	82.4	85 - 116				S

MSD Sample ID: **HS22080472-01MSD** Units: **mg/L** Analysis Date: **23-Aug-2022 15:05**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815479** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04688	0.00500	0.05	0	93.8	80 - 120	0.04953	5.5	20	
Silver	0.04077	0.00500	0.05	0	81.5	85 - 116	0.04119	1.02	20	S

PDS Sample ID: **HS22080472-01PDS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:12**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815413** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.1085	0.00500	0.1	0.000217	108	80 - 120				
Silver	0.1035	0.00500	0.1	0.000012	103	80 - 120				

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22080473

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22080472-01SD** Units: **mg/L** Analysis Date: **23-Aug-2022 13:06**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815410** PrepDate: **19-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0125	0.0250					0.000217	0	10	U
Silver	0.00250	0.0250					0.000012	0	10	U

The following samples were analyzed in this batch: HS22080473-01

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22080473

QC BATCH REPORT

Batch ID: R414786 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R414786** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795335** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R414786** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795334** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.27	0.0100	0.25	0	108	90 - 111				

MS Sample ID: **HS22080472-01MS** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795337** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.222	0.0100	0.25	0	88.8	90 - 111				S

MSD Sample ID: **HS22080472-01MSD** Units: **mg/L** Analysis Date: **10-Aug-2022 12:40**
Client ID: Run ID: **UV-2450_414786** SeqNo: **6795336** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.223	0.0100	0.25	0	89.2	90 - 111	0.222	0.449	20	S

The following samples were analyzed in this batch: HS22080473-01

ALS Houston, US Date: 24-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: **HS22080473**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 24-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080473 **Date/Time Received:** **10-Aug-2022 09:45**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Pablo Marinez	10-Aug-2022 10:59	**Reviewed by:**	/S/ Ragen Giga	17-Aug-2022 08:57
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	0.5°C/1.0°C UC/C	IR 31
Cooler(s)/Kit(s):	48925	
Date/Time sample(s) sent to storage:	8/10/22 11:00	

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: Ragen Gigi

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT MONTHLY INFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22080473

Bhate Environmental Associates, Inc.
nghorn GW Treatment Plant Monthly Influent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: SILVER & SELENIUM	Analyses: HEXAVALENT CHROMIUM	Analyses: PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_080922	Water	08/09/22 / 13:00		1	X			HNO3	
LH18/24-SP140_080922	Water	08/09/22 / 13:00		2		X	X	NONE	

Additional Remarks: STANDARD TURN AROUND TIME

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/09/22	13:30		8/10	9:45						

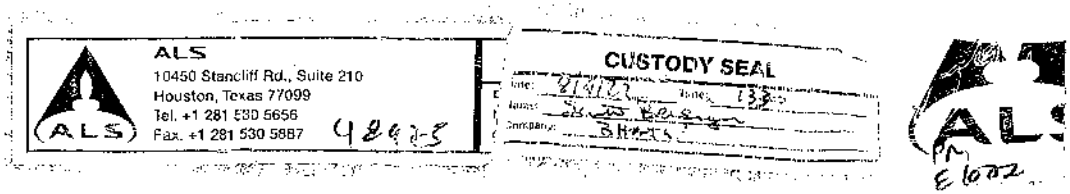
For Lab Use Only

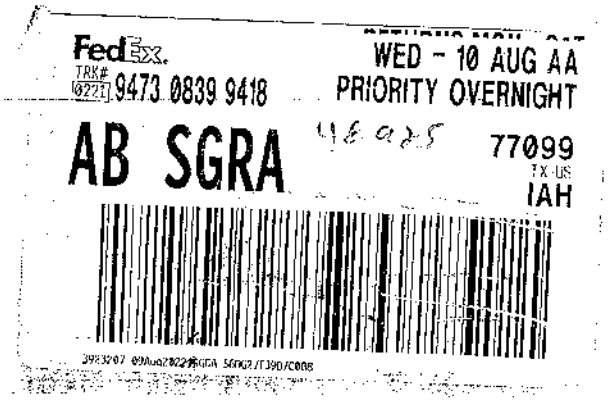
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

76425 d.5c (R31 (APH)

(Word) S:\I-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
48425
CUSTODY SEAL
ALS
PM
E 6032


FedEx.
TRK# 9473 0839 9418
WED - 10 AUG AA
PRIORITY OVERNIGHT
AB SGRA
48425
77099
TX-US
IAH

August 12, 2022 Service Request No:E2200777

Bernadette Fini
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22080473

Dear Bernadette,

Enclosed are the results of the sample(s) submitted to our laboratory August 10, 2022
For your reference, these analyses have been assigned our service request number **E2200777.**

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

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 Environmental - US	**Service Request No.:**	E2200777
Project:	HS22080473	**Date Received:**	08/10/22
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

One sample was received for analysis at ALS Environmental in Houston on 08/10/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200344: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200777
Project: HS22080473

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200777-001	LH18/24-SP140_080922	8/9/2022	1300

Service Request Summary

Folder #: **E2200777**
Client Name: ALS Environmental - US
Project Name: HS22080473
Project Number:

Report To: Bernadette Fini
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: bernadette.fini@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080473
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200777-001	LH18/24-SP140_080922	Water	08/09/22 1300	**IV**

Service Request Summary

Folder #: **E2200777**
Client Name: ALS Environmental - US
Project Name: HS22080473
Project Number:

Report To: Bernadette Fini
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: bernadette.fini@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080473
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM 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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

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:** **19348**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080473
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080473-01**	**LH18/24-SP140_080922**	**Water**	**09 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			24 Aug 2022

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: 8/10/22 1110

Received By: _____ Date/Time: _____

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

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Sample Receipt Checklist

Work Order ID: HS22080473 **Date/Time received:** 10 Aug 2022 09:45

Client name: Bhate Environmental Associates, Inc. **Received by:** Pablo Marinez

Completed/By:	10 Aug 2022 10:59	Pablo Marinez	**Reviewed/By:**		
	Date/Time	eSignature		Date/Time	eSignature

Matrices: WATER **Carrier name:** FedEx Priority Overnight

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 ID(s): CLIENT
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): 0.5°C/1.0°C UC/C IR 31

Cooler Information: 1 Cooler(s), 48925

Date/Time sample(s) sent to storage: 8/10/22 11:00

Water - VOA vials have zero headspace?	☐ Yes	☐ No	☑ No VOA vials submitted
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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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
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Preparation Information Benchsheet

Prep Run#: 404310 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/10/22 12:10

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200776-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200776-002	LH18/24-SP650_080922_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200777-001	LH18/24-SP140_080922	.01	6850/ClO4 DOD			Water	10mL	
4	E2200778-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	EQ2200344-01	MB		6850/ClO4 DOD			Liquid	10mL	
6	EQ2200344-02	LCS		6850/ClO4 DOD			Liquid	10mL	
7	EQ2200344-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200344-02 1.00µL EQ2200344-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200776-001 100.00µL E2200776-002 100.00µL E2200777-001 100.00µL E2200778-001 100.00µL EQ2200344-01 100.00µL EQ2200344-02 100.00µL
EQ2200344-03 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 8/10/22 12:10
Finished: 8/10/22 12:40
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

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:**	E2200777
Project:	HS22080473	**Date Collected:**	8/ 9/22 1300
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	LH18/24-SP140_080922	**Units:**	µg/L
Lab Code:	E2200777-001	**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	**14700**		100	50.0	25.0	1000	8/10/22	8/11/22 16:02	404310	773685	*

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200777
Project:	HS22080473	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200344-01	**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	8/10/22	8/11/22 11:14	404310	773685	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2200777
Project:	HS22080473	**Date Analyzed:**	8/11/22
Sample Matrix:	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:	404310

	Lab Control Sample EQ2200344-02			Duplicate Lab Control Sample EQ2200344-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.108	0.100	108	0.109	0.100	109	84 - 119	1	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:**	E2200777
Project:	HS22080473	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-02	**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	**0.108**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 11:41	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200777
Project:	HS22080473	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-03	**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	**0.109**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 12:10	404310	773685	

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August 11, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080474**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 10, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080474

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080474-01	LH18/24-SP650_080922	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐
HS22080474-02	LH18/24-SP650_080922_AIX	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐
HS22080474-03	LH18/24-SP650_080922_BIX	Water		09-Aug-2022 13:00	10-Aug-2022 09:45	☐

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080474

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E415.1

Batch ID: R414862

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

WetChemistry by Method E350.3

Batch ID: R414861

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

WetChemistry by Method E365.3

Batch ID: R414811

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

ALS Houston, US

Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22080474

Sample ID: LH18/24-SP650_080922

Lab ID:HS22080474-01

Collection Date: 09-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**17**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	11-Aug-2022 12:05
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: AP
Phosphorus, Total Orthophosphate (As P)	**4.50**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	10-Aug-2022 16:47
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: MZD
Organic Carbon, Total	**7.06**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	11-Aug-2022 10:09

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

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22080474
Sample ID: LH18/24-SP650_080922_AIX
Lab ID:HS22080474-02
Collection Date: 09-Aug-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Aug-2022 15:52

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

ALS Houston, US

Date: 11-Aug-22

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS22080474
Sample ID:	LH18/24-SP650_080922_BIX	Lab ID:HS22080474-03
Collection Date:	09-Aug-2022 13:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Aug-2022 15:52

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

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080474

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R414811 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22080474-01	LH18/24-SP650_080922	09 Aug 2022 13:00			10 Aug 2022 16:47	10
Batch ID: R414861 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22080474-01	LH18/24-SP650_080922	09 Aug 2022 13:00			11 Aug 2022 12:05	1
Batch ID: R414862 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22080474-01	LH18/24-SP650_080922	09 Aug 2022 13:00			11 Aug 2022 10:09	1
Batch ID: R414890 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080474-02	LH18/24-SP650_080922_AIX	09 Aug 2022 13:00			11 Aug 2022 15:52	1
HS22080474-03	LH18/24-SP650_080922_BIX	09 Aug 2022 13:00			11 Aug 2022 15:52	1

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080474

QC BATCH REPORT

Batch ID: R414811 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R414811** Units: **mg/L** Analysis Date: **10-Aug-2022 16:47**
Client ID: Run ID: **UV-2450_414811** SeqNo: **6795928** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R414811** Units: **mg/L** Analysis Date: **10-Aug-2022 16:47**
Client ID: Run ID: **UV-2450_414811** SeqNo: **6795927** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.263	0.0250	0.25	0	105	85 - 115				

MS Sample ID: **HS22080474-01MS** Units: **mg/L** Analysis Date: **10-Aug-2022 16:47**
Client ID: **LH18/24-SP650_080922** Run ID: **UV-2450_414811** SeqNo: **6795930** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	7.13	0.250	2.5	4.5	105	80 - 120				

MSD Sample ID: **HS22080474-01MSD** Units: **mg/L** Analysis Date: **10-Aug-2022 16:47**
Client ID: **LH18/24-SP650_080922** Run ID: **UV-2450_414811** SeqNo: **6795929** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	7.23	0.250	2.5	4.5	109	80 - 120	7.13	1.39	20	

The following samples were analyzed in this batch: HS22080474-01

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080474

QC BATCH REPORT

Batch ID: R414861 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R414861** Units: **mg/L** Analysis Date: **11-Aug-2022 12:05**
Client ID: Run ID: **WetChem_HS_414861** SeqNo: **6797112** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R414861** Units: **mg/L** Analysis Date: **11-Aug-2022 12:05**
Client ID: Run ID: **WetChem_HS_414861** SeqNo: **6797111** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.11	0.20	10	0	91.1	80 - 120				

MS Sample ID: **HS22080474-01MS** Units: **mg/L** Analysis Date: **11-Aug-2022 12:05**
Client ID: **LH18/24-SP650_080922** Run ID: **WetChem_HS_414861** SeqNo: **6797114** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	27.96	0.20	10	17.37	106	80 - 120				

MSD Sample ID: **HS22080474-01MSD** Units: **mg/L** Analysis Date: **11-Aug-2022 12:05**
Client ID: **LH18/24-SP650_080922** Run ID: **WetChem_HS_414861** SeqNo: **6797113** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	27.97	0.20	10	17.37	106	80 - 120	27.96	0.0286	20	

The following samples were analyzed in this batch: HS22080474-01

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080474

QC BATCH REPORT

Batch ID: R414862 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-08112022** Units: **mg/L** Analysis Date: **11-Aug-2022 09:29**
Client ID: Run ID: **TOC_04_414862** SeqNo: **6797119** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-08112022** Units: **mg/L** Analysis Date: **11-Aug-2022 09:42**
Client ID: Run ID: **TOC_04_414862** SeqNo: **6797120** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.451	1.00	10	0	94.5	85 - 115				

LCSD Sample ID: **LCSD-08112022** Units: **mg/L** Analysis Date: **11-Aug-2022 09:55**
Client ID: Run ID: **TOC_04_414862** SeqNo: **6797121** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.471	1.00	10	0	94.7	85 - 115	9.451	0.211	20	

MS Sample ID: **HS22080474-01MS** Units: **mg/L** Analysis Date: **11-Aug-2022 10:24**
Client ID: **LH18/24-SP650_080922** Run ID: **TOC_04_414862** SeqNo: **6797123** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	17.26	1.00	10	7.058	102	80 - 120				

The following samples were analyzed in this batch: HS22080474-01

ALS Houston, US Date: 11-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22080474**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 11-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080474 **Date/Time Received:** **10-Aug-2022 09:45**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By: */S/ Pablo Marinez* (eSignature) 10-Aug-2022 11:02 (Date/Time) **Reviewed by:** */S/ Dane J. Wacasey* (eSignature) 11-Aug-2022 09:26 (Date/Time)

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	0.5°C/1.0°C UC/C	IR 31
Cooler(s)/Kit(s):	48925	
Date/Time sample(s) sent to storage:	8/10/22 11:05	

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: Dane Wacasey

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

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS22080474

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_080922	Water	08/09/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_080922	Water	08/09/22 / 13:00		1			X		NONE	
LH18/24–SP650_080922_AIX	Water	08/09/22 / 13:00		1				X	NONE	
LH18/24-SP650_080922_BIX	Water	08/09/22 / 13:00		1				X	NONE	

Additional Remarks: **24 HR. TAT on Perchlorate. Standard TAT on all other parameters.**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/09/22	13:30		8/10/22	9:45						

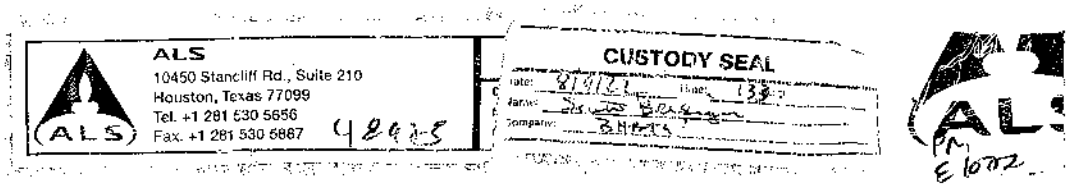
For Lab Use Only

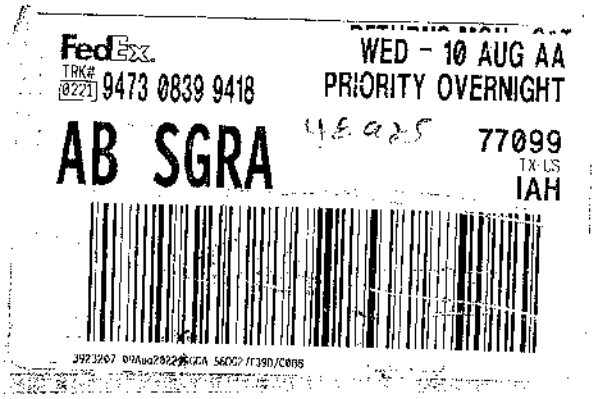
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

4625 USC 1R3 LT 4W5

(Word) S:\I-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
CUSTODY SEAL


FedEx
TRK# 0221 9473 0839 9418
WED - 10 AUG AA
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

August 11, 2022 Service Request No:E2200776

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: Perchlorates DODIV

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 10, 2022
For your reference, these analyses have been assigned our service request number **E2200776.**

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

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 Environmental - US	**Service Request No.:**	E2200776
Project:	Perchlorates DODIV	**Date Received:**	08/10/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 08/10/22.

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:

EQ2200344-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200776
Project: Perchlorates DODIV

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200776-001	LH18/24-SP650_080922_AIX	8/9/2022	1300
E2200776-002	LH18/24-SP650_080922_BIX	8/9/2022	1300

Service Request Summary

Folder #: **E2200776**
Client Name: ALS Environmental - US
Project Name: Perchlorates DODIV
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/11/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080474
EDD: BASIC_WQC_CASNo

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200776-001	LH18/24-SP650_080922_AIX	Water	08/09/22 1300	**IV**
E2200776-002	LH18/24-SP650_080922_BIX	Water	08/09/22 1300	**IV**

Service Request Summary

Folder #: **E2200776**
Client Name: ALS Environmental - US
Project Name: Perchlorates DODIV
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/10/22
Internal Due Date: 8/11/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080474
EDD: BASIC_WQC_CASNo

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:
Rush

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	IV report due 08/31

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
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www.alsglobal.com

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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19347**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080474
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080474-02**	**LH18/24-SP650_080922_AIX**	**Water**	**09 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			11 Aug 2022
2.	**HS22080474-03**	**LH18/24-SP650_080922_BIX**	**Water**	**09 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			11 Aug 2022

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: 8/10/22 11:10

Received By: _____ Date/Time: _____

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

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

Sample Receipt Checklist

Work Order ID: HS22080474 **Date/Time received:** 10 Aug 2022 09:45

Client name: Bhate Environmental Associates, Inc. **Received by:** Pablo Marinez

Completed/By: 10 Aug 2022 11:02 (Date/Time) Pablo Marinez (eSignature) **Reviewed/By:** (Date/Time) (eSignature)

Matrices: WATER **Carrier name:** FedEx Priority Overnight

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 ID(s): CLIENT	
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):	0.5°C/1.0°C UC/C		IR 31	
Cooler Information:	1 Cooler(s), 48925			
Date/Time sample(s) sent to storage:	8/10/22 11:05			
Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted	
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable	
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable	

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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#: 404310 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/10/22 12:10

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200776-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200776-002	LH18/24-SP650_080922_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200777-001	LH18/24-SP140_080922	.01	6850/ClO4 DOD			Water	10mL	
4	E2200778-001	LH18/24-SP650_080922_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	EQ2200344-01	MB		6850/ClO4 DOD			Liquid	10mL	
6	EQ2200344-02	LCS		6850/ClO4 DOD			Liquid	10mL	
7	EQ2200344-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200344-02 1.00µL EQ2200344-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200776-001 100.00µL E2200776-002 100.00µL E2200777-001 100.00µL E2200778-001 100.00µL EQ2200344-01 100.00µL EQ2200344-02 100.00µL
EQ2200344-03 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 8/10/22 12:10
Finished: 8/10/22 12:40
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/10/22

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:**	E2200776
Project:	Perchlorates DODIV	**Date Collected:**	8/ 9/22 1300
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	LH18/24-SP650_080922_AIX	**Units:**	µg/L
Lab Code:	E2200776-001	**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	**1.99**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 12:19	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200776
Project:	Perchlorates DODIV	**Date Collected:**	8/ 9/22 1300
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	LH18/24-SP650_080922_BIX	**Units:**	µg/L
Lab Code:	E2200776-002	**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	**31.3**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 12:28	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200776
Project:	Perchlorates DODIV	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200344-01	**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	8/10/22	8/11/22 11:14	404310	773685	

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	**Service Request:**	E2200776
Project:	Perchlorates DODIV	**Date Analyzed:**	8/11/22
Sample Matrix:	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:	404310

	Lab Control Sample EQ2200344-02			Duplicate Lab Control Sample EQ2200344-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.108	0.100	108	0.109	0.100	109	84 - 119	1	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:**	E2200776
Project:	Perchlorates DODIV	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-02	**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	**0.108**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 11:41	404310	773685	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200776
Project:	Perchlorates DODIV	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200344-03	**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	**0.109**		0.100	0.0500	0.0250	1	8/10/22	8/11/22 12:10	404310	773685	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

August 25, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080872**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 17, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080872

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080872-01	LH18/24-SP650_081622	Water		16-Aug-2022 13:00	17-Aug-2022 09:25	☐
HS22080872-02	LH18/24-SP650_081622_AIX	Water		16-Aug-2022 13:00	17-Aug-2022 09:25	☐
HS22080872-03	LH18/24-SP650_081622_BIX	Water		16-Aug-2022 13:00	17-Aug-2022 09:25	☐

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22080872

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R415756

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

WetChemistry by Method E415.1

Batch ID: R415747

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

WetChemistry by Method E365.3

Batch ID: R415375

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

ALS Houston, US

Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22080872

Sample ID: LH18/24-SP650_081622

Lab ID:HS22080872-01

Collection Date: 16-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**1.9**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	24-Aug-2022 14:15
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**3.91**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	18-Aug-2022 11:39
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**9.88**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	24-Aug-2022 11:48

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

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22080872

Sample ID: LH18/24-SP650_081622_AIX Lab ID:HS22080872-02

Collection Date: 16-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 18:26

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

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22080872

Sample ID: LH18/24-SP650_081622_BIX Lab ID:HS22080872-03

Collection Date: 16-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 18:26

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

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080872

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R415375 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22080872-01	LH18/24-SP650_081622	16 Aug 2022 13:00			18 Aug 2022 11:39	10
Batch ID: R415747 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22080872-01	LH18/24-SP650_081622	16 Aug 2022 13:00			24 Aug 2022 11:48	1
Batch ID: R415756 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22080872-01	LH18/24-SP650_081622	16 Aug 2022 13:00			24 Aug 2022 14:15	1
Batch ID: R415789 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080872-02	LH18/24-SP650_081622_AIX	16 Aug 2022 13:00			24 Aug 2022 18:26	1
HS22080872-03	LH18/24-SP650_081622_BIX	16 Aug 2022 13:00			24 Aug 2022 18:26	1

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080872

QC BATCH REPORT

Batch ID: R415375 (0) **Instrument: UV-2450** **Method: ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978**

MBLK Sample ID: **MBLK-R415375** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808581** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LOQ-R415375** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808600** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.024	0.0250	0.025	0	96.0	85 - 115				J

LCS Sample ID: **LCS-R415375** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808580** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.261	0.0250	0.25	0	104	85 - 115				

LCSD Sample ID: **LCSD-R415375** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808579** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.262	0.0250	0.25	0	105	85 - 115	0.261	0.382	20	

MS Sample ID: **HS22080943-01MS** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808583** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.288	0.0250	0.25	0.052	94.4	80 - 120				

MSD Sample ID: **HS22080943-01MSD** Units: **mg/L** Analysis Date: **18-Aug-2022 11:39**
Client ID: Run ID: **UV-2450_415375** SeqNo: **6808582** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.29	0.0250	0.25	0.052	95.2	80 - 120	0.288	0.692	20	

The following samples were analyzed in this batch: HS22080872-01

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080872

QC BATCH REPORT

Batch ID: R415747 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-08242022** Units: **mg/L** Analysis Date: **24-Aug-2022 11:10**
Client ID: Run ID: **TOC_04_415747** SeqNo: **6817137** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-08242022** Units: **mg/L** Analysis Date: **24-Aug-2022 11:24**
Client ID: Run ID: **TOC_04_415747** SeqNo: **6817138** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.357	1.00	10	0	93.6	85 - 115				

LCSD Sample ID: **LCSD-08242022** Units: **mg/L** Analysis Date: **24-Aug-2022 11:37**
Client ID: Run ID: **TOC_04_415747** SeqNo: **6817139** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.421	1.00	10	0	94.2	85 - 115	9.357	0.682	20	

MS Sample ID: **HS22080872-01MS** Units: **mg/L** Analysis Date: **24-Aug-2022 11:59**
Client ID: **LH18/24-SP650_081622** Run ID: **TOC_04_415747** SeqNo: **6817141** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	20.15	1.00	10	9.876	103	80 - 120				

The following samples were analyzed in this batch: HS22080872-01

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22080872

QC BATCH REPORT

Batch ID: R415756 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R415756** Units: **mg/L** Analysis Date: **24-Aug-2022 14:15**
Client ID: Run ID: **WetChem_HS_415756** SeqNo: **6817300** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R415756** Units: **mg/L** Analysis Date: **24-Aug-2022 14:15**
Client ID: Run ID: **WetChem_HS_415756** SeqNo: **6817299** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.058	0.20	10	0	90.6	80 - 120				

MS Sample ID: **HS22080872-01MS** Units: **mg/L** Analysis Date: **24-Aug-2022 14:15**
Client ID: **LH18/24-SP650_081622** Run ID: **WetChem_HS_415756** SeqNo: **6817302** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.07	0.20	10	1.907	81.6	80 - 120				

MSD Sample ID: **HS22080872-01MSD** Units: **mg/L** Analysis Date: **24-Aug-2022 14:15**
Client ID: **LH18/24-SP650_081622** Run ID: **WetChem_HS_415756** SeqNo: **6817301** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.07	0.20	10	1.907	81.6	80 - 120	10.07	0.0497	20	

The following samples were analyzed in this batch: HS22080872-01

ALS Houston, US Date: 25-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22080872**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 25-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080872 **Date/Time Received:** **17-Aug-2022 09:25**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Pablo Marinez	17-Aug-2022 10:54	**Reviewed by:**	/S/ Dane J. Wacasey	17-Aug-2022 15:52
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	1.0°C/1.5°C UC/C	IR 31
Cooler(s)/Kit(s):	RED	
Date/Time sample(s) sent to storage:	8/17/22 10:55	

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:

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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22080872

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_081622	Water	08/16/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_081622	Water	08/16/22 / 13:00		1			X		NONE	
LH18/24–SP650_081622_AIX	Water	08/16/22 / 13:00		1				X	NONE	
LH18/24-SP650_081622_BIX	Water	08/16/22 / 13:00		1				X	NONE	

Additional Remarks: **24 Hr. TAT on Perchlorate. Standard TAT on all other parameters.**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/16/22	13:30		8/17/22	9:25						

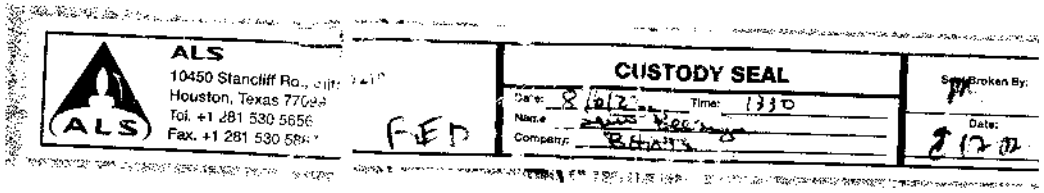
For Lab Use Only

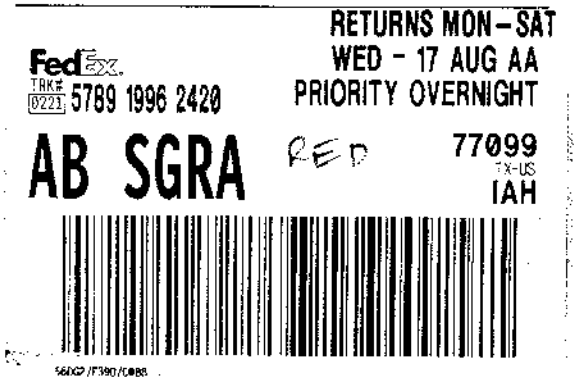
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

RBP 1,DC 1R3 LPRAS

(Word) S:\1-ees\Forms\Chain of Custody - BiWeekly


ALS
10450 Stancliff Rd., Suite
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
FED
CUSTODY SEAL
Date: 8/16/12
Time: 1330
Name:
Company: BHATTS
Seal Broken By:
Date: 8/17/12


FedEx.
TRK# 0221 5789 1996 2420
RETURNS MON-SAT
WED - 17 AUG AA
PRIORITY OVERNIGHT
AB SGRA
FED
77099
TX-US
IAH

August 18, 2022 Service Request No:E2200806

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: Perchlorates

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 17, 2022
For your reference, these analyses have been assigned our service request number **E2200806.**

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

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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 Environmental – US	**Service Request No.:**	E2200806
Project:	HS22080872	**Date Received:**	08/17/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 08/17/22.

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:

EQ2200356-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200806
Project: Perchlorates/HS22080872

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200806-001	LH18/24-SP650_081622_AIX	8/16/2022	1300
E2200806-002	LH18/24-SP650_081622_BIX	8/16/2022	1300

Service Request Summary

Folder #: **E2200806**
Client Name: ALS Environmental - US
Project Name: Perchlorates
Project Number: HS22080872

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 08/17/22
Internal Due Date: 8/18/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080872
EDD: BASIC_WQC_CASNo

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200806-001	LH18/24-SP650_081622_AIX	Water	08/16/22 1300	**IV**
E2200806-002	LH18/24-SP650_081622_BIX	Water	08/16/22 1300	**IV**

Service Request Summary

Folder #:	**E2200806**
Client Name:	ALS Environmental - US
Project Name:	Perchlorates
Project Number:	HS22080872

Report To:	Dane Wacasey ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-575-2190
Cell Number:	
Fax Number:	281-530-5887
E-mail:	dane.wacasey@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	JGUIN
Date Received:	08/17/22
Internal Due Date:	8/18/2022
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS22080872
EDD:	BASIC_WQC_CASNo

2 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Rush

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
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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:** **19409**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080872
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080872-02**	**LH18/24-SP650_081622_AIX**	**Water**	**16 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			18 Aug 2022
2.	**HS22080872-03**	**LH18/24-SP650_081622_BIX**	**Water**	**16 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			18 Aug 2022

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: 8/17/22 11:00

Received By: _____ Date/Time: _____

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

ALS Environmental

Cooler Receipt Form

Project Chemist _____

Client/Project Bhate/MIS

Thermometer ID IR31

Date/Time Received: 08/17/22 Initials: JG

Date/Time Logged in: 8/17/22 MBD Initials JG.

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ 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					1.5	☐
						☐
						☐
						☐

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:

HS-HRMSCoolerReceipt R1.0

ALS Environmental - Houston HRMS

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Houston, TX 77099
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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#: 404810 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 8/18/22 10:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200791-001	18CPTMW06_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200791-002	MW22_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200791-003	MW12_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200791-004	1824DPTMW06_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2200791-005	18WW08_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2200791-006	18WW09_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2200791-007	18CPTMW19_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2200791-008	18CPTMW19SW_081122	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2200792-001	18CPTMW04SW_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2200792-002	18CPTMW04_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2200792-003	109_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2200792-004	MW21_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2200792-005	18WW06_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2200792-006	18WW02_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2200792-007	MW13_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2200792-008	CO2_081022	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2200806-001	LH18/24-SP650_081622_AIX	.01	6850/ClO4 DOD			Water	10mL	
18	E2200806-002	LH18/24-SP650_081622_BIX	.01	6850/ClO4 DOD			Water	10mL	
19	E2200807-001	LOD Perchlorate Water	.01	6850/ClO4 DOD			Water	10mL	
20	E2200807-002	LOQ Perchlorate Water	.01	6850/ClO4 DOD			Water	10mL	
21	EQ2200356-01	MB		6850/ClO4 DOD			Liquid	10mL	
22	EQ2200356-02	LCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2200356-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200356-02 1.00µL EQ2200356-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200791-001	100.00µL	E2200791-002	100.00µL	E2200791-003	100.00µL	E2200791-004	100.00µL	E2200791-005	100.00µL	E2200791-006	100.00µL
E2200791-007	100.00µL	E2200791-008	100.00µL	E2200792-001	100.00µL	E2200792-002	100.00µL	E2200792-003	100.00µL	E2200792-004	100.00µL
E2200792-005	100.00µL	E2200792-006	100.00µL	E2200792-007	100.00µL	E2200792-008	100.00µL	E2200806-001	100.00µL	E2200806-002	100.00µL
E2200807-001	100.00µL	E2200807-002	100.00µL	EQ2200356-01	100.00µL	EQ2200356-02	100.00µL	EQ2200356-03	100.00µL		

Preparation Information Benchsheet

Prep Run#: 404810 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** **Prep Date/Time:** 8/18/22 10:04

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/18/22 10:04
Finished: 8/18/22 10:45
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/18/22

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:**	E2200806
Project:	Perchlorates/HS22080872	**Date Collected:**	8/16/22 1300
Sample Matrix:	Water	**Date Received:**	8/17/22
Sample Name:	LH18/24-SP650_081622_AIX	**Units:**	µg/L
Lab Code:	E2200806-001	**Basis:**	NA

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	**0.206**		0.100	0.0500	0.0250	1	8/18/22	8/18/22 16:31	404810	774554	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200806
Project:	Perchlorates/HS22080872	**Date Collected:**	8/16/22 1300
Sample Matrix:	Water	**Date Received:**	8/17/22
Sample Name:	LH18/24-SP650_081622_BIX	**Units:**	µg/L
Lab Code:	E2200806-002	**Basis:**	NA

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	**48.8**		0.100	0.0500	0.0250	1	8/18/22	8/18/22 14:03	404810	774554	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200806
Project:	Perchlorates/HS22080872	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200356-01	**Basis:**	NA

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	8/18/22	8/18/22 12:52	404810	774554	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: Perchlorates/HS22080872
Sample Matrix: Water

Service Request: E2200806
Date Analyzed: 8/18/22

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

Analytical Method: 6850
Prep Method:

Units: µg/L
Basis: NA

Extraction Lot: 404810

	Lab Control Sample EQ2200356-02			Duplicate Lab Control Sample EQ2200356-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0957	0.100	96	0.113	0.100	113	84 - 119	16 *	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:**	E2200806
Project:	Perchlorates/HS22080872	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200356-02	**Basis:**	NA

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	**0.0957**	J	0.100	0.0500	0.0250	1	8/18/22	8/18/22 13:19	404810	774554	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200806
Project:	Perchlorates/HS22080872	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200356-03	**Basis:**	NA

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	**0.113**		0.100	0.0500	0.0250	1	8/18/22	8/18/22 13:28	404810	774554	

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WorkOrder: HS22080897

Longhorn GW Treatment Plant Bi-Weekly Samples

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

19-Aug-2022

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HS22080897 Longhorn GW Treatment Plant BiWeekly Samples Final

ALS WO# HS22080897

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August 23, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080897**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Aug 17, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22080897

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080897-01	LH18/24-SP650_081622	Water		16-Aug-2022 13:00	17-Aug-2022 09:25	☐
HS22080897-02	Trip Blank	Water	CG-082521-497	16-Aug-2022 00:00	17-Aug-2022 09:25	☐

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22080897

GCMS Volatiles by Method SW8260

Batch ID: R415286

Sample ID: CCV

- Chloromethane and n-Butylbenzene exceeded %D limits for CCV .Samples are ND for these compounds.

Sample ID: Trip Blank (HS22080897-02)

- Trichlorofluoromethane hit confirmed.

Sample ID: LH18/24-SP650_081622 (HS22080897-01MS)

- .MS/MSD failed QC and RPD limits for few compounds.

WetChemistry by Method SW9056

Batch ID: R415603

Sample ID: HS22080958-01MS

- MS and MSD are for an unrelated sample (Chloride)

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Sample ID: LH18/24-SP650_081622
Collection Date: 16-Aug-2022 13:00

ANALYTICAL REPORT
WorkOrder:HS22080897
Lab ID:HS22080897-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	17-Aug-2022 13:28
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	17-Aug-2022 13:28
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	17-Aug-2022 13:28
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	17-Aug-2022 13:28
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	17-Aug-2022 13:28
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28

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

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080897
Sample ID: LH18/24-SP650_081622 Lab ID:HS22080897-01
Collection Date: 16-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
cis-1,2-Dichloroethene	**3.3**		**0.20**	**0.50**	**1.0**	**ug/L**	1	17-Aug-2022 13:28
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	17-Aug-2022 13:28
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	17-Aug-2022 13:28
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:28
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:28
Surr: 1,2-Dichloroethane-d4	*96.4*			**0**	*81-118*	*%REC*	*1*	*17-Aug-2022 13:28*
Surr: 4-Bromofluorobenzene	*98.2*			**0**	*85-114*	*%REC*	*1*	*17-Aug-2022 13:28*
Surr: Dibromofluoromethane	*96.0*			**0**	*80-119*	*%REC*	*1*	*17-Aug-2022 13:28*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*17-Aug-2022 13:28*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,270**		**4.00**	**10.0**	**10.0**	**mg/L**	20	19-Aug-2022 00:09
Sulfate	**29.8**		**1.00**	**2.50**	**2.50**	**mg/L**	5	19-Aug-2022 00:03

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

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22080897
Sample ID: Trip Blank Lab ID:HS22080897-02
Collection Date: 16-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	17-Aug-2022 13:07
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	17-Aug-2022 13:07
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	17-Aug-2022 13:07
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	17-Aug-2022 13:07
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	17-Aug-2022 13:07
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07

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

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:HS22080897
Sample ID: Trip Blank
Lab ID:HS22080897-02
Collection Date: 16-Aug-2022 00:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	17-Aug-2022 13:07
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	17-Aug-2022 13:07
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	17-Aug-2022 13:07
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	17-Aug-2022 13:07
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Trichlorofluoromethane	**4.0**		**0.30**	**1.0**	**1.0**	**ug/L**	1	17-Aug-2022 13:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	17-Aug-2022 13:07
Surr: 1,2-Dichloroethane-d4	*98.0*			**0**	*81-118*	*%REC*	*1*	*17-Aug-2022 13:07*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*17-Aug-2022 13:07*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*1*	*17-Aug-2022 13:07*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*17-Aug-2022 13:07*

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

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R415286 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22080897-01	LH18/24-SP650_081622	16 Aug 2022 13:00			17 Aug 2022 13:28	1
HS22080897-02	Trip Blank	16 Aug 2022 00:00			17 Aug 2022 13:07	1
Batch ID: R415603 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22080897-01	LH18/24-SP650_081622	16 Aug 2022 13:00			19 Aug 2022 00:09	20
HS22080897-01	LH18/24-SP650_081622	16 Aug 2022 13:00			19 Aug 2022 00:03	5

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220817** Units: **ug/L** Analysis Date: **17-Aug-2022 12:46**
Client ID: Run ID: **VOA6_415286** SeqNo: **6806606** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220817** Units: **ug/L** Analysis Date: **17-Aug-2022 12:46**
Client ID: Run ID: **VOA6_415286** SeqNo: **6806606** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*48.11*	*1.0*	*50*	*0*	*96.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48*	*1.0*	*50*	*0*	*96.0*	*85 - 114*				
Surr: Dibromofluoromethane	*47.6*	*1.0*	*50*	*0*	*95.2*	*80 - 119*				
Surr: Toluene-d8	*53.75*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220817** Units: **ug/L** Analysis Date: **17-Aug-2022 12:04**
Client ID: Run ID: **VOA6_415286** SeqNo: **6806605** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.9	1.0	20	0	109	78 - 124				
1,1,1-Trichloroethane	21.62	1.0	20	0	108	74 - 131				
1,1,2,2-Tetrachloroethane	21.56	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	20.97	1.0	20	0	105	80 - 119				
1,1-Dichloroethane	21.11	1.0	20	0	106	77 - 125				
1,1-Dichloroethene	19.38	1.0	20	0	96.9	71 - 131				
1,1-Dichloropropene	21.74	1.0	20	0	109	78 - 125				
1,2,3-Trichlorobenzene	24.35	1.0	20	0	122	69 - 129				
1,2,3-Trichloropropane	21.12	1.0	20	0	106	73 - 122				
1,2,4-Trichlorobenzene	23.03	1.0	20	0	115	69 - 130				
1,2,4-Trimethylbenzene	23.28	1.0	20	0	116	76 - 124				
1,2-Dibromo-3-chloropropane	23.3	1.0	20	0	116	62 - 128				
1,2-Dibromoethane	20.92	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	22.5	1.0	20	0	112	80 - 119				
1,2-Dichloroethane	21.03	1.0	20	0	105	73 - 128				
1,2-Dichloropropane	21.12	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	23.13	1.0	20	0	116	75 - 124				
1,3-Dichlorobenzene	22.63	1.0	20	0	113	80 - 119				
1,3-Dichloropropane	20.92	1.0	20	0	105	80 - 119				
1,4-Dichlorobenzene	22.18	1.0	20	0	111	79 - 118				
2,2-Dichloropropane	22.43	1.0	20	0	112	60 - 139				
2-Butanone	39.28	2.0	40	0	98.2	56 - 143				
2-Chlorotoluene	22.24	1.0	20	0	111	79 - 122				
2-Hexanone	41.99	2.0	40	0	105	57 - 139				
4-Chlorotoluene	22.5	1.0	20	0	113	78 - 122				
4-Isopropyltoluene	23.91	1.0	20	0	120	77 - 127				
4-Methyl-2-pentanone	43.4	2.0	40	0	108	67 - 130				
Acetone	38.52	2.0	40	0	96.3	39 - 160				
Benzene	20.58	1.0	20	0	103	79 - 120				
Bromobenzene	22.21	1.0	20	0	111	80 - 120				
Bromochloromethane	19.65	1.0	20	0	98.3	78 - 123				
Bromodichloromethane	21.19	1.0	20	0	106	79 - 125				
Bromoform	19.78	1.0	20	0	98.9	66 - 130				
Bromomethane	18.95	1.0	20	0	94.8	53 - 141				

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220817** Units: **ug/L** Analysis Date: **17-Aug-2022 12:04**
Client ID: Run ID: **VOA6_415286** SeqNo: **6806605** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.36	2.0	40	0	101	64 - 133				
Carbon tetrachloride	20.33	1.0	20	0	102	72 - 136				
Chlorobenzene	21.48	1.0	20	0	107	82 - 118				
Chloroethane	19.28	1.0	20	0	96.4	60 - 138				
Chloroform	21.44	1.0	20	0	107	79 - 124				
Chloromethane	23.65	1.0	20	0	118	50 - 139				
cis-1,2-Dichloroethene	21.39	1.0	20	0	107	78 - 123				
cis-1,3-Dichloropropene	21.05	1.0	20	0	105	75 - 124				
Dibromochloromethane	20.68	1.0	20	0	103	74 - 126				
Dibromomethane	20.82	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	20.86	1.0	20	0	104	32 - 152				
Ethylbenzene	22.07	1.0	20	0	110	79 - 121				
Hexachlorobutadiene	23.31	1.0	20	0	117	66 - 134				
Isopropylbenzene	22.49	1.0	20	0	112	72 - 131				
m,p-Xylene	44.7	2.0	40	0	112	80 - 121				
Methylene chloride	21.51	2.0	20	0	108	74 - 124				
Naphthalene	22.4	1.0	20	0	112	61 - 128				
n-Butylbenzene	24.85	1.0	20	0	124	75 - 128				
n-Propylbenzene	23.99	1.0	20	0	120	76 - 126				
o-Xylene	21.59	1.0	20	0	108	78 - 122				
sec-Butylbenzene	23.8	1.0	20	0	119	77 - 126				
Styrene	21.92	1.0	20	0	110	78 - 123				
tert-Butylbenzene	23.52	1.0	20	0	118	78 - 124				
Tetrachloroethene	21.58	1.0	20	0	108	74 - 129				
Toluene	21.18	1.0	20	0	106	80 - 121				
trans-1,2-Dichloroethene	20.84	1.0	20	0	104	75 - 124				
trans-1,3-Dichloropropene	21.42	1.0	20	0	107	73 - 127				
Trichloroethene	20.97	1.0	20	0	105	79 - 123				
Trichlorofluoromethane	19.91	1.0	20	0	99.6	65 - 141				
Vinyl chloride	19.26	1.0	20	0	96.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.06*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.45*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*52.45*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*50.3*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080897-01MS** Units: **ug/L** Analysis Date: **17-Aug-2022 15:55**
Client ID: **LH18/24-SP650_081622** Run ID: **VOA6_415286** SeqNo: **6806609** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.62	1.0	20	0	108	78 - 124				
1,1,1-Trichloroethane	22.26	1.0	20	0	111	74 - 131				
1,1,2,2-Tetrachloroethane	21.34	1.0	20	0	107	71 - 121				
1,1,2-Trichloroethane	21.37	1.0	20	0	107	80 - 119				
1,1-Dichloroethane	21.1	1.0	20	0	105	77 - 125				
1,1-Dichloroethene	20.11	1.0	20	0	101	71 - 131				
1,1-Dichloropropene	23.37	1.0	20	0	117	78 - 125				
1,2,3-Trichlorobenzene	18.34	1.0	20	0	91.7	69 - 129				
1,2,3-Trichloropropane	20.8	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	20.75	1.0	20	0	104	69 - 130				
1,2,4-Trimethylbenzene	22.75	1.0	20	0	114	76 - 124				
1,2-Dibromo-3-chloropropane	19.45	1.0	20	0	97.3	62 - 128				
1,2-Dibromoethane	21.26	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	21.58	1.0	20	0	108	80 - 119				
1,2-Dichloroethane	21.78	1.0	20	0	109	73 - 128				
1,2-Dichloropropane	21.13	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	22.83	1.0	20	0	114	75 - 124				
1,3-Dichlorobenzene	21.89	1.0	20	0	109	80 - 119				
1,3-Dichloropropane	21.37	1.0	20	0	107	80 - 119				
1,4-Dichlorobenzene	21.57	1.0	20	0	108	79 - 118				
2,2-Dichloropropane	21.9	1.0	20	0	110	60 - 139				
2-Butanone	39.62	2.0	40	0	99.1	56 - 143				
2-Chlorotoluene	21.76	1.0	20	0	109	79 - 122				
2-Hexanone	45.57	2.0	40	0	114	57 - 139				
4-Chlorotoluene	21.91	1.0	20	0	110	78 - 122				
4-Isopropyltoluene	23.57	1.0	20	0	118	77 - 127				
4-Methyl-2-pentanone	48.46	2.0	40	0	121	67 - 130				
Acetone	33.98	2.0	40	0	85.0	39 - 160				
Benzene	21.8	1.0	20	0	109	79 - 120				
Bromobenzene	21.63	1.0	20	0	108	80 - 120				
Bromochloromethane	19.53	1.0	20	0	97.7	78 - 123				
Bromodichloromethane	21.65	1.0	20	0	108	79 - 125				
Bromoform	19.89	1.0	20	0	99.4	66 - 130				
Bromomethane	16.74	1.0	20	0	83.7	53 - 141				

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080897-01MS** Units: **ug/L** Analysis Date: **17-Aug-2022 15:55**
Client ID: **LH18/24-SP650_081622** Run ID: **VOA6_415286** SeqNo: **6806609** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	44.15	2.0	40	0	110	64 - 133				
Carbon tetrachloride	22.77	1.0	20	0	114	72 - 136				
Chlorobenzene	21.82	1.0	20	0	109	82 - 118				
Chloroethane	20.57	1.0	20	0	103	60 - 138				
Chloroform	22.08	1.0	20	0	110	79 - 124				
Chloromethane	28.52	1.0	20	0	143	50 - 139				S
cis-1,2-Dichloroethene	24.74	1.0	20	3.25	107	78 - 123				
cis-1,3-Dichloropropene	21.45	1.0	20	0	107	75 - 124				
Dibromochloromethane	21.13	1.0	20	0	106	74 - 126				
Dibromomethane	21.48	1.0	20	0	107	79 - 123				
Dichlorodifluoromethane	19.05	1.0	20	0	95.3	32 - 152				
Ethylbenzene	22.81	1.0	20	0	114	79 - 121				
Hexachlorobutadiene	22.85	1.0	20	0	114	66 - 134				
Isopropylbenzene	23.38	1.0	20	0	117	72 - 131				
m,p-Xylene	45.49	2.0	40	0	114	80 - 121				
Methylene chloride	20.04	2.0	20	0	100	74 - 124				
Naphthalene	16.75	1.0	20	0	83.8	61 - 128				
n-Butylbenzene	24.17	1.0	20	0	121	75 - 128				
n-Propylbenzene	23.84	1.0	20	0	119	76 - 126				
o-Xylene	21.79	1.0	20	0	109	78 - 122				
sec-Butylbenzene	23.89	1.0	20	0	119	77 - 126				
Styrene	21.91	1.0	20	0	110	78 - 123				
tert-Butylbenzene	23.48	1.0	20	0	117	78 - 124				
Tetrachloroethene	22.64	1.0	20	0	113	74 - 129				
Toluene	22.07	1.0	20	0	110	80 - 121				
trans-1,2-Dichloroethene	21.44	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	21.45	1.0	20	0	107	73 - 127				
Trichloroethene	22.63	1.0	20	0	113	79 - 123				
Trichlorofluoromethane	20.94	1.0	20	0	105	65 - 141				
Vinyl chloride	19.55	1.0	20	0	97.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.32*	*1.0*	*50*	*0*	*101*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.98*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*48.43*	*1.0*	*50*	*0*	*96.9*	*80 - 119*				
Surr: Toluene-d8	*51.53*	*1.0*	*50*	*0*	*103*	*89 - 112*				

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080897-01MSD** Units: **ug/L** Analysis Date: **17-Aug-2022 16:16**
Client ID: **LH18/24-SP650_081622** Run ID: **VOA6_415286** SeqNo: **6806610** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.09	1.0	20	0	105	78 - 124	21.62	2.5	20	
1,1,1-Trichloroethane	20.69	1.0	20	0	103	74 - 131	22.26	7.32	20	
1,1,2,2-Tetrachloroethane	21.78	1.0	20	0	109	71 - 121	21.34	2.04	20	
1,1,2-Trichloroethane	21.15	1.0	20	0	106	80 - 119	21.37	1.02	20	
1,1-Dichloroethane	20.17	1.0	20	0	101	77 - 125	21.1	4.52	20	
1,1-Dichloroethene	18.5	1.0	20	0	92.5	71 - 131	20.11	8.32	20	
1,1-Dichloropropene	22	1.0	20	0	110	78 - 125	23.37	6.04	20	
1,2,3-Trichlorobenzene	23.13	1.0	20	0	116	69 - 129	18.34	23.1	20	R
1,2,3-Trichloropropane	22.53	1.0	20	0	113	73 - 122	20.8	8	20	
1,2,4-Trichlorobenzene	22.49	1.0	20	0	112	69 - 130	20.75	8.09	20	
1,2,4-Trimethylbenzene	22.44	1.0	20	0	112	76 - 124	22.75	1.36	20	
1,2-Dibromo-3-chloropropane	22.89	1.0	20	0	114	62 - 128	19.45	16.2	20	
1,2-Dibromoethane	21.55	1.0	20	0	108	77 - 121	21.26	1.33	20	
1,2-Dichlorobenzene	22.24	1.0	20	0	111	80 - 119	21.58	3.01	20	
1,2-Dichloroethane	21.49	1.0	20	0	107	73 - 128	21.78	1.35	20	
1,2-Dichloropropane	20.32	1.0	20	0	102	78 - 122	21.13	3.91	20	
1,3,5-Trimethylbenzene	22.43	1.0	20	0	112	75 - 124	22.83	1.8	20	
1,3-Dichlorobenzene	21.76	1.0	20	0	109	80 - 119	21.89	0.618	20	
1,3-Dichloropropane	21.47	1.0	20	0	107	80 - 119	21.37	0.502	20	
1,4-Dichlorobenzene	21.46	1.0	20	0	107	79 - 118	21.57	0.525	20	
2,2-Dichloropropane	20.78	1.0	20	0	104	60 - 139	21.9	5.25	20	
2-Butanone	38.17	2.0	40	0	95.4	56 - 143	39.62	3.74	20	
2-Chlorotoluene	21.41	1.0	20	0	107	79 - 122	21.76	1.6	20	
2-Hexanone	46.78	2.0	40	0	117	57 - 139	45.57	2.63	20	
4-Chlorotoluene	22.03	1.0	20	0	110	78 - 122	21.91	0.537	20	
4-Isopropyltoluene	23.04	1.0	20	0	115	77 - 127	23.57	2.26	20	
4-Methyl-2-pentanone	48.98	2.0	40	0	122	67 - 130	48.46	1.07	20	
Acetone	31.9	2.0	40	0	79.7	39 - 160	33.98	6.32	20	
Benzene	20.24	1.0	20	0	101	79 - 120	21.8	7.44	20	
Bromobenzene	21.64	1.0	20	0	108	80 - 120	21.63	0.066	20	
Bromochloromethane	18.77	1.0	20	0	93.9	78 - 123	19.53	3.95	20	
Bromodichloromethane	20.48	1.0	20	0	102	79 - 125	21.65	5.57	20	
Bromoform	20.15	1.0	20	0	101	66 - 130	19.89	1.34	20	
Bromomethane	13.78	1.0	20	0	68.9	53 - 141	16.74	19.4	20	

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415286 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080897-01MSD** Units: **ug/L** Analysis Date: **17-Aug-2022 16:16**
Client ID: **LH18/24-SP650_081622** Run ID: **VOA6_415286** SeqNo: **6806610** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	41.18	2.0	40	0	103	64 - 133	44.15	6.96	20	
Carbon tetrachloride	21.22	1.0	20	0	106	72 - 136	22.77	7.03	20	
Chlorobenzene	21.57	1.0	20	0	108	82 - 118	21.82	1.18	20	
Chloroethane	12.86	1.0	20	0	64.3	60 - 138	20.57	46.1	20	R
Chloroform	20.46	1.0	20	0	102	79 - 124	22.08	7.62	20	
Chloromethane	29.55	1.0	20	0	148	50 - 139	28.52	3.53	20	S
cis-1,2-Dichloroethene	23.26	1.0	20	3.25	100	78 - 123	24.74	6.19	20	
cis-1,3-Dichloropropene	20.31	1.0	20	0	102	75 - 124	21.45	5.48	20	
Dibromochloromethane	21	1.0	20	0	105	74 - 126	21.13	0.589	20	
Dibromomethane	20.6	1.0	20	0	103	79 - 123	21.48	4.19	20	
Dichlorodifluoromethane	17.61	1.0	20	0	88.0	32 - 152	19.05	7.89	20	
Ethylbenzene	21.78	1.0	20	0	109	79 - 121	22.81	4.64	20	
Hexachlorobutadiene	22.84	1.0	20	0	114	66 - 134	22.85	0.0547	20	
Isopropylbenzene	22.49	1.0	20	0	112	72 - 131	23.38	3.88	20	
m,p-Xylene	44.12	2.0	40	0	110	80 - 121	45.49	3.05	20	
Methylene chloride	19.23	2.0	20	0	96.2	74 - 124	20.04	4.09	20	
Naphthalene	22.12	1.0	20	0	111	61 - 128	16.75	27.6	20	R
n-Butylbenzene	24.04	1.0	20	0	120	75 - 128	24.17	0.525	20	
n-Propylbenzene	23.61	1.0	20	0	118	76 - 126	23.84	0.959	20	
o-Xylene	21.54	1.0	20	0	108	78 - 122	21.79	1.14	20	
sec-Butylbenzene	23.44	1.0	20	0	117	77 - 126	23.89	1.92	20	
Styrene	21.43	1.0	20	0	107	78 - 123	21.91	2.19	20	
tert-Butylbenzene	23.03	1.0	20	0	115	78 - 124	23.48	1.93	20	
Tetrachloroethene	21.83	1.0	20	0	109	74 - 129	22.64	3.66	20	
Toluene	21.41	1.0	20	0	107	80 - 121	22.07	3	20	
trans-1,2-Dichloroethene	20	1.0	20	0	100	75 - 124	21.44	6.92	20	
trans-1,3-Dichloropropene	20.8	1.0	20	0	104	73 - 127	21.45	3.09	20	
Trichloroethene	20.71	1.0	20	0	104	79 - 123	22.63	8.86	20	
Trichlorofluoromethane	19.51	1.0	20	0	97.6	65 - 141	20.94	7.05	20	
Vinyl chloride	18.1	1.0	20	0	90.5	58 - 137	19.55	7.71	20	
Surr: 1,2-Dichloroethane-d4	*50.47*	*1.0*	*50*	*0*	*101*	*81 - 118*	*50.32*	*0.306*	*20*	
Surr: 4-Bromofluorobenzene	*50.86*	*1.0*	*50*	*0*	*102*	*85 - 114*	*50.98*	*0.245*	*20*	
Surr: Dibromofluoromethane	*48.49*	*1.0*	*50*	*0*	*97.0*	*80 - 119*	*48.43*	*0.117*	*20*	
Surr: Toluene-d8	*52.87*	*1.0*	*50*	*0*	*106*	*89 - 112*	*51.53*	*2.57*	*20*	

ALS Houston, US Date: 23-Aug-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22080897

QC BATCH REPORT

Batch ID:	**R415286 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22080897-01 HS22080897-02

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22080897

QC BATCH REPORT

Batch ID: R415603 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **19-Aug-2022 00:19**
Client ID: Run ID: **ICS-Integrion_415603** SeqNo: **6813805** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **19-Aug-2022 00:25**
Client ID: Run ID: **ICS-Integrion_415603** SeqNo: **6813806** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.06	0.500	20	0	105	80 - 120				
Sulfate	21.08	0.500	20	0	105	80 - 120				

MS Sample ID: **HS22080958-01MS** Units: **mg/L** Analysis Date: **18-Aug-2022 21:35**
Client ID: Run ID: **ICS-Integrion_415603** SeqNo: **6813779** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	56.55	0.500	10	48.91	76.4	80 - 120				SO
Sulfate	23.07	0.500	10	12.75	103	80 - 120				

MSD Sample ID: **HS22080958-01MSD** Units: **mg/L** Analysis Date: **18-Aug-2022 21:40**
Client ID: Run ID: **ICS-Integrion_415603** SeqNo: **6813780** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	53.73	0.500	10	48.91	48.2	80 - 120	56.55	5.12	20	SO
Sulfate	21.92	0.500	10	12.75	91.7	80 - 120	23.07	5.08	20	

The following samples were analyzed in this batch: HS22080897-01

ALS Houston, US Date: 23-Aug-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22080897**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023

ALS Houston, US Date: 23-Aug-22

Sample Receipt Checklist

Work Order ID: HS22080897 **Date/Time Received:** 17-Aug-2022 09:25

Client Name: Bhate Environmental **Received by:** Pablo Marinez

Completed By:	/S/ Pablo Marinez	17-Aug-2022 12:23	**Reviewed by:**	/S/ Ragen Giga	18-Aug-2022 17:55
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	1.0°C/1.5°C UC/C	IR 31
Cooler(s)/Kit(s):	RED	
Date/Time sample(s) sent to storage:	8/17/22 12:25	

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 ATTN: Dane Wacasey

Page 1 of 1

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

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT
BI-WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O Number

HS22080897

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi-Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_081622	Water	08/16/22 / 13:00		3	3		HCL	
LH18/24-SP650_081622	Water	08/16/22 / 13:00		1		1	NONE	
Trip Blank	Water	08/16/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/16/22	13:30		8/17	9:25						

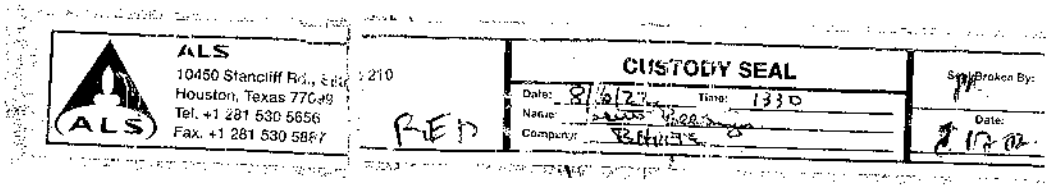
9For Lab Use Only

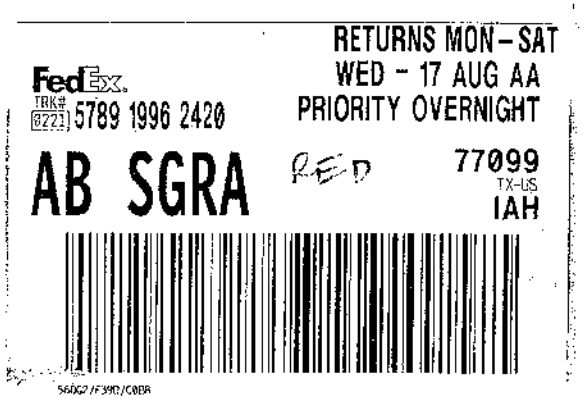
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks

RPD 1.00 LK31 UPTOO

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


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5667
RED
CUSTODY SEAL
Date: 8/6/02
Time: 1330
Name:
Company:
Seal Broken By:
Date:
8/7/02


FedEx
TRK# 0221 5789 1996 2420
RETURNS MON-SAT
WED - 17 AUG AA
PRIORITY OVERNIGHT
AB SGRA
RED
77099
TX-US
IAH

HS22080897-MSVOA-SW8260

ALS WO# HS22080897

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

HS22080897-01
LH18/24-SP650_081622

Collected	Received	Matrix	Units
08/16/22 13:00	08/17/22 09:25	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
2-Butanone	1	U	0.50	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
2-Hexanone	2	U	1.0	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
Acetone	2	U	0.40	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
Benzene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Bromobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

HS22080897-01
LH18/24-SP650_081622

Collected	Received	Matrix	Units
08/16/22 13:00	08/17/22 09:25	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Bromomethane	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Chloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Chloroform	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
cis-1,2-Dichloroethene	3.3		0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
Methylene chloride	2	U	0.40	2.0	2.0	1	08/17/22 13:28	VOA6_415286	X081709
Naphthalene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
o-Xylene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Styrene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Toluene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/17/22 13:28	VOA6_415286	X081709

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

HS22080897-02
Trip Blank

Collected	Received	Matrix	Units
08/16/22 00:00	08/17/22 09:25	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
2-Butanone	1	U	0.50	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
2-Hexanone	2	U	1.0	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
Acetone	2	U	0.40	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
Benzene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Bromobenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

HS22080897-02
Trip Blank

Collected	Received	Matrix	Units
08/16/22 00:00	08/17/22 09:25	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Bromomethane	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Chloroethane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Chloroform	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
Methylene chloride	2	U	0.40	2.0	2.0	1	08/17/22 13:07	VOA6_415286	X081708
Naphthalene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
o-Xylene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Styrene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Toluene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Trichlorofluoromethane	4		0.30	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/17/22 13:07	VOA6_415286	X081708

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

VBLKW-220817
VBLKW-220817

Collected	Received	Matrix	Units
NA	NA	Aqueous	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
2-Butanone	1	U	0.50	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
2-Hexanone	2	U	1.0	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
Acetone	2	U	0.40	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
Benzene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Bromobenzene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

VBLKW-220817
VBLKW-220817

Collected	Received	Matrix	Units
NA	NA	Aqueous	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Bromomethane	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Chloroethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Chloroform	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
Methylene chloride	2	U	0.40	2.0	2.0	1	08/17/22 12:46	VOA6_415286	X081707
Naphthalene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
o-Xylene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Styrene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Toluene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/17/22 12:46	VOA6_415286	X081707

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Form 2

System Monitoring Compound Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

RunID
VOA6_415286

Volatiles Organics by Method 8260C

VLCSW-220817 (6806605)	Analyzed 08/17/22 12:04		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
Dibromofluoromethane	52.45	50.00	105	80 - 119	
Toluene-d8	50.30	50.00	101	89 - 112	
4-Bromofluorobenzene	50.45	50.00	101	85 - 114	
1,2-Dichloroethane-d4	52.06	50.00	104	81 - 118	

VBLKW-220817 (6806606)	Analyzed 08/17/22 12:46		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	48.11	50.00	96	81 - 118	
Dibromofluoromethane	47.60	50.00	95	80 - 119	
Toluene-d8	53.75	50.00	107	89 - 112	
4-Bromofluorobenzene	48.00	50.00	96	85 - 114	

HS22080897-02 (6806607)	Analyzed 08/17/22 13:07		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	49.02	50.00	98	81 - 118	
Dibromofluoromethane	47.74	50.00	96	80 - 119	
Toluene-d8	53.88	50.00	108	89 - 112	
4-Bromofluorobenzene	48.45	50.00	97	85 - 114	

HS22080897-01 (6806608)	Analyzed 08/17/22 13:28		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	48.21	50.00	96	81 - 118	
Dibromofluoromethane	47.99	50.00	96	80 - 119	
Toluene-d8	52.19	50.00	104	89 - 112	
4-Bromofluorobenzene	49.10	50.00	98	85 - 114	

- Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

RunID
VOA6_415286

Volatiles Organics by Method 8260C

HS22080897-01MS (6806609)	Analyzed 08/17/22 15:55		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	50.32	50.00	101	81 - 118	
Dibromofluoromethane	48.43	50.00	97	80 - 119	
Toluene-d8	51.53	50.00	103	89 - 112	
4-Bromofluorobenzene	50.98	50.00	102	85 - 114	

HS22080897-01MSD (6806610)	Analyzed 08/17/22 16:16		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	50.47	50.00	101	81 - 118	
Dibromofluoromethane	48.49	50.00	97	80 - 119	
Toluene-d8	52.87	50.00	106	89 - 112	
4-Bromofluorobenzene	50.86	50.00	102	85 - 114	

- Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

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Form 3A

Matrix Spike/Spike Duplicate Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder **HS22080897**

Volatiles Organics by Method 8260C

LH18/24-SP650_081622		HS22080897-01		HS22080897-01MS				HS22080897-01MSD						
Sample Matrix	Aqueous	Run Date	08/17/22			08/17/22				08/17/22				
Units	µg/L	Run Time	13:28			15:55				16:16				
		Data File	X081709.D			X081716.D				X081717.D				
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	1	0	21.62	20.00	108		21.09	20.00	105		20	2.50	
1,1,1-Trichloroethane	74-131	1	0	22.26	20.00	111		20.69	20.00	103		20	7.30	
1,1,2,2-Tetrachloroethane	71-121	1	0	21.34	20.00	107		21.78	20.00	109		20	2.00	
1,1,2-Trichloroethane	80-119	1	0	21.37	20.00	107		21.15	20.00	106		20	1.00	
1,1-Dichloroethane	77-125	1	0	21.10	20.00	105		20.17	20.00	101		20	4.50	
1,1-Dichloroethene	71-131	1	0	20.11	20.00	101		18.5	20.00	93		20	8.30	
1,1-Dichloropropene	78-125	1	0	23.37	20.00	117		22	20.00	110		20	6.00	
1,2,3-Trichlorobenzene	69-129	1	0	18.34	20.00	92		23.13	20.00	116		20	23.1	
1,2,3-Trichloropropane	73-122	1	0	20.80	20.00	104		22.53	20.00	113		20	8.00	
1,2,4-Trichlorobenzene	69-130	1	0	20.75	20.00	104		22.49	20.00	112		20	8.10	
1,2,4-Trimethylbenzene	76-124	1	0	22.75	20.00	114		22.44	20.00	112		20	1.40	
1,2-Dibromo-3-	62-128	1	0	19.45	20.00	97		22.89	20.00	114		20	16.2	
1,2-Dibromoethane	77-121	1	0	21.26	20.00	106		21.55	20.00	108		20	1.30	
1,2-Dichlorobenzene	80-119	1	0	21.58	20.00	108		22.24	20.00	111		20	3.00	
1,2-Dichloroethane	73-128	1	0	21.78	20.00	109		21.49	20.00	107		20	1.30	
1,2-Dichloropropane	78-122	1	0	21.13	20.00	106		20.32	20.00	102		20	3.90	
1,3,5-Trimethylbenzene	75-124	1	0	22.83	20.00	114		22.43	20.00	112		20	1.80	
1,3-Dichlorobenzene	80-119	1	0	21.89	20.00	109		21.76	20.00	109		20	0.600	
1,3-Dichloropropane	80-119	1	0	21.37	20.00	107		21.47	20.00	107		20	0.500	
1,4-Dichlorobenzene	79-118	1	0	21.57	20.00	108		21.46	20.00	107		20	0.500	
2,2-Dichloropropane	60-139	1	0	21.90	20.00	110		20.78	20.00	104		20	5.30	
2-Butanone	56-143	1	0	39.62	40.00	99		38.17	40.00	95		20	3.70	
2-Chlorotoluene	79-122	1	0	21.76	20.00	109		21.41	20.00	107		20	1.60	
2-Hexanone	57-139	1	0	45.57	40.00	114		46.78	40.00	117		20	2.60	
4-Chlorotoluene	78-122	1	0	21.91	20.00	110		22.03	20.00	110		20	0.500	
4-Isopropyltoluene	77-127	1	0	23.57	20.00	118		23.04	20.00	115		20	2.30	
4-Methyl-2-pentanone	67-130	1	0	48.46	40.00	121		48.98	40.00	122		20	1.10	
Acetone	39-160	1	0	33.98	40.00	85		31.9	40.00	80		20	6.30	
Benzene	79-120	1	0	21.80	20.00	109		20.24	20.00	101		20	7.40	
Bromobenzene	80-120	1	0	21.63	20.00	108		21.64	20.00	108		20	0.100	
Bromochloromethane	78-123	1	0	19.53	20.00	98		18.77	20.00	94		20	3.90	
Bromodichloromethane	79-125	1	0	21.65	20.00	108		20.48	20.00	102		20	5.60	
Bromoform	66-130	1	0	19.89	20.00	99		20.15	20.00	101		20	1.30	
Bromomethane	53-141	1	0	16.74	20.00	84		13.78	20.00	69		20	19.4	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder **HS22080897**

Volatiles Organics by Method 8260C

LH18/24-SP650_081622		HS22080897-01		HS22080897-01MS				HS22080897-01MSD						
Sample Matrix	Aqueous	Run Date	08/17/22			08/17/22				08/17/22				
Units	µg/L	Run Time	13:28			15:55				16:16				
		Data File	X081709.D			X081716.D				X081717.D				
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	1	0	44.15	40.00	110		41.18	40.00	103		20	7.00	
Carbon tetrachloride	72-136	1	0	22.77	20.00	114		21.22	20.00	106		20	7.00	
Chlorobenzene	82-118	1	0	21.82	20.00	109		21.57	20.00	108		20	1.20	
Chloroethane	60-138	1	0	20.57	20.00	103		12.86	20.00	64		20	46.1	
Chloroform	79-124	1	0	22.08	20.00	110		20.46	20.00	102		20	7.60	
Chloromethane	50-139	1	0	28.52	20.00	143	*	29.55	20.00	148	*	20	3.50	
cis-1,2-Dichloroethene	78-123	1	3.250	24.74	20.00	107		23.26	20.00	100		20	6.20	
cis-1,3-Dichloropropene	75-124	1	0	21.45	20.00	107		20.31	20.00	102		20	5.50	
Dibromochloromethane	74-126	1	0	21.13	20.00	106		21	20.00	105		20	0.600	
Dibromomethane	79-123	1	0	21.48	20.00	107		20.6	20.00	103		20	4.20	
Dichlorodifluoromethane	32-152	1	0	19.05	20.00	95		17.61	20.00	88		20	7.90	
Ethylbenzene	79-121	1	0	22.81	20.00	114		21.78	20.00	109		20	4.60	
Hexachlorobutadiene	66-134	1	0	22.85	20.00	114		22.84	20.00	114		20	0.100	
Isopropylbenzene	72-131	1	0	23.38	20.00	117		22.49	20.00	112		20	3.90	
m,p-Xylene	80-121	1	0	45.49	40.00	114		44.12	40.00	110		20	3.10	
Methylene chloride	74-124	1	0	20.04	20.00	100		19.23	20.00	96		20	4.10	
n-Butylbenzene	75-128	1	0	24.17	20.00	121		24.04	20.00	120		20	0.500	
n-Propylbenzene	76-126	1	0	23.84	20.00	119		23.61	20.00	118		20	1.00	
Naphthalene	61-128	1	0	16.75	20.00	84		22.12	20.00	111		20	27.6	
o-Xylene	78-122	1	0	21.79	20.00	109		21.54	20.00	108		20	1.10	
sec-Butylbenzene	77-126	1	0	23.89	20.00	119		23.44	20.00	117		20	1.90	
Styrene	78-123	1	0	21.91	20.00	110		21.43	20.00	107		20	2.20	
tert-Butylbenzene	78-124	1	0	23.48	20.00	117		23.03	20.00	115		20	1.90	
Tetrachloroethene	74-129	1	0	22.64	20.00	113		21.83	20.00	109		20	3.70	
Toluene	80-121	1	0	22.07	20.00	110		21.41	20.00	107		20	3.00	
trans-1,2-Dichloroethene	75-124	1	0	21.44	20.00	107		20	20.00	100		20	6.90	
trans-1,3-Dichloropropene	73-127	1	0	21.45	20.00	107		20.8	20.00	104		20	3.10	
Trichloroethene	79-123	1	0	22.63	20.00	113		20.71	20.00	104		20	8.90	
Trichlorofluoromethane	65-141	1	0	20.94	20.00	105		19.51	20.00	98		20	7.10	
Vinyl chloride	58-137	1	0	19.55	20.00	98		18.1	20.00	91		20	7.70	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

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Form 3B

Laboratory Control Sample Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

VOA6_415286			VLCSW-220817		
QC Matrix: Aqueous	Units: ug/L	Run Date / Run Time	08/17/22 12:04		
Analyte	%R Limits	Spike Added	LCS Result	%R	Q
1,1,1,2-Tetrachloroethane	78-124	20	21.9	109	
1,1,1-Trichloroethane	74-131	20	21.62	108	
1,1,2,2-Tetrachloroethane	71-121	20	21.56	108	
1,1,2-Trichloroethane	80-119	20	20.97	105	
1,1-Dichloroethane	77-125	20	21.11	106	
1,1-Dichloroethene	71-131	20	19.38	97	
1,1-Dichloropropene	78-125	20	21.74	109	
1,2,3-Trichlorobenzene	69-129	20	24.35	122	
1,2,3-Trichloropropane	73-122	20	21.12	106	
1,2,4-Trichlorobenzene	69-130	20	23.03	115	
1,2,4-Trimethylbenzene	76-124	20	23.28	116	
1,2-Dibromo-3-chloropropane	62-128	20	23.3	116	
1,2-Dibromoethane	77-121	20	20.92	105	
1,2-Dichlorobenzene	80-119	20	22.5	112	
1,2-Dichloroethane	73-128	20	21.03	105	
1,2-Dichloroethane-d4	81-118	50	52.06	104	
1,2-Dichloropropane	78-122	20	21.12	106	
1,3,5-Trimethylbenzene	75-124	20	23.13	116	
1,3-Dichlorobenzene	80-119	20	22.63	113	
1,3-Dichloropropane	80-119	20	20.92	105	
1,4-Dichlorobenzene	79-118	20	22.18	111	
2,2-Dichloropropane	60-139	20	22.43	112	
2-Butanone	56-143	40	39.28	98	
2-Chlorotoluene	79-122	20	22.24	111	
2-Hexanone	57-139	40	41.99	105	
4-Bromofluorobenzene	85-114	50	50.45	101	
4-Chlorotoluene	78-122	20	22.5	113	
4-Isopropyltoluene	77-127	20	23.91	120	
4-Methyl-2-pentanone	67-130	40	43.4	108	
Acetone	39-160	40	38.52	96	
Benzene	79-120	20	20.58	103	
Bromobenzene	80-120	20	22.21	111	
Bromochloromethane	78-123	20	19.65	98	
Bromodichloromethane	79-125	20	21.19	106	
Bromoform	66-130	20	19.78	99	
Bromomethane	53-141	20	18.95	95	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

VOA6_415286			VLCSW-220817		
QC Matrix: Aqueous	Units: ug/L	Run Date / Run Time	08/17/22 12:04		
Analyte	%R Limits	Spike Added	LCS Result	%R	Q
Carbon disulfide	64-133	40	40.36	101	
Carbon tetrachloride	72-136	20	20.33	102	
Chlorobenzene	82-118	20	21.48	107	
Chloroethane	60-138	20	19.28	96	
Chloroform	79-124	20	21.44	107	
Chloromethane	50-139	20	23.65	118	
cis-1,2-Dichloroethene	78-123	20	21.39	107	
cis-1,3-Dichloropropene	75-124	20	21.05	105	
Dibromochloromethane	74-126	20	20.68	103	
Dibromofluoromethane	80-119	50	52.45	105	
Dibromomethane	79-123	20	20.82	104	
Dichlorodifluoromethane	32-152	20	20.86	104	
Ethylbenzene	79-121	20	22.07	110	
Hexachlorobutadiene	66-134	20	23.31	117	
Isopropylbenzene	72-131	20	22.49	112	
m,p-Xylene	80-121	40	44.7	112	
Methylene chloride	74-124	20	21.51	108	
Naphthalene	61-128	20	22.4	112	
n-Butylbenzene	75-128	20	24.85	124	
n-Propylbenzene	76-126	20	23.99	120	
o-Xylene	78-122	20	21.59	108	
sec-Butylbenzene	77-126	20	23.8	119	
Styrene	78-123	20	21.92	110	
tert-Butylbenzene	78-124	20	23.52	118	
Tetrachloroethene	74-129	20	21.58	108	
Toluene	80-121	20	21.18	106	
Toluene-d8	89-112	50	50.3	101	
trans-1,2-Dichloroethene	75-124	20	20.84	104	
trans-1,3-Dichloropropene	73-127	20	21.42	107	
Trichloroethene	79-123	20	20.97	105	
Trichlorofluoromethane	65-141	20	19.91	100	
Vinyl chloride	58-137	20	19.26	96	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

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Form 4

Method Blank Summary

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

BatchID
R415286

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	VBLKW-220817	X081707.D	08/17/22 12:46	VOA6_415286
VLCSW-220817	VLCSW-220817	X081705.D	08/17/22 12:04	VOA6_415286
Trip Blank	HS22080897-02	X081708.D	08/17/22 13:07	VOA6_415286
LH18/24-SP650_081622	HS22080897-01	X081709.D	08/17/22 13:28	VOA6_415286
HS22080897-01MS	HS22080897-01MS	X081716.D	08/17/22 15:55	VOA6_415286
HS22080897-01MSD	HS22080897-01MSD	X081717.D	08/17/22 16:16	VOA6_415286

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Form 5

Instrument Performance Check

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

RunID
VOA6_413360

Tune File X071901.D 07/19/22 11:06

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	16 (16)
75	30.0 - 60.0% of mass 95	50.1 (50.1)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6.3 (6.29)
173	Less than 2.0% of mass 174	0.5 (0.527) 1
174	50.0 - 120.0% of mass 95	99.8 (99.8)
175	4.0 - 9.0% of mass 174	6.4 (6.41) 1
176	93.0 - 101.0% of mass 174	99.2 (99.4) 1
177	5.0 - 9.0% of mass 176	5.4 (5.48) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	07/19/22 11:27	X071902	VSTD000.25
2	ICAL2	07/19/22 12:08	X071903	VSTD000.5
3	ICAL3	07/19/22 12:29	X071904	VSTD001
4	ICAL4	07/19/22 12:50	X071905	VSTD002
5	ICAL5	07/19/22 13:11	X071906	VSTD005
6	ICAL6	07/19/22 13:32	X071907	VSTD020
7	ICAL7	07/19/22 13:53	X071908	VSTD050
8	ICAL8	07/19/22 14:14	X071909	VSTD100
9	ICAL9	07/19/22 14:35	X071910	VSTD150
10	ICAL	07/19/22 14:56	X071911	VSTD200
11	ICV	07/19/22 16:20	X071915	CCV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

RunID
VOA6_415286

Tune File X081701.D 08/17/22 10:40

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.7 (18.7)
75	30.0 - 60.0% of mass 95	50.2 (50.2)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.2 (7.16)
173	Less than 2.0% of mass 174	0.6 (0.694) 1
174	50.0 - 120.0% of mass 95	86.3 (86.3)
175	4.0 - 9.0% of mass 174	5.7 (6.59) 1
176	93.0 - 101.0% of mass 174	83.1 (96.3) 1
177	5.0 - 9.0% of mass 176	5.9 (7.16) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	08/17/22 11:01	X081702	CCV
2	CCB	08/17/22 11:43	X081704	CCB
3	LCS	08/17/22 12:04	X081705	VLCSW-220817
4	MBLK	08/17/22 12:46	X081707	VBLKW-220817
5	SAMP	08/17/22 13:07	X081708	Trip Blank
6	SAMP	08/17/22 13:28	X081709	LH18/24-SP650_081622
7	MS	08/17/22 15:55	X081716	HS22080897-01MS
8	MSD	08/17/22 16:16	X081717	HS22080897-01MSD
9	CCV_EN	08/17/22 16:37	X081718	CCV-END

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Form 6

Initial Calibration Data

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127
ICAL End Date 19-JUL-2022 1456

Calibration Files

Level 1 ..Voa6.i\X220719.b\X071902.D
Level 2 ..Voa6.i\X220719.b\X071903.D
Level 3 ..Voa6.i\X220719.b\X071904.D
Level 4 ..Voa6.i\X220719.b\X071905.D
Level 5 ..Voa6.i\X220719.b\X071906.D
Level 6 ..Voa6.i\X220719.b\X071907.D
Level 7 ..Voa6.i\X220719.b\X071908.D
Level 8 ..Voa6.i\X220719.b\X071909.D
Level 9 ..Voa6.i\X220719.b\X071910.D
Level 10 ..Voa6.i\X220719.b\X071911.D

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Dichlorodifluoromethane	NE 341283	3857 739202	7427 1136547	12732 NE	38222	148427	LINR	-0.00347	0.47469		0.99986	
Chloromethane	NE 337031	3959 703134	7297 1102492	13594 1500734	37005	141389	LINR	0.00105	0.46342		0.99980	
Propionitrile	NE 0.04685	0.04689 0.04773	0.05107 0.04839	0.04322 0.04906	0.04144	0.04294	AVRG		0.04640		6.88983	
Vinyl Chloride	NE 0.50451	0.55489 0.50140	0.58340 0.49744	0.49436 0.48578	0.56842	0.52845	AVRG		0.52429		6.88014	
Bromomethane	NE 257164	3413 532992	6763 802069	13133 1068317	30861	109055	LINR	-0.02742	0.33247		0.99976	
Chloroethane	NE 0.31358	0.31871 0.31044	0.34212 0.30725	0.31021 0.30357	0.35840	0.32202	AVRG		0.32070		5.64994	
Trichlorofluoromethane	NE 0.74240	0.79460 0.77510	0.87952 0.75654	0.73879 0.72528	0.85434	0.81961	AVRG		0.78735		6.86979	
Acrolein	NE 0.01514	0.01840 0.01585	0.01873 0.01488	0.01554 0.01505	0.01690	0.01630	AVRG		0.01631		8.76506	
Acetone	NE 169593	1762 331360	3509 485174	7337 633758	20021	78540	LINR	-0.12005	0.09934		0.99768	*
1,1-Dichloroethene	NE 0.39243	0.44979 0.40203	0.47002 0.39497	0.39454 0.38464	0.44374	0.42427	AVRG		0.41738		7.34470	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isobutyl Alcohol	NE 0.05563	0.05761 0.05548	0.05786 0.05559	0.05329 0.05721	0.05282	0.05451	AVRG		0.05555		3.24430	
Acetonitrile	NE 0.05038	0.05433 0.05104	0.05949 0.04930	0.04820 0.04928	0.04730	0.04952	AVRG		0.05098		7.37463	
Allyl Chloride	NE 0.87043	0.91865 0.89062	0.89575 0.86951	0.81071 0.88679	0.78896	0.84343	AVRG		0.86387		4.87488	
Iodomethane	NE 813391	3948 1806137	9058 2818279	17343 3905197	59955	294206	QUAD	0.03933	1.79246	-0.03172	0.99991	
Acrylonitrile	NE 0.13361	0.13013 0.13802	0.12726 0.13703	0.13561 0.13954	0.12102	0.11542	AVRG		0.13085		6.30029	
Methylene Chloride	NE 346955	4801 702932	7303 1078247	16740 1463710	40888	145583	LINR	-0.01749	0.45185		0.99986	
Methyl tert-butyl ether	NE 1.22369	1.35179 1.22448	1.30218 1.22206	1.22875 1.22105	1.18813	1.17183	AVRG		1.23711		4.51341	
Carbon Disulfide	NE 1.07589	1.14212 1.08991	1.20180 1.08317	0.98938 1.07302	1.17686	1.11263	AVRG		1.10497		5.71600	
trans-1,2-Dichloroethene	NE 0.43451	0.45777 0.43639	0.45194 0.43767	0.39448 0.43557	0.47805	0.43234	AVRG		0.43986		5.15003	
Vinyl Acetate	NE 1.11301	1.13062 1.10686	1.03088 1.12408	0.95722 1.13780	0.99794	1.07050	AVRG		1.07432		6.03941	
1,1-Dichloroethane	NE 0.75448	0.75835 0.74965	0.85338 0.75001	0.72477 0.75483	0.81381	0.76849	AVRG		0.76975		5.10213	
Chloroprene	NE 0.16690	0.21590 0.17780	0.23095 0.18053	0.17755 0.17676	0.18690	0.18468	AVRG		0.18866		11.04258	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
2-Butanone	NE 0.13168	0.11904 0.13218	0.11583 0.13456	0.12216 0.13704	0.11648	0.11993	AVRG		0.12543		6.65094	
Methacrylonitrile	NE 0.32070	0.35509 0.33333	0.36384 0.33543	0.30560 0.33996	0.30364	0.30600	AVRG		0.32929		6.67277	
2,2-Dichloropropane	NE 492680	5133 1068902	10957 1641201	20343 2176392	53750	205808	LINR	-0.00496	0.68028		0.99988	
cis-1,2-Dichloroethene	NE 0.50885	0.49172 0.50016	0.51104 0.50493	0.43069 0.50547	0.52098	0.49999	AVRG		0.49709		5.27080	
Chloroform	NE 0.83760	0.83735 0.82434	0.92168 0.82894	0.76299 0.83133	0.90532	0.84083	AVRG		0.84337		5.50143	
Bromochloromethane	NE 0.27357	0.30545 0.26970	0.30730 0.27351	0.26532 0.27768	0.29021	0.27450	AVRG		0.28191		5.47324	
1,1,1-Trichloroethane	NE 0.68374	0.74347 0.71284	0.70340 0.71494	0.62292 0.70114	0.77773	0.72356	AVRG		0.70930		5.96362	
1,1-Dichloropropene	NE 0.38166	0.44685 0.40803	0.40731 0.41082	0.36152 0.39353	0.41314	0.40896	AVRG		0.40353		5.83045	
1,2-Dichloroethane	NE 0.43158	0.45202 0.42458	0.44506 0.42168	0.42796 0.41752	0.47269	0.45348	AVRG		0.43851		4.18588	
Carbon Tetrachloride	NE 0.39118	0.50908 0.41598	0.46963 0.42471	0.38975 0.40844	0.44487	0.42801	AVRG		0.43130		8.92384	
Benzene	NE 1.15995	1.25620 1.14622	1.26876 1.15552	1.10904 1.13526	1.24627	1.18606	AVRG		1.18481		4.91091	
Trichloroethene	NE 0.34061	0.35992 0.34803	0.35732 0.35175	0.32377 0.34179	0.37398	0.36156	AVRG		0.35097		4.15640	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromodichloromethane	NE	0.41476	0.41935	0.38632	0.43854	0.42924						
	0.42664	0.42188	0.43361	0.43009			AVRG		0.42227		3.63023	
Methyl Methacrylate	NE	0.35428	0.36797	0.32032	0.31605	0.32716						
	0.33810	0.35297	0.35384	0.35264			AVRG		0.34259		5.23642	
2-Chloroethylvinyl ether	NE	1850	3725	7768	17033	78395						
	223234	504631	819469	1149192			LINR	0.10536	0.11870		0.99822	
1,2-Dichloropropane	NE	0.35770	0.28731	0.28964	0.32153	0.30561						
	0.30337	0.29927	0.30442	0.30096			AVRG		0.30776		6.87676	
2-Nitropropane	NE	0.12797	0.19178	0.11350	0.11279	0.11227						
	0.12611	0.13069	0.13385	0.13391			AVRG		0.13143		18.50296	*
Dibromomethane	NE	0.21251	0.21510	0.19090	0.21208	0.20478						
	0.20622	0.20334	0.20760	0.20586			AVRG		0.20649		3.42073	
4-Methyl-2-Pentanone	NE	0.22983	0.24561	0.22592	0.25146	0.24562						
	0.24472	0.24442	0.25282	0.25229			AVRG		0.24363		3.93284	
cis-1,3-Dichloropropene	NE	0.49743	0.50399	0.46440	0.52744	0.52481						
	0.53443	0.52810	0.54559	0.54209			AVRG		0.51870		4.97948	
Ethyl Methacrylate	NE	0.42724	0.44487	0.37757	0.36951	0.36730						
	0.39459	0.41348	0.42518	0.41767			AVRG		0.40416		6.92090	
Toluene	NE	1.48534	1.47874	1.31998	1.50056	1.42688						
	1.35111	1.35558	1.39012	1.34136			AVRG		1.40552		4.92585	
trans-1,3-Dichloropropene	NE	0.43482	0.34886	0.39948	0.40882	0.43356						
	0.45411	0.45430	0.46709	0.46507			AVRG		0.42957		8.93088	
2-Hexanone	NE	0.15729	0.14268	0.14354	0.15261	0.16082						
	0.15866	0.16217	0.16863	0.16860			AVRG		0.15722		6.02939	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,1,2-Trichloroethane	NE	0.26865	0.25359	0.25161	0.27292	0.25536						
	0.25236	0.25133	0.25533	0.25253			AVRG		0.25708		3.10239	
1,3-Dichloropropane	NE	0.53853	0.53548	0.47624	0.55751	0.52730						
	0.51727	0.51284	0.52419	0.51694			AVRG		0.52292		4.25815	
Dibromochloromethane	NE	0.37697	0.36224	0.34884	0.35529	0.37202						
	0.37149	0.37484	0.39045	0.38784			AVRG		0.37111		3.72423	
Tetrachloroethene	NE	0.33218	0.34917	0.30195	0.35645	0.34172						
	0.29942	0.31397	0.31997	0.30320			AVRG		0.32423		6.63880	
1,2-Dibromoethane	NE	0.33970	0.30962	0.29367	0.34003	0.33026						
	0.32860	0.32537	0.33375	0.33265			AVRG		0.32596		4.63664	
1-Chlorohexane	NE	0.27669	0.25539	0.22698	0.26192	0.26587						
	0.22707	0.26138	0.26751	0.25288			AVRG		0.25508		6.79509	
Chlorobenzene	NE	0.94815	0.96085	0.89814	1.00628	0.96687						
	0.92599	0.93555	0.95703	0.93363			AVRG		0.94805		3.19309	
1,1,1,2-Tetrachloroethane	NE	0.35679	0.35956	0.30262	0.36041	0.35591						
	0.34858	0.35393	0.36522	0.35850			AVRG		0.35128		5.35668	
Ethylbenzene	NE	0.48108	0.48827	0.43327	0.51619	0.50151						
	0.45868	0.47563	0.48606	0.46961			AVRG		0.47892		5.02565	
m,p-Xylenes	NE	0.55805	0.59871	0.56232	0.63413	0.62999						
	0.57839	0.59729	0.61406	0.58838			AVRG		0.59570		4.55362	
o-Xylene	NE	0.59290	0.58091	0.53642	0.60968	0.59466						
	0.55697	0.57740	0.58940	0.57361			AVRG		0.57911		3.77403	
Styrene	NE	0.91159	0.92976	0.83032	0.97583	0.98950						
	0.95759	0.99020	1.01045	0.98766			AVRG		0.95366		5.86887	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromoform	NE 238426	1755 516716	3730 810870	7169 1117306	20344	88254	LINR	0.02467	0.24853		0.99965	
Isopropylbenzene	NE 1.35695	1.43849 1.44809	1.47443 1.47877	1.30268 1.40439	1.54245	1.51550	AVRG		1.44020		5.26370	
1,1,2,2-Tetrachloroethane	NE 0.66696	0.78144 0.66668	0.76770 0.68892	0.65338 0.69597	0.70660	0.69246	AVRG		0.70224		6.32540	
1,2,3-Trichloropropane	NE 0.49473	0.58784 0.49603	0.58996 0.56553	0.54572 0.52662	0.53765	0.52889	AVRG		0.54144		6.44455	
trans-1,4-Dichloro-2-butene	NE 0.08441	0.08639 0.08926	0.07814 0.09300	0.07380 0.09316	0.07809	0.08014	AVRG		0.08404		8.27424	
n-Propylbenzene	NE 3.09097	3.25257 3.29325	3.29066 3.37575	2.95890 3.28483	3.57342	3.56584	AVRG		3.29846		6.00434	
Bromobenzene	NE 0.81720	0.87451 0.82902	0.85594 0.85910	0.81226 0.85431	0.91203	0.87056	AVRG		0.85388		3.65984	
1,3,5-Trimethylbenzene	NE 2.25194	2.59658 2.36457	2.46258 2.43329	2.25441 2.36654	2.59000	2.53828	AVRG		2.42869		5.38765	
2-Chlorotoluene	NE 1.93372	2.44781 1.97524	2.37660 2.01189	2.08294 2.01003	2.31087	2.13956	AVRG		2.14319		8.82358	
4-Chlorotoluene	NE 2.23415	2.65636 2.28193	2.51503 2.35478	2.21178 2.34073	2.48509	2.44971	AVRG		2.39217		6.10354	
tert-Butylbenzene	NE 1.87857	2.09660 2.01729	2.17146 2.06018	1.85260 1.99143	2.27190	2.18568	AVRG		2.05841		6.80340	
1,2,4-Trimethylbenzene	NE 2.26858	2.54200 2.34756	2.45760 2.40073	2.18686 2.36591	2.52880	2.48717	AVRG		2.39836		4.98293	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
sec-Butylbenzene	NE 2.56004	2.95435 2.79338	2.91853 2.87407	2.53800 2.77273	2.97323	2.98357	AVRG		2.81866		6.02795	
p-Isopropyltoluene	NE 2.27539	2.49491 2.44665	2.57620 2.52369	2.05158 2.45478	2.51906	2.60761	AVRG		2.43888		7.11852	
1,3-Dichlorobenzene	NE 1.33559	1.42838 1.36835	1.38167 1.40273	1.27970 1.39635	1.47031	1.42236	AVRG		1.38727		4.01099	
1,4-Dichlorobenzene	NE 1.38400	1.63964 1.39934	1.49121 1.43248	1.51626 1.42707	1.47011	1.49485	AVRG		1.47277		5.23516	
Benzyl Chloride	NE 0.39135	0.43855 0.44029	0.35095 0.47061	0.36716 0.48435	0.33474	0.36186	AVRG		0.40443		13.62917	
n-Butylbenzene	NE 1.93301	2.09569 2.10694	1.88248 2.19365	1.73548 2.12379	1.99640	2.17139	AVRG		2.02654		7.49858	
1,2-Dichlorobenzene	NE 1.20556	1.25628 1.22245	1.27315 1.26196	1.17606 1.26277	1.33041	1.27128	AVRG		1.25110		3.57355	
1,2-Dibromo-3-Chloropropane	NE 25520	270 61674	348 99187	994 141749	2347	9850	QUAD	0.00789	19.55533	-15.65262	0.99973	*
1,2,4-Trichlorobenzene	NE 0.43214	0.45967 0.47716	0.38549 0.51475	0.41755 0.51794	0.44197	0.45194	AVRG		0.45540		9.50182	
Hexachlorobutadiene	NE 0.36108	0.50564 0.42134	0.40894 0.43716	0.38476 0.43414	0.40071	0.43144	AVRG		0.42058		9.64578	
Naphthalene	NE 0.46478	0.50994 0.51932	0.48404 0.57671	0.47311 0.61432	0.48572	0.45717	AVRG		0.50946		10.49645	
1,2,3-Trichlorobenzene	NE 0.23796	0.28871 0.26010	0.23370 0.29029	0.23930 0.30074	0.24443	0.24414	AVRG		0.25993		10.08886	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Ethyl Acetate	NE 0.37468	0.40866 0.36462	0.36149 0.36571	0.38433 0.37416	0.37402	0.38793	AVRG		0.37729		3.88483	
Methyl Acrylate	NE 0.41135	NE 0.42110	0.08197 0.42509	0.18205 0.42984	0.32449	0.34779	AVRG		0.32796		39.52952	*
n-Butanol	NE 92515	245 210846	576 347477	1120 481768	5230	31323	LINR	1.40108	0.00747		0.99785	*
Ethyl Acrylate	NE 1.02705	NE 1.03586	0.33536 1.03173	0.44170 1.03664	0.52229	0.97049	AVRG		0.80014		38.58861	*
Cyclohexanone	NE 0.01354	0.02999 0.01391	0.02591 0.01452	0.01565 0.01455	0.01586	0.01385	AVRG		0.01753		34.47473	*
1,4-Dioxane	0.00383 0.00352	0.00344 0.00359	0.00432 0.00382	0.00347 0.00389	0.00372	0.00373	AVRG		0.00373		6.94690	
n-Hexane	NE 0.38690	0.44005 0.45615	0.48427 0.45806	0.38126 0.43794	0.43490	0.47909	AVRG		0.43985		8.18722	
Freon TF	NE 0.37612	0.42449 0.41014	0.45970 0.40358	0.37786 0.38444	0.46969	0.44805	AVRG		0.41712		8.52239	
Methyl Acetate	NE 0.23356	0.25878 0.23289	0.22048 0.23995	0.22103 0.24622	0.21722	0.22389	AVRG		0.23267		5.92161	
Methylcyclohexane	NE 0.69515	0.67480 0.69631	0.68095 0.70106	0.62360 0.69110	0.60827	0.66355	AVRG		0.67053		4.96855	
Isopropyl alcohol	NE 225158	3316 475723	4535 762854	7686 1075115	21076	91055	LINR	0.58093	0.01644		0.99840	
Amyl alcohol	NE NE	NE NE	NE NE	0.00150 0.00580	0.00100	0.00119	AVRG		0.00237		96.60442	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Allyl alcohol	NE 0.01935	0.02200 0.02281	0.02421 0.02290	0.01906 0.02190	0.02175	0.02395	AVRG		0.02199		8.18722	
4-Methyl-2-pentanol	NE 0.03573	0.05681 0.04032	0.05065 0.04227	0.04072 0.04253	0.03508	0.03609	AVRG		0.04224		17.16161	*
Tert-butyl alcohol	NE 0.02887	0.03495 0.02931	0.03178 0.02975	0.02713 0.03113	0.03008	0.02915	AVRG		0.03024		7.32692	
Diethyl ether	NE 0.30552	0.35577 0.30995	0.38001 0.30402	0.32336 0.30495	0.30084	0.30367	AVRG		0.32090		8.75260	
1,3-Butadiene	NE 0.34821	0.41434 0.36545	0.39518 0.36900	0.35913 0.35842	0.42141	0.38099	AVRG		0.37913		6.82959	
Cyclohexane	NE 0.53317	0.60481 0.59663	0.62314 0.59826	0.52543 0.57664	0.60938	0.60593	AVRG		0.58593		5.87736	
alpha-Methylstyrene	NE 1.08513	1.07038 1.12750	1.08091 1.16571	0.96349 1.16247	1.14232	1.15146	AVRG		1.10549		5.83113	
Diisopropyl ether	NE 1.26380	1.39968 1.27752	1.86885 1.26796	1.23209 1.27650	1.19970	1.22713	AVRG		1.33480		15.58023	*
Dichlorofluoromethane	NE 0.83117	NE 0.83166	NE 0.79161	0.86084 0.78977	0.77145	0.83721	AVRG		0.81624		3.93915	*
Propylene oxide	NE 0.04772	0.08712 0.04576	0.10974 0.04255	0.03868 0.04249	0.05506	0.04912	AVRG		0.05758		42.17888	*
3-Methyl-1-butanol	NE 0.00447	NE 0.00494	NE 0.00549	0.00237 0.00565	0.00347	0.00444	AVRG		0.00440		26.26662	*
Butyl acrylate	NE 0.50164	0.30448 0.56732	0.59325 0.61418	0.42297 0.61867	0.44119	0.46640	AVRG		0.50334		20.95468	*

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,2,3-Trimethylbenzene	NE 2.31984	2.92740 2.29092	3.22779 2.27588	2.21255 2.25601	2.09670	2.30114	AVRG		2.43425		15.53604	*
Ethanol	NE 0.00232	NE 0.00216	0.00334 0.00200	0.00286 0.00196	0.00237	0.00232	AVRG		0.00242		19.26668	*
tert-Butyl formate	NE 0.22700	NE 0.22636	NE 0.23607	0.18272 0.24972	0.27854	0.22563	AVRG		0.23229		12.45420	*
3,3-Dimethyl-1-butanol	NE 0.01872	NE 0.01954	NE 0.02065	NE 0.02030	0.01892	0.01905	AVRG		0.01953		4.03874	*
tert-Amyl methyl ether	NE 1.39217	2.10676 1.38747	2.26865 1.41592	1.57527 1.40512	1.57965	1.34448	AVRG		1.60839		21.19632	*
tert-Butyl ethyl ether	NE 1.34295	1.74247 1.34765	1.95381 1.34309	1.30884 1.34382	1.28219	1.29607	AVRG		1.44010		16.55837	*
tert-Amyl alcohol	NE 0.02270	0.03356 0.02264	0.02895 0.02361	0.01827 0.02454	0.02785	0.02256	AVRG		0.02496		17.98305	*
Epichlorohydrin	NE 0.01961	0.02675 0.01958	0.02118 0.02021	NE 0.01986	0.01652	0.01783	AVRG		0.02019		14.96144	*
Isoprene	NE 0.14709	0.19912 0.15073	0.26507 0.14545	0.34024 0.14053	0.20189	0.16573	AVRG		0.19510		34.67071	*
n-Amyl acetate	NE 0.39560	NE 0.41555	NE 0.45595	NE 0.47052	0.44323	0.39671	AVRG		0.42959		7.35377	*
Isopropyl acetate	NE 0.75305	NE 0.74717	0.96396 0.75576	0.66183 0.76345	0.82124	0.74749	AVRG		0.77674		11.21768	*
n-Butyl acetate	NE 0.16576	0.27205 0.16246	0.23390 0.17091	0.20429 0.16666	0.19245	0.17604	AVRG		0.19384		19.29181	*

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Acetaldehyde	NE 0.03193	NE 0.02386	0.05959 0.02374	0.05176 0.02405	0.03872	0.03091	AVRG		0.03557		38.21836	*
Methyl Amyl Ketone	NE 0.46461	0.23961 0.50221	0.44401 0.52577	0.33336 0.52518	0.41392	0.43757	AVRG		0.43180		21.77319	*
Dimethyl Disulfide	NE 0.67315	0.69299 0.70100	0.77600 0.71236	0.57117 0.70344	0.54730	0.62588	AVRG		0.66703		10.90625	
1,2-Dichloroethylene (total)	NE 0.47168	0.47474 0.46828	0.48149 0.47130	0.41258 0.47052	0.49952	0.46616	AVRG		0.46847		4.96279	
Xylenes (total)	NE 0.53624	0.51161 0.55294	0.53945 0.56412	0.49606 0.54437	0.57109	0.56990	AVRG		0.54286		4.74421	
Dibromofluoromethane	NE 346983	4991 746005	9308 1092576	18364 1508056	40606	142500	LINR	-0.01456	0.46506		0.99958	
1,2-Dichloroethane-d4	NE 382235	5362 809230	8675 1212903	15130 1659515	40441	154444	LINR	-0.00656	0.51338		0.99986	
Toluene-d8	NE 1.21663	1.45682 1.22523	1.25577 1.14163	1.35456 1.15509	1.16759	1.25429	AVRG		1.24751		8.16353	
4-Bromofluorobenzene	NE 453323	6586 977060	11894 1441404	19061 1974506	56818	180100	LINR	-0.01650	0.43895		0.99984	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

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Form 6I

Initial Calibration Verification (ICV)

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachlor	50.00	48.60	97.20	80-120	
1,1,1-Trichloroeth	50.00	47.27	94.55	80-120	
1,1,2,2-Tetrachlor	50.00	47.91	95.82	80-120	
Freon TF	50.00	47.39	94.80	80-120	
Methyl Acetate	50.00	48.74	97.49	80-120	
Cyclohexane	50.00	49.16	98.32	80-120	
Methylcyclohexane	50.00	49.18	98.36	80-120	
Carbon Disulfide	100.00	94.16	94.17	80-120	
2-Hexanone	100.00	104.32	104.33	80-120	
1,1,2-Trichloroeth	50.00	47.73	95.46	80-120	
1,1-Dichloroethane	50.00	46.55	93.12	80-120	
1,1-Dichloroethene	50.00	45.69	91.38	80-120	
1,1-Dichloropropen	50.00	47.92	95.85	80-120	
1,2,3-Trichloroben	50.00	58.54	117.10	80-120	
1,2,3-Trichloropro	50.00	46.25	92.50	80-120	
1,2,4-Trichloroben	50.00	56.47	112.95	80-120	
1,2,4-Trimethylben	50.00	48.76	97.53	80-120	
1,2-Dibromo-3-Chlo	50.00	54.31	108.62	80-120	
1,2-Dibromoethane	50.00	49.55	99.12	80-120	
1,2-Dichlorobenzen	50.00	49.77	99.55	80-120	
1,2-Dichloroethane	50.00	47.21	94.43	80-120	
1,2-Dichloropropan	50.00	47.16	94.33	80-120	
1,3,5-Trimethylben	50.00	47.69	95.39	80-120	
1,3-Dichlorobenzen	50.00	49.18	98.38	80-120	
1,3-Dichloropropan	50.00	48.03	96.07	80-120	
1,4-Dichlorobenzen	50.00	48.10	96.21	80-120	
1-Chlorohexane	50.00	47.00	94.02	80-120	
2,2-Dichloropropan	50.00	48.90	97.81	80-120	
2-Butanone	100.00	106.54	106.54	80-120	
2-Chlorotoluene	50.00	45.50	91.01	80-120	
4-Chlorotoluene	50.00	47.59	95.20	80-120	
p-Isopropyltoluene	50.00	48.81	97.64	80-120	
4-Methyl-2-Pentano	100.00	101.12	101.12	80-120	
Acetone	100.00	117.86	117.87	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_413360

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
Acetonitrile	50.00	464.45	928.91*	80-120	
Benzene	50.00	46.73	93.48	80-120	
Bromobenzene	50.00	48.10	96.21	80-120	
Bromochloromethane	50.00	46.01	92.02	80-120	
Bromodichlorometha	50.00	48.71	97.43	80-120	
Bromoform	50.00	48.27	96.55	80-120	
Bromomethane	50.00	48.45	96.92	80-120	
Carbon Tetrachlori	50.00	45.89	91.79	80-120	
Chlorobenzene	50.00	48.25	96.51	80-120	
Chloroethane	50.00	46.05	92.11	80-120	
Chloroform	50.00	47.08	94.16	80-120	
Chloromethane	50.00	47.90	95.81	80-120	
cis-1,2-Dichloroet	50.00	48.42	96.85	80-120	
cis-1,3-Dichloropr	50.00	50.10	100.21	80-120	
Dibromochlorometha	50.00	49.75	99.50	80-120	
Dibromomethane	50.00	48.27	96.55	80-120	
Dichlorodifluorome	50.00	49.07	98.16	80-120	
Ethylbenzene	50.00	48.53	97.07	80-120	
Hexachlorobutadien	50.00	51.08	102.17	80-120	
Isopropylbenzene	50.00	48.21	96.42	80-120	
m,p-Xylenes	100.00	99.09	99.09	80-120	
Methyl tert-butyl	50.00	46.68	93.37	80-120	
Methylene Chloride	50.00	47.96	95.92	80-120	
n-Butylbenzene	50.00	50.58	101.18	80-120	
n-Propylbenzene	50.00	48.36	96.73	80-120	
Naphthalene	50.00	59.28	118.57	80-120	
o-Xylene	50.00	48.22	96.45	80-120	
sec-Butylbenzene	50.00	47.71	95.44	80-120	
Styrene	50.00	50.47	100.96	80-120	
tert-Butylbenzene	50.00	47.36	94.73	80-120	
Tetrachloroethene	50.00	47.11	94.22	80-120	
Toluene	50.00	47.23	94.48	80-120	
trans-1,2-Dichloro	50.00	47.08	94.17	80-120	
trans-1,3-Dichloro	50.00	50.76	101.54	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc. **Workorder**

Project Longhorn GW Treatment Plant Bi-Weekly Samples **HS22080897**

RunID

Volatiles Organics by Method 8260C

VOA6_413360

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
Trichloroethene	50.00	47.65	95.31	80-120	
Trichlorofluoromet	50.00	47.02	94.04	80-120	
Vinyl Chloride	50.00	45.66	91.34	80-120	
1,2-Dichloroethyle	50.00	95.51	191.02*	80-120	
Xylenes (total)	150.00	147.31	98.21	80-120	
Tert-butyl alcohol	1000.00	983.68	98.37	80-120	
Dibromofluorometha	50.00	51.93	103.87	80-120	
1,2-Dichloroethane	50.00	50.89	101.79	80-120	
Toluene-d8	50.00	50.01	100.04	80-120	
4-Bromofluorobenze	50.00	52.16	104.34	80-120	
Dibromofluorometha	50.00	51.93	103.87	0-130	
1,2-Dichloroethane	50.00	50.89	101.79	0-130	
Toluene-d8	50.00	50.01	100.04	0-130	
4-Bromofluorobenze	50.00	52.16	104.34	0-130	

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Form 7

Continuing Calibration Verification (CCV)

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_415286

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-AUG-2022 1101
Lab File ID X081702.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dibromofluoromethane	50.0	53.61859	0.50549	0.100	-7.23718	20.0	Linear	
1,2-Dichloroethane-d4	50.0	54.35470	0.56147	0.100	-8.70941	20.0	Linear	
Toluene-d8	1.24751	1.25991	1.25991	0.100	-0.99379	20.0	Averaged	
4-Bromofluorobenzene	50.0	50.95519	0.45457	0.100	-1.91038	20.0	Linear	
1,1,1,2-Tetrachloroethane	0.35128	0.38391	0.38391	0.100	-9.28879	20.0	Averaged	
1,1,1-Trichloroethane	0.70930	0.76418	0.76418	0.100	-7.73633	20.0	Averaged	
1,1,2,2-Tetrachloroethane	0.70224	0.76693	0.76693	0.300	-9.21232	20.0	Averaged	
1,1,2-Trichloroethane	0.25708	0.26922	0.26922	0.100	-4.72394	20.0	Averaged	
1,1-Dichloroethane	0.76975	0.79746	0.79746	0.200	-3.60020	20.0	Averaged	
1,1-Dichloroethene	0.41738	0.38941	0.38941	0.100	6.70256	20.0	Averaged	
1,1-Dichloropropene	0.40353	0.43117	0.43117	0.100	-6.84797	20.0	Averaged	
1,2,3-Trichlorobenzene	0.25993	0.27455	0.27455	0.010	-5.62345	20.0	Averaged	
1,2,3-Trichloropropane	0.54144	0.61855	0.61855	0.100	-14.24098	20.0	Averaged	
1,2,4-Trichlorobenzene	0.45540	0.50393	0.50393	0.100	-10.65527	20.0	Averaged	
1,2,4-Trimethylbenzene	2.39836	2.73966	2.73966	0.100	-14.23084	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	57.06093	0.06093	0.040	-14.12185	20.0	Quadratic	
1,2-Dibromoethane	0.32596	0.34594	0.34594	0.100	-6.12932	20.0	Averaged	
1,2-Dichlorobenzene	1.25110	1.40521	1.40521	0.400	-12.31759	20.0	Averaged	
1,2-Dichloroethane	0.43851	0.47208	0.47208	0.100	-7.65521	20.0	Averaged	
1,2-Dichloropropane	0.30776	0.32832	0.32832	0.100	-6.68100	20.0	Averaged	
1,3,5-Trimethylbenzene	2.42869	2.76356	2.76356	0.100	-13.78798	20.0	Averaged	
1,3-Dichlorobenzene	1.38727	1.56478	1.56478	0.600	-12.79580	20.0	Averaged	
1,3-Dichloropropane	0.52292	0.54953	0.54953	0.100	-5.08791	20.0	Averaged	
1,4-Dichlorobenzene	1.47277	1.60757	1.60757	0.400	-9.15290	20.0	Averaged	
2,2-Dichloropropane	50.0	55.95057	0.76461	0.100	-11.90113	20.0	Linear	
2-Butanone	0.12543	0.13260	0.13260	0.100	-5.70995	20.0	Averaged	
2-Chlorotoluene	2.14319	2.32769	2.32769	0.100	-8.60900	20.0	Averaged	
2-Hexanone	0.15722	0.17213	0.17213	0.100	-9.48337	20.0	Averaged	
4-Chlorotoluene	2.39217	2.68856	2.68856	0.100	-12.38974	20.0	Averaged	
p-Isopropyltoluene	2.43888	2.85748	2.85748	0.100	-17.16372	20.0	Averaged	
4-Methyl-2-Pentanone	0.24363	0.26931	0.26931	0.100	-10.53924	20.0	Averaged	
Acetone	100	100	0.10575	0.100	-0.44723	20.0	Linear	
Benzene	1.18481	1.22084	1.22084	0.500	-3.04095	20.0	Averaged	
Bromobenzene	0.85388	0.94633	0.94633	0.100	-10.82649	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_415286

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-AUG-2022 1101
Lab File ID X081702.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Bromochloromethane	0.28191	0.28270	0.28270	0.100	-0.28024	20.0	Averaged	
Bromodichloromethane	0.42227	0.46313	0.46313	0.200	-9.67587	20.0	Averaged	
Bromoform	50.0	51.54973	0.25010	0.100	-3.09946	20.0	Linear	
Bromomethane	50.0	45.92383	0.31448	0.100	8.15235	20.0	Linear	
Carbon Disulfide	1.10497	1.11026	1.11026	0.100	-0.47810	20.0	Averaged	
Carbon Tetrachloride	0.43130	0.44324	0.44324	0.100	-2.76911	20.0	Averaged	
Chlorobenzene	0.94805	1.01230	1.01230	0.500	-6.77725	20.0	Averaged	
Chloroethane	0.32070	0.31282	0.31282	0.100	2.45546	20.0	Averaged	
Chloroform	0.84337	0.89772	0.89772	0.200	-6.44367	20.0	Averaged	
Chloromethane	50.0	60.27892	0.55820	0.100	-20.55784	20.0	Linear	<-
cis-1,2-Dichloroethene	0.49709	0.53655	0.53655	0.100	-7.93670	20.0	Averaged	
cis-1,3-Dichloropropene	0.51870	0.57999	0.57999	0.200	-11.81669	20.0	Averaged	
Dibromochloromethane	0.37111	0.39954	0.39954	0.100	-7.66046	20.0	Averaged	
Dibromomethane	0.20649	0.21384	0.21384	0.100	-3.55864	20.0	Averaged	
Dichlorodifluoromethane	50.0	53.20792	0.50679	0.100	-6.41585	20.0	Linear	
Ethylbenzene	0.47892	0.51664	0.51664	0.100	-7.87530	20.0	Averaged	
Hexachlorobutadiene	0.42058	0.46861	0.46861	0.100	-11.41950	20.0	Averaged	
Isopropylbenzene	1.44020	1.59574	1.59574	0.100	-10.80035	20.0	Averaged	
m,p-Xylenes	0.59570	0.65012	0.65012	0.100	-9.13591	20.0	Averaged	
Methylene Chloride	50.0	53.69352	0.49313	0.100	-7.38704	20.0	Linear	
n-Butylbenzene	2.02654	2.45915	2.45915	0.500	-21.34736	20.0	Averaged	<-
n-Propylbenzene	3.29846	3.86209	3.86209	0.100	-17.08748	20.0	Averaged	
Naphthalene	0.50946	0.55758	0.55758	0.200	-9.44588	20.0	Averaged	
o-Xylene	0.57911	0.62082	0.62082	0.300	-7.20279	20.0	Averaged	
sec-Butylbenzene	2.81866	3.28202	3.28202	0.100	-16.43903	20.0	Averaged	
Styrene	0.95366	1.05429	1.05429	0.300	-10.55213	20.0	Averaged	
tert-Butylbenzene	2.05841	2.34667	2.34667	0.100	-14.00371	20.0	Averaged	
Tetrachloroethene	0.32423	0.33412	0.33412	0.200	-3.05137	20.0	Averaged	
Toluene	1.40552	1.46257	1.46257	0.400	-4.05883	20.0	Averaged	
trans-1,2-Dichloroethene	0.43986	0.46283	0.46283	0.100	-5.22188	20.0	Averaged	
trans-1,3-Dichloropropene	0.42957	0.48795	0.48795	0.100	-13.59060	20.0	Averaged	
Trichloroethene	0.35097	0.36413	0.36413	0.200	-3.75063	20.0	Averaged	
Trichlorofluoromethane	0.78735	0.77568	0.77568	0.100	1.48243	20.0	Averaged	
Vinyl Chloride	0.52429	0.50267	0.50267	0.100	4.12524	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_415286

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-AUG-2022 1637
Lab File ID X081718.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dibromofluoromethane	50.0	53.00063	0.49974	0.100	-6.00126	50.0	Linear	
1,2-Dichloroethane-d4	50.0	52.57550	0.54320	0.100	-5.15100	50.0	Linear	
Toluene-d8	1.24751	1.21729	1.21729	0.100	2.42276	50.0	Averaged	
4-Bromofluorobenzene	50.0	50.68380	0.45219	0.100	-1.36759	50.0	Linear	
1,1,1,2-Tetrachloroethane	0.35128	0.39613	0.39613	0.100	-12.76914	50.0	Averaged	
1,1,1-Trichloroethane	0.70930	0.79869	0.79869	0.100	-12.60246	50.0	Averaged	
1,1,2,2-Tetrachloroethane	0.70224	0.76342	0.76342	0.300	-8.71308	50.0	Averaged	
1,1,2-Trichloroethane	0.25708	0.27251	0.27251	0.100	-6.00170	50.0	Averaged	
1,1-Dichloroethane	0.76975	0.83022	0.83022	0.200	-7.85571	50.0	Averaged	
1,1-Dichloroethene	0.41738	0.41136	0.41136	0.100	1.44165	50.0	Averaged	
1,1-Dichloropropene	0.40353	0.44596	0.44596	0.100	-10.51273	50.0	Averaged	
1,2,3-Trichlorobenzene	0.25993	0.28766	0.28766	0.010	-10.67066	50.0	Averaged	
1,2,3-Trichloropropane	0.54144	0.59480	0.59480	0.100	-9.85486	50.0	Averaged	
1,2,4-Trichlorobenzene	0.45540	0.51116	0.51116	0.100	-12.24287	50.0	Averaged	
1,2,4-Trimethylbenzene	2.39836	2.72522	2.72522	0.100	-13.62855	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	55.09910	0.05871	0.040	-10.19821	50.0	Quadratic	
1,2-Dibromoethane	0.32596	0.34917	0.34917	0.100	-7.11914	50.0	Averaged	
1,2-Dichlorobenzene	1.25110	1.40167	1.40167	0.400	-12.03494	50.0	Averaged	
1,2-Dichloroethane	0.43851	0.46422	0.46422	0.100	-5.86369	50.0	Averaged	
1,2-Dichloropropane	0.30776	0.32701	0.32701	0.100	-6.25754	50.0	Averaged	
1,3,5-Trimethylbenzene	2.42869	2.73117	2.73117	0.100	-12.45442	50.0	Averaged	
1,3-Dichlorobenzene	1.38727	1.56129	1.56129	0.600	-12.54406	50.0	Averaged	
1,3-Dichloropropane	0.52292	0.55648	0.55648	0.100	-6.41746	50.0	Averaged	
1,4-Dichlorobenzene	1.47277	1.60191	1.60191	0.400	-8.76864	50.0	Averaged	
2,2-Dichloropropane	50.0	56.34260	0.76994	0.100	-12.68521	50.0	Linear	
2-Butanone	0.12543	0.13542	0.13542	0.100	-7.95921	50.0	Averaged	
2-Chlorotoluene	2.14319	2.31032	2.31032	0.100	-7.79857	50.0	Averaged	
2-Hexanone	0.15722	0.17905	0.17905	0.100	-13.88117	50.0	Averaged	
4-Chlorotoluene	2.39217	2.66011	2.66011	0.100	-11.20065	50.0	Averaged	
p-Isopropyltoluene	2.43888	2.86163	2.86163	0.100	-17.33397	50.0	Averaged	
4-Methyl-2-Pentanone	0.24363	0.27481	0.27481	0.100	-12.79555	50.0	Averaged	
Acetone	100	96.99399	0.10231	0.100	3.00601	50.0	Linear	
Benzene	1.18481	1.24495	1.24495	0.500	-5.07585	50.0	Averaged	
Bromobenzene	0.85388	0.93372	0.93372	0.100	-9.35046	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder HS22080897

RunID VOA6_415286

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 17-AUG-2022 1637
Lab File ID X081718.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Bromochloromethane	0.28191	0.29040	0.29040	0.100	-3.01052	50.0	Averaged	
Bromodichloromethane	0.42227	0.46548	0.46548	0.200	-10.23189	50.0	Averaged	
Bromoform	50.0	52.26458	0.25365	0.100	-4.52916	50.0	Linear	
Bromomethane	50.0	46.02023	0.31512	0.100	7.95953	50.0	Linear	
Carbon Disulfide	1.10497	1.14105	1.14105	0.100	-3.26440	50.0	Averaged	
Carbon Tetrachloride	0.43130	0.46025	0.46025	0.100	-6.71261	50.0	Averaged	
Chlorobenzene	0.94805	1.02738	1.02738	0.500	-8.36724	50.0	Averaged	
Chloroethane	0.32070	0.33070	0.33070	0.100	-3.11889	50.0	Averaged	
Chloroform	0.84337	0.93386	0.93386	0.200	-10.72947	50.0	Averaged	
Chloromethane	50.0	52.42431	0.48540	0.100	-4.84862	50.0	Linear	
cis-1,2-Dichloroethene	0.49709	0.55262	0.55262	0.100	-11.17095	50.0	Averaged	
cis-1,3-Dichloropropene	0.51870	0.57068	0.57068	0.200	-10.02084	50.0	Averaged	
Dibromochloromethane	0.37111	0.40494	0.40494	0.100	-9.11536	50.0	Averaged	
Dibromomethane	0.20649	0.22020	0.22020	0.100	-6.63833	50.0	Averaged	
Dichlorodifluoromethane	50.0	54.24421	0.51663	0.100	-8.48842	50.0	Linear	
Ethylbenzene	0.47892	0.53558	0.53558	0.100	-11.83101	50.0	Averaged	
Hexachlorobutadiene	0.42058	0.48188	0.48188	0.100	-14.57569	50.0	Averaged	
Isopropylbenzene	1.44020	1.66672	1.66672	0.100	-15.72902	50.0	Averaged	
m,p-Xylenes	0.59570	0.67308	0.67308	0.100	-12.98926	50.0	Averaged	
Methylene Chloride	50.0	54.99356	0.50488	0.100	-9.98712	50.0	Linear	
n-Butylbenzene	2.02654	2.47969	2.47969	0.500	-22.36107	50.0	Averaged	
n-Propylbenzene	3.29846	3.83895	3.83895	0.100	-16.38602	50.0	Averaged	
Naphthalene	0.50946	0.54939	0.54939	0.200	-7.83816	50.0	Averaged	
o-Xylene	0.57911	0.63868	0.63868	0.300	-10.28775	50.0	Averaged	
sec-Butylbenzene	2.81866	3.30211	3.30211	0.100	-17.15202	50.0	Averaged	
Styrene	0.95366	1.07694	1.07694	0.300	-12.92736	50.0	Averaged	
tert-Butylbenzene	2.05841	2.36187	2.36187	0.100	-14.74214	50.0	Averaged	
Tetrachloroethene	0.32423	0.34598	0.34598	0.200	-6.70860	50.0	Averaged	
Toluene	1.40552	1.49571	1.49571	0.400	-6.41692	50.0	Averaged	
trans-1,2-Dichloroethene	0.43986	0.47663	0.47663	0.100	-8.35942	50.0	Averaged	
trans-1,3-Dichloropropene	0.42957	0.48634	0.48634	0.100	-13.21734	50.0	Averaged	
Trichloroethene	0.35097	0.37029	0.37029	0.200	-5.50403	50.0	Averaged	
Trichlorofluoromethane	0.78735	0.82255	0.82255	0.100	-4.46996	50.0	Averaged	
Vinyl Chloride	0.52429	0.51411	0.51411	0.100	1.94239	50.0	Averaged	

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Form 8

Internal Standard Area and RT Summary

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

RunID
VOA6_415286

		IS1				IS2				IS3				IS4			
Sample ID	File ID	Area		RT		Area		RT		Area		RT		Area		RT	
12-HOUR STD (CCV)	X081702	562938	#	4.19	#	841313	#	4.97	#	790177	#	7.67	#	380247	#	9.67	#
CCB	X081704	660564		4.19		935636		4.97		814001		7.67		355119		9.67	
VLCSW-220817	X081705	569887		4.19		849870		4.97		783370		7.67		375034		9.67	
VBLKW-220817	X081707	643468		4.19		921008		4.97		800425		7.67		342859		9.67	
HS22080897-02	X081708	634115		4.19		902832		4.97		787854		7.67		351542		9.67	
HS22080897-01	X081709	651348		4.19		922341		4.97		828064		7.67		379860		9.67	
HS22080897-01MS	X081716	640659		4.19		911780		4.97		836163		7.67		407172		9.66	
HS22080897-01MSD	X081717	644290		4.19		920413		4.97		817563		7.67		394121		9.67	
CCV-END	X081718	545180		4.19		824841		4.97		776443		7.67		387090		9.67	

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

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Analysis Run Log

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

RunID
VOA6_413360

Instrument ID VOA6 **Matrix** R413360 **Start Date** 07/19/2022 **EndDate** 07/19/2022

Client Sample ID	Type	Lab Sample ID	DF	Analysis Date	File ID
BFB	TUNE	BFB	1	07/19/22 11:06	X071901.D
VSTD000.25	ICAL1	VSTD000.25	1	07/19/22 11:27	X071902.D
VSTD000.5	ICAL2	VSTD000.5	1	07/19/22 12:08	X071903.D
VSTD001	ICAL3	VSTD001	1	07/19/22 12:29	X071904.D
VSTD002	ICAL4	VSTD002	1	07/19/22 12:50	X071905.D
VSTD005	ICAL5	VSTD005	1	07/19/22 13:11	X071906.D
VSTD020	ICAL6	VSTD020	1	07/19/22 13:32	X071907.D
VSTD050	ICAL7	VSTD050	1	07/19/22 13:53	X071908.D
VSTD100	ICAL8	VSTD100	1	07/19/22 14:14	X071909.D
VSTD150	ICAL9	VSTD150	1	07/19/22 14:35	X071910.D
VSTD200	ICAL	VSTD200	1	07/19/22 14:56	X071911.D
CCV	ICV	CCV	1	07/19/22 16:20	X071915.D

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project Longhorn GW Treatment Plant Bi-Weekly Samples

Workorder
HS22080897

Volatiles Organics by Method 8260C

RunID
VOA6_415286

Instrument ID VOA6 **Matrix** R415286 **Start Date** 08/17/2022 **EndDate** 08/17/2022

Client Sample ID	Type	Lab Sample ID	DF	Analysis Date	File ID
BFB	TUNE	BFB	1	08/17/22 10:40	X081701.D
CCV	CCV	CCV	1	08/17/22 11:01	X081702.D
CCB	CCB	CCB	1	08/17/22 11:43	X081704.D
VLCSW-220817	LCS	VLCSW-220817	1	08/17/22 12:04	X081705.D
VBLKW-220817	MBLK	VBLKW-220817	1	08/17/22 12:46	X081707.D
Trip Blank	SAMP	HS22080897-02	1	08/17/22 13:07	X081708.D
LH18/24-SP650_081622	SAMP	HS22080897-01	1	08/17/22 13:28	X081709.D
HS22080897-01MS	MS	HS22080897-01MS	1	08/17/22 15:55	X081716.D
HS22080897-01MSD	MSD	HS22080897-01MSD	1	08/17/22 16:16	X081717.D
CCV-END	CCV_END	CCV-END	1	08/17/22 16:37	X081718.D

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Raw Data VOA6 413360

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Data File: \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D Page 1
Report Date: 19-Jul-2022 11:27

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 19-JUL-2022 11:06
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : HS22052000V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\bfb.m
Meth Date : 14-Jun-2022 12:47 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
8.698	8.889	(0.000)	95	32320			0.00- 100.00	100.00
8.698	8.889	(0.000)	50	5179			15.00- 40.00	16.02
8.698	8.889	(0.000)	75	16180			30.00- 60.00	50.06
8.698	8.889	(0.000)	96	2034			5.00- 9.00	6.29
8.698	8.889	(0.000)	173	170			0.00- 2.00	0.53
8.698	8.889	(0.000)	174	32248			50.00- 0.00	99.78
8.698	8.889	(0.000)	175	2068			5.00- 9.00	6.41
8.698	8.889	(0.000)	176	32048			95.00- 101.00	99.38
8.698	8.889	(0.000)	177	1757			5.00- 9.00	5.48

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.02
75	30.00 - 60.00% of mass 95	50.06
96	5.00 - 9.00% of mass 95	6.29
173	Less than 2.00% of mass 174	0.53 (0.53)
174	Greater than 50.00% of mass 95	99.78
175	5.00 - 9.00% of mass 174	6.40 (6.41)
176	95.00 - 101.00% of mass 174	99.16 (99.38)
177	5.00 - 9.00% of mass 176	5.44 (5.48)

Data File: X071901.D
Spectrum: Scan 2165 (8.70)
Location of Maximum: 95.00
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	403	61.90	879	87.90	1444	128.80	207
37.10	1658	63.00	1157	90.90	136	129.80	301
38.10	1647	64.00	301	92.00	847	137.00	117
39.00	908	65.00	56	93.10	1045	139.00	107
40.10	707	65.80	80	94.00	3846	141.00	494
41.00	93	67.00	143	95.00	32320	141.90	76
44.00	900	68.00	3426	96.00	2034	142.90	211
45.00	387	69.10	3149	97.00	70	147.80	82
47.10	310	70.10	316	103.70	114	149.70	61
47.80	125	71.90	395	104.10	107	155.10	64
48.30	97	72.90	1771	104.80	86	156.80	105
49.00	1195	74.00	5297	105.90	90	170.00	130
50.00	5179	75.00	16180	106.60	55	172.90	170
51.00	1985	76.00	1271	109.10	59	173.90	32248
52.20	111	77.00	406	109.90	93	175.00	2068
54.90	93	77.90	329	112.80	52	175.90	32048
56.10	488	78.90	1240	115.90	314	177.00	1757
56.90	1104	79.80	364	116.80	350	177.90	82
58.00	145	80.90	1270	118.00	96	186.10	221
60.00	255	81.90	202	118.80	198	262.00	64
61.00	1500	86.90	1378	128.00	111		

Data File: \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D Page 1

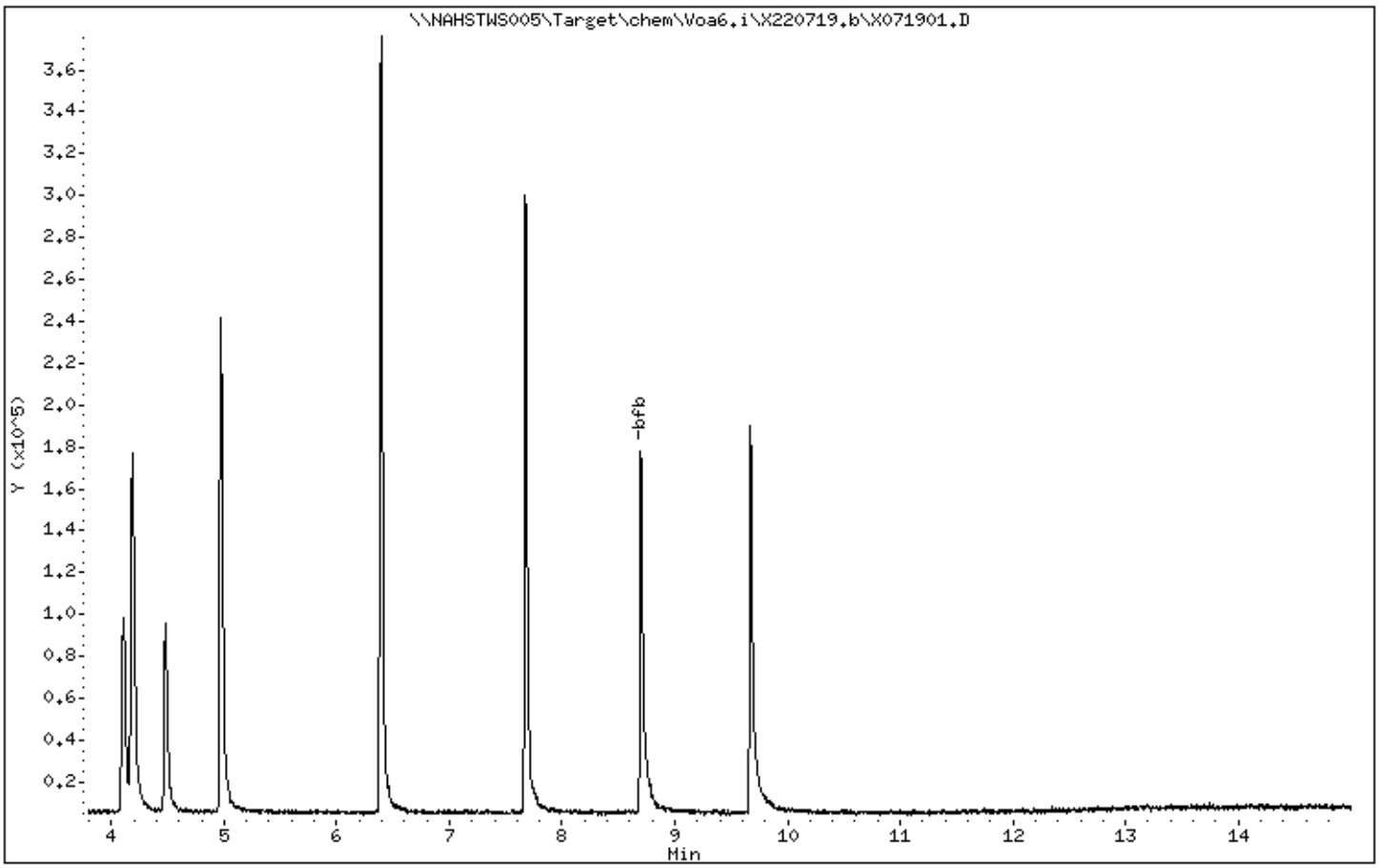
Date : 19-JUL-2022 11:06

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\X220719.b\X071901.D Page 2

Date : 19-JUL-2022 11:06

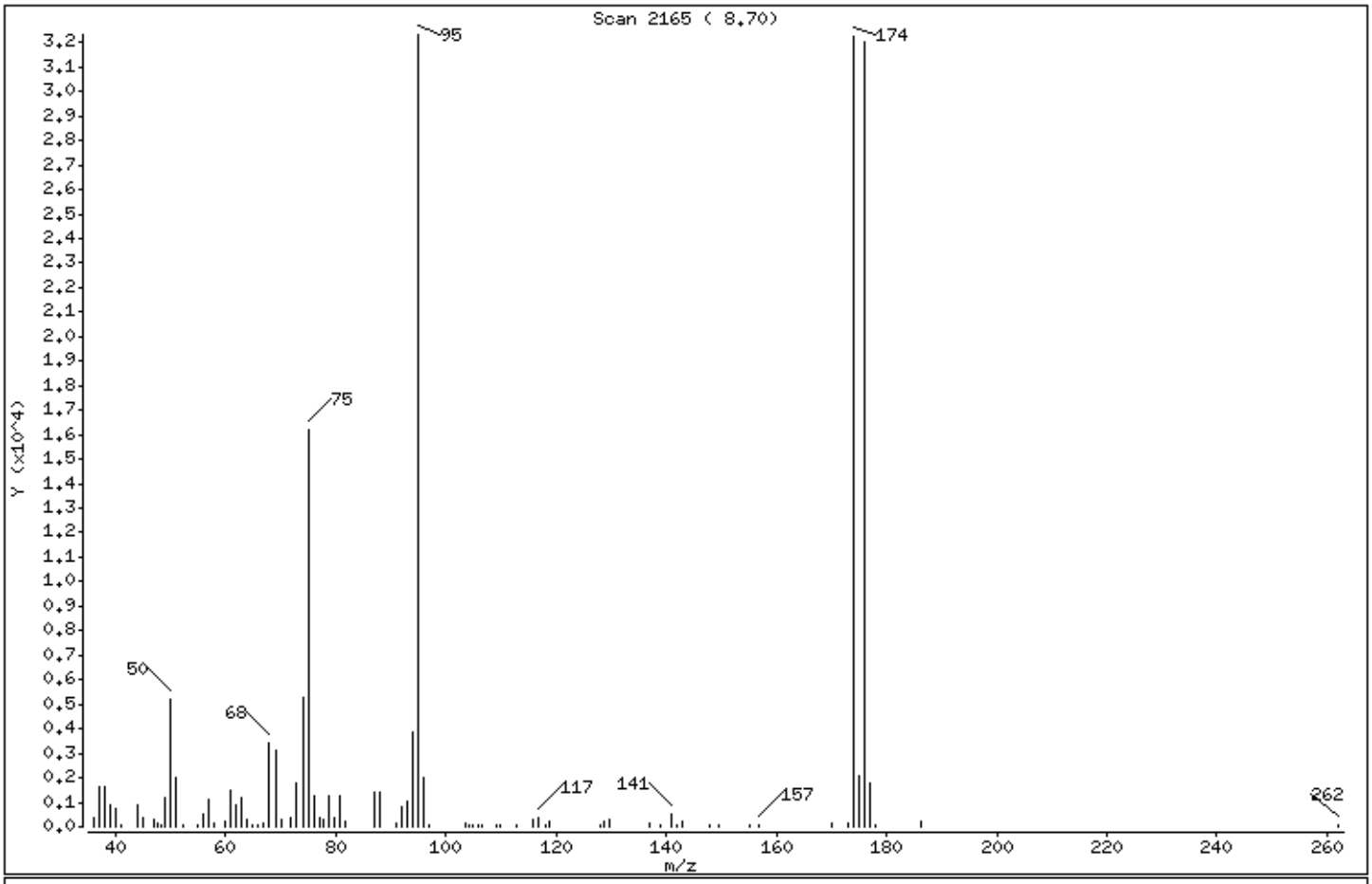
Client ID: BFB Instrument: voa6.i

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	16.02
75	30.00 - 60.00% of mass 95	50.06
96	5.00 - 9.00% of mass 95	6.29
173	Less than 2.00% of mass 174	0.53 (0.53)
174	Greater than 50.00% of mass 95	99.78
175	5.00 - 9.00% of mass 174	6.40 (6.41)
176	95.00 - 101.00% of mass 174	99.16 (99.38)
177	5.00 - 9.00% of mass 176	5.44 (5.48)

Data File: \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D Page 3

Date : 19-JUL-2022 11:06

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: X071901.D
Spectrum: Scan 2165 (8.70)
Location of Maximum: 95.00
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	403	61.90	879	87.90	1444	128.80	207
37.10	1658	63.00	1157	90.90	136	129.80	301
38.10	1647	64.00	301	92.00	847	137.00	117
39.00	908	65.00	56	93.10	1045	139.00	107
40.10	707	65.80	80	94.00	3846	141.00	494
41.00	93	67.00	143	95.00	32320	141.90	76
44.00	900	68.00	3426	96.00	2034	142.90	211
45.00	387	69.10	3149	97.00	70	147.80	82
47.10	310	70.10	316	103.70	114	149.70	61
47.80	125	71.90	395	104.10	107	155.10	64
48.30	97	72.90	1771	104.80	86	156.80	105
49.00	1195	74.00	5297	105.90	90	170.00	130
50.00	5179	75.00	16180	106.60	55	172.90	170
51.00	1985	76.00	1271	109.10	59	173.90	32248
52.20	111	77.00	406	109.90	93	175.00	2068
54.90	93	77.90	329	112.80	52	175.90	32048
56.10	488	78.90	1240	115.90	314	177.00	1757
56.90	1104	79.80	364	116.80	350	177.90	82
58.00	145	80.90	1270	118.00	96	186.10	221
60.00	255	81.90	202	118.80	198	262.00	64
61.00	1500	86.90	1378	128.00	111		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D Page 1
Report Date: 19-Aug-2022 10:59

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 19-JUL-2022 11:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 10:59 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 14:56 Cal File: X071911.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	835764	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.969	(1.000)	1243619	50.0000	
* 47 Chlorobenzene-d5	117	7.675	7.675	(1.000)	1125944	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	516358	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	2821	0.25000	(a)
$ 35 1,2-Dichloroethane-d4	65	4.489	4.489	(1.073)	3098	0.25000	0.03(aM)
$ 48 Toluene-d8	98	6.404	6.404	(0.834)	8187	0.25000	0.29(aM)
$ 69 4-Bromofluorobenzene	95	8.717	8.717	(1.136)	4127	0.25000	(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.013)	2061	0.25000	0.26(a)
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.978)	2586	0.25000	0.21(a)
68 1,1,2,2-Tetrachloroethane	83	8.852	8.852	(0.916)	2066	0.25000	0.28(aM)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.893)	1586	0.25000	0.27(a)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	3255	0.25000	0.25(Ta)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	1876	0.25000	0.26(a)
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	3123	0.25000	0.31(a)
93 1,2,3-Trichlorobenzene	180	11.791	11.791	(1.220)	365	0.25000	0.13(aM)
71 1,2,3-Trichloropropane	75	8.878	8.878	(0.919)	898	0.25000	0.16(a)
90 1,2,4-Trichlorobenzene	180	11.427	11.427	(1.182)	737	0.25000	0.15(aM)
79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	5841	0.25000	0.23(a)
57 1,2-Dibromoethane	107	7.281	7.281	(0.949)	1909	0.25000	0.26(a)

88 1,2-Dichlorobenzene	146	10.018	10.018 (1.036)	2967	0.25000	0.22(a)
33 1,2-Dichloroethane	62	4.571	4.571 (0.920)	2679	0.25000	0.24(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D Page 2
Report Date: 19-Aug-2022 10:59

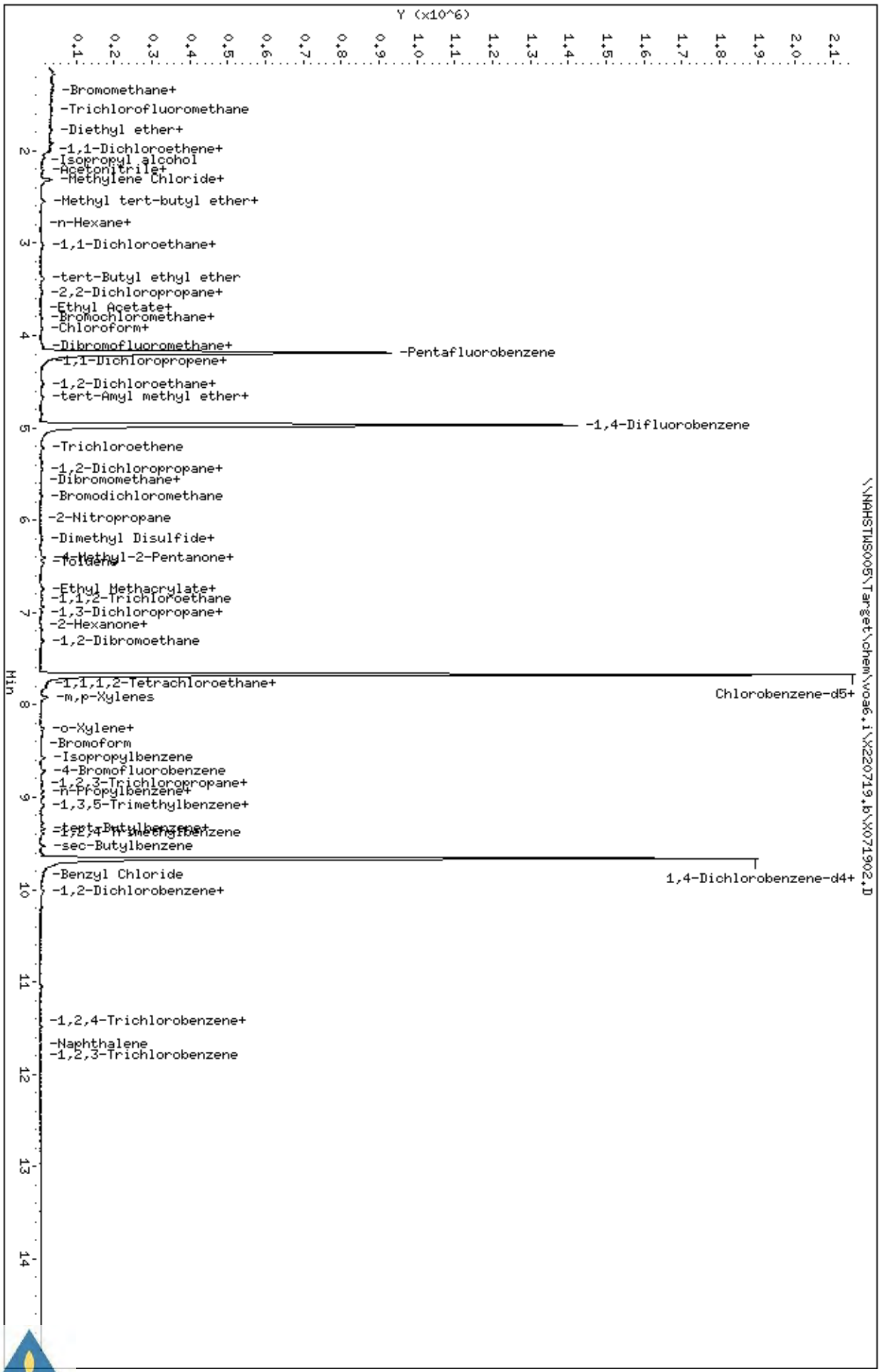
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.452	5.452	(1.097)	1860	0.25000	0.24(a)
75	1,3,5-Trimethylbenzene	105	9.081	9.081	(0.940)	5704	0.25000	0.22(a)
83	1,3-Dichlorobenzene	146	9.617	9.617	(0.995)	3278	0.25000	0.22(a)
54	1,3-Dichloropropane	76	7.000	7.000	(0.912)	3168	0.25000	0.26(a)
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	4292	0.25000	0.28(a)
26	2,2-Dichloropropane	77	3.522	3.522	(0.841)	2918	0.25000	0.00(aM)
24	2-Butanone	43	3.709	3.709	(0.886)	1011	0.50000	0.48(aM)
76	2-Chlorotoluene	91	8.991	8.991	(0.930)	5527	0.25000	0.24(a)
52	2-Hexanone	43	7.139	7.139	(0.930)	1144	0.50000	0.32(a)
77	4-Chlorotoluene	91	9.103	9.103	(0.942)	5589	0.25000	0.22(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	5688	0.25000	0.22(a)
45	4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	1814	0.50000	0.33(a)
10	Acetone	43	1.973	1.973	(0.472)	1327	0.50000	(aM)
37	Benzene	78	4.530	4.530	(0.912)	7348	0.25000	0.24(a)
74	Bromobenzene	156	8.833	8.833	(0.914)	1831	0.25000	0.20(a)
29	Bromochloromethane	128	3.810	3.810	(0.910)	1379	0.25000	0.29(a)
39	Bromodichloromethane	83	5.741	5.741	(1.155)	2545	0.25000	0.24(aM)
66	Bromoform	173	8.421	8.421	(1.097)	995	0.25000	1.41(aM)
6	Bromomethane	94	1.351	1.351	(0.323)	3274	0.25000	(a)
19	Carbon Disulfide	76	2.082	2.082	(0.498)	9996	0.50000	0.54(a)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	2941	0.25000	0.27(aM)
59	Chlorobenzene	112	7.698	7.698	(1.003)	5699	0.25000	0.26(a)
7	Chloroethane	64	1.407	1.407	(0.336)	1480	0.25000	0.27(aM)
28	Chloroform	83	3.919	3.919	(0.936)	3577	0.25000	0.25(a)
3	Chloromethane	50	1.081	1.081	(0.258)	2143	0.25000	0.32(a)
27	cis-1,2-Dichloroethene	96	3.555	3.555	(0.850)	2176	0.25000	0.26(aM)
46	cis-1,3-Dichloropropene	75	6.176	6.176	(1.243)	3069	0.25000	0.23(aM)
55	Dibromochloromethane	129	7.191	7.191	(0.937)	1966	0.25000	0.23(a)
44	Dibromomethane	93	5.565	5.565	(1.120)	1155	0.25000	0.22(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	1741	0.25000	0.04(a)
61	Ethylbenzene	106	7.810	7.810	(1.018)	2551	0.25000	0.23(a)
91	Hexachlorobutadiene	225	11.491	11.491	(1.189)	656	0.25000	0.15(aM)
67	Isopropylbenzene	105	8.575	8.575	(1.117)	7326	0.25000	0.22(a)
62	m,p-Xylenes	106	7.915	7.915	(1.031)	5956	0.50000	0.44(a)
17	Methylene Chloride	84	2.303	2.303	(0.550)	2179	0.25000	(aM)
87	n-Butylbenzene	91	10.022	10.022	(1.037)	2636	0.25000	0.12(aM)
73	n-Propylbenzene	91	8.935	8.935	(0.924)	8239	0.25000	0.24(a)
92	Naphthalene	128	11.671	11.671	(1.207)	1028	0.25000	0.19(aM)
63	o-Xylene	106	8.264	8.264	(1.077)	3336	0.25000	0.25(a)
81	sec-Butylbenzene	105	9.527	9.527	(0.986)	7167	0.25000	0.24(a)
64	Styrene	104	8.309	8.309	(1.083)	4361	0.25000	0.20(a)
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	4918	0.25000	0.23(a)
56	Tetrachloroethene	164	6.933	6.933	(0.903)	1792	0.25000	0.24(a)
50	Toluene	91	6.460	6.460	(0.842)	8059	0.25000	0.25(a)
20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	1679	0.25000	0.22(a)
51	trans-1,3-Dichloropropene	75	6.715	6.715	(1.352)	2385	0.25000	0.22(a)
38	Trichloroethene	130	5.220	5.220	(1.051)	2042	0.25000	0.23(a)
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	2838	0.25000	0.21(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	2270	0.25000	0.25(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Date : 19-JUL-2022 11:27
Client ID: WSTD000.25
Sample Info: WSTD000.25;WSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

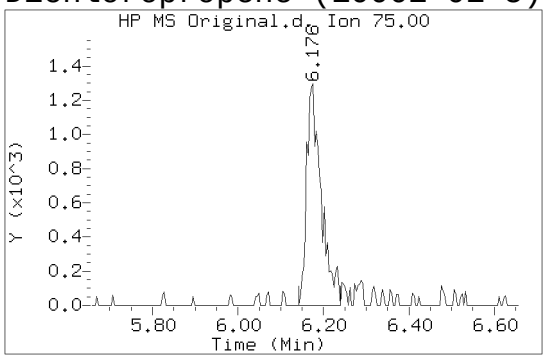
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Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

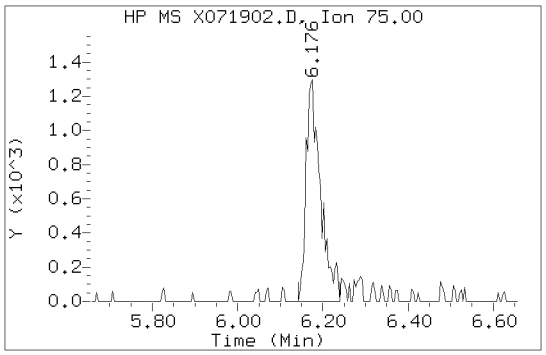
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1379
HEIGHT
582
25-Jul-2022
09:00
linh
pham



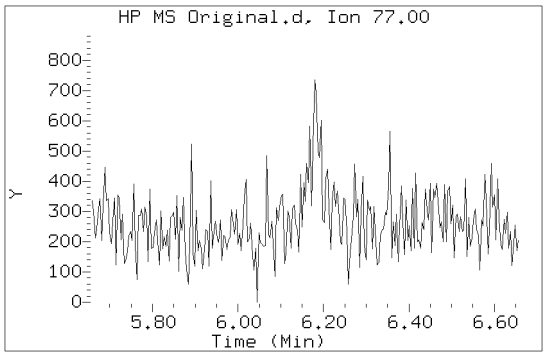
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10:59
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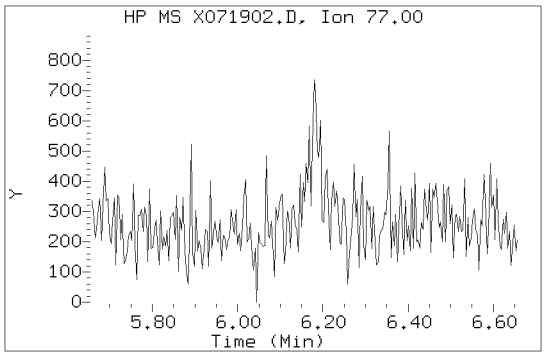
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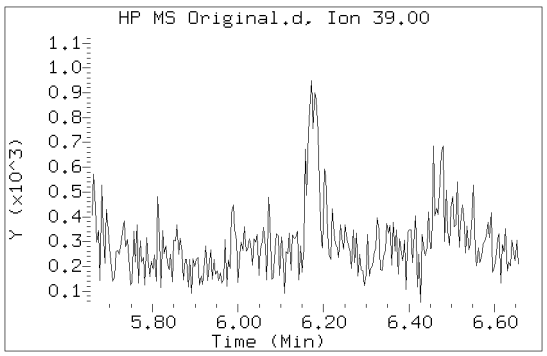
AFTER

MASS
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AREA
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10:59
linh
pham



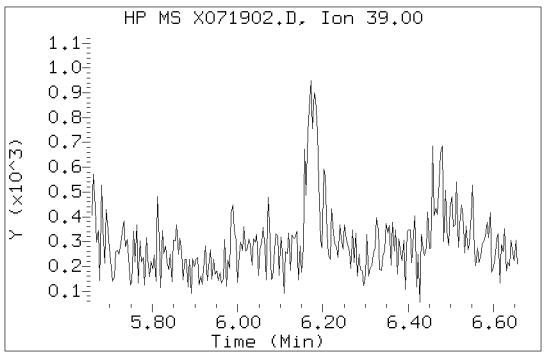
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09:00
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AFTER

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19-Aug-2022
10:59
linh
pham

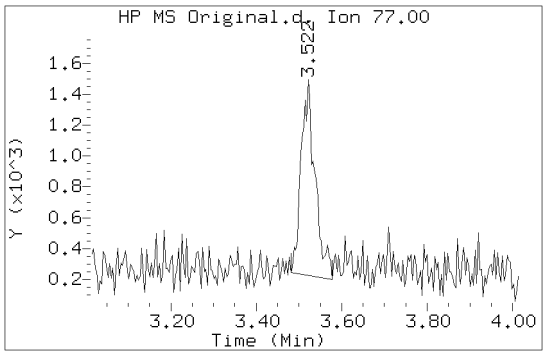


2,2-Dichloropropane (594-20-7)

Reason Code:

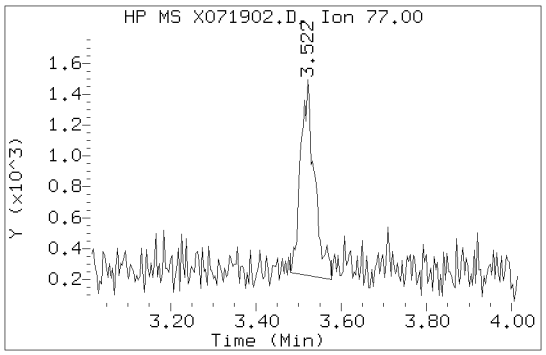
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25-Jul-2022
09:00
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AFTER

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19-Aug-2022
10:59
linh
pham



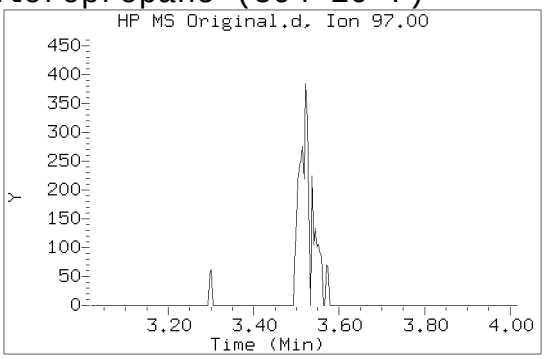
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

2,2-Dichloropropane (594-20-7)

Reason Code:

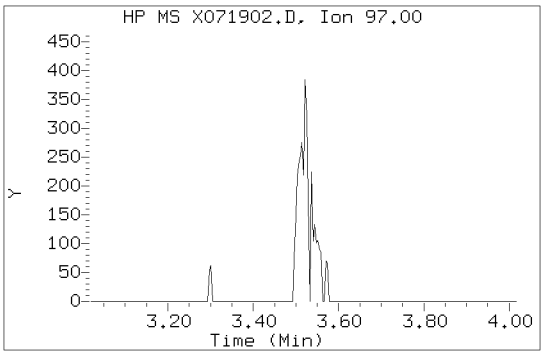
BEFORE

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25-Jul-2022
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AFTER

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HEIGHT
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19-Aug-2022
10:59
linh
pham

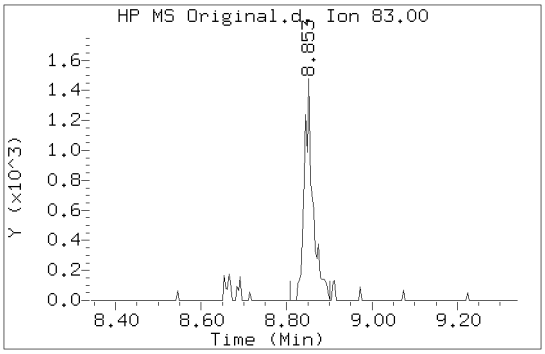


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

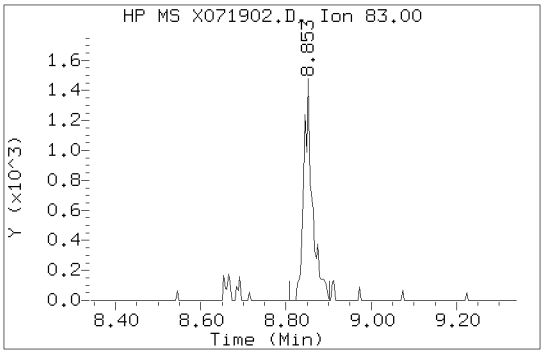
BEFORE

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HEIGHT
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25-Jul-2022
09:00
linh
pham



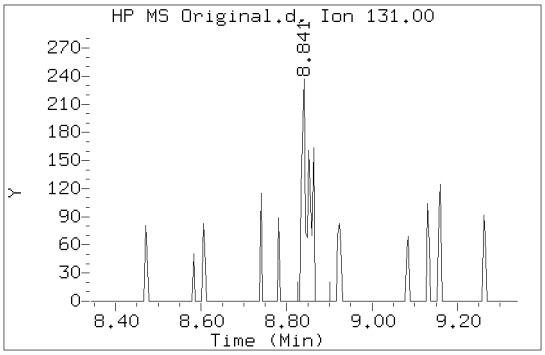
AFTER

MASS
83
AREA
2066
HEIGHT
1478
19-Aug-2022
10:59
linh
pham



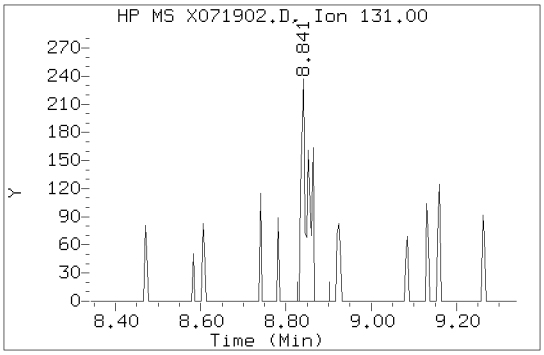
BEFORE

MASS
151
AREA
1093
HEIGHT
601
25-Jul-2022
09:00
linh
pham



AFTER

MASS
131
AREA
261
HEIGHT
237
19-Aug-2022
10:59
linh
pham

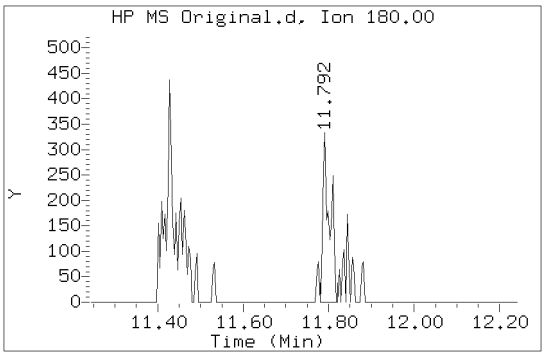


1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

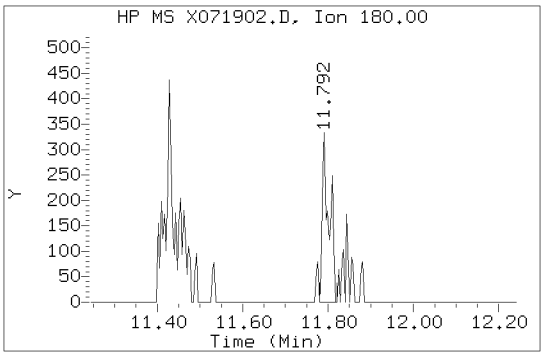
BEFORE

MASS
77
AREA
2918
HEIGHT
1268
25-Jul-2022
09:00
linh
pham



AFTER

MASS
180
AREA
365
HEIGHT
333
19-Aug-2022
10:59
linh
pham

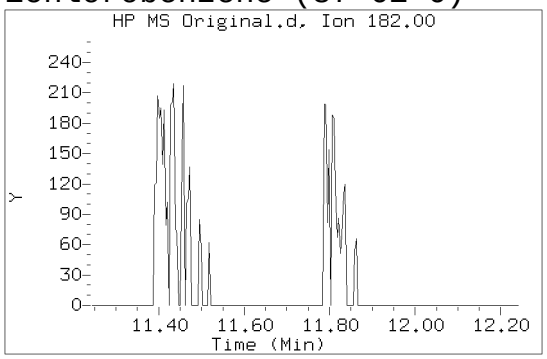


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

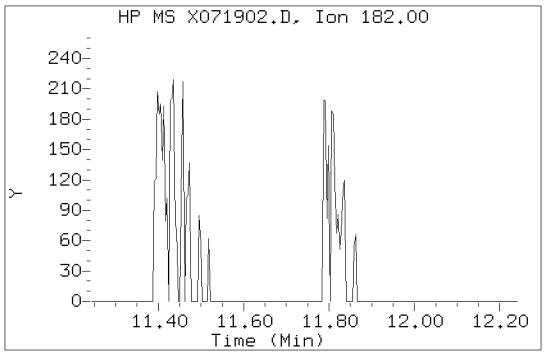
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

BEFORE
MASS
97
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



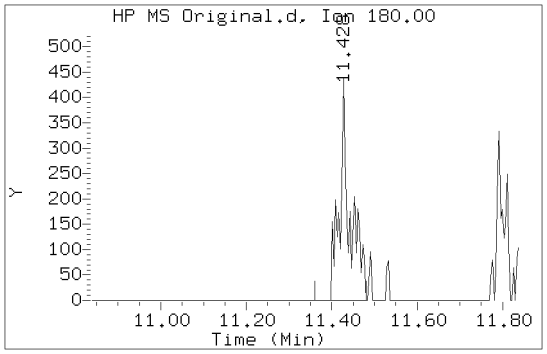
AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



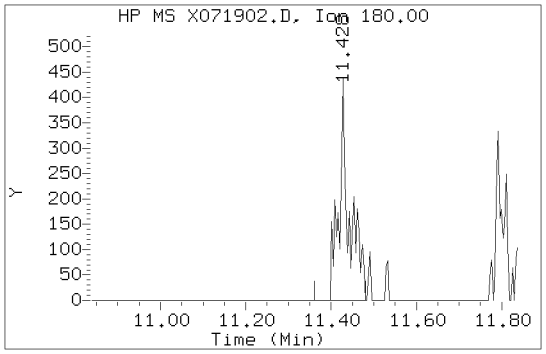
1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

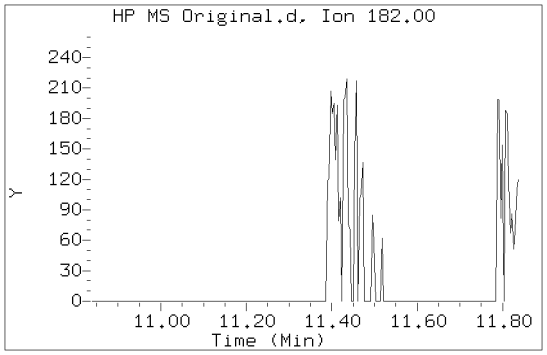
BEFORE
MASS
93
AREA
1155
HEIGHT
850
25-Jul-2022
09:00
linh
pham



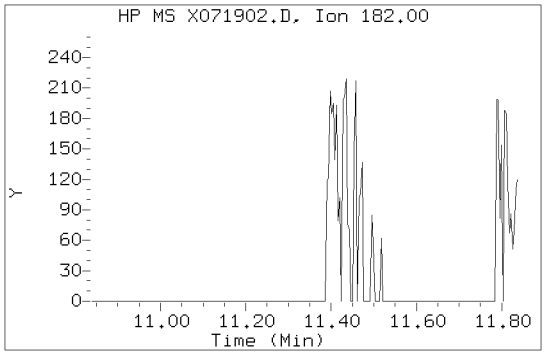
AFTER
MASS
180
AREA
737
HEIGHT
437
19-Aug-2022
10:59
linh
pham



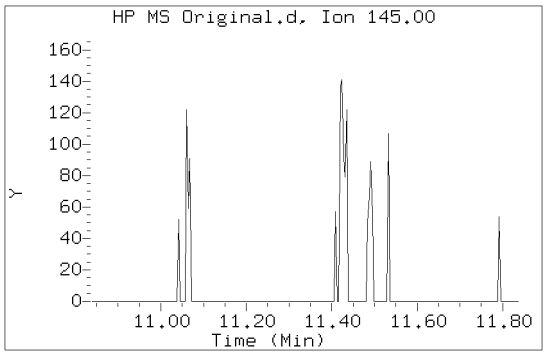
BEFORE
MASS
95
AREA
1189
HEIGHT
756
25-Jul-2022
09:00
linh
pham



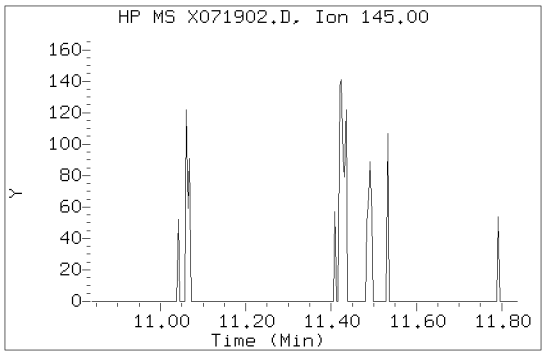
AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
174
AREA
1408
HEIGHT
628
25-Jul-2022
09:00
linh
pham



AFTER
MASS
145
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



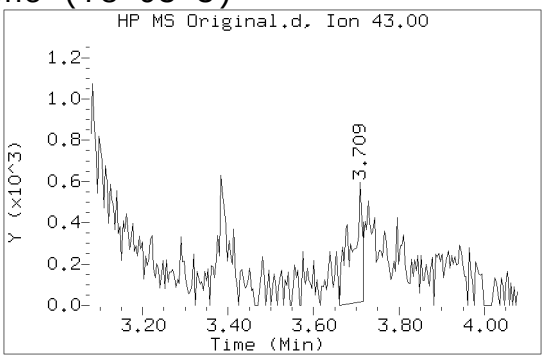
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

2-Butanone (78-93-3)

Reason Code:

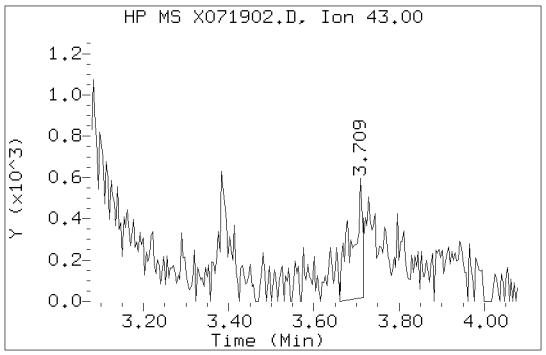
BEFORE

MASS
83
AREA
2066
HEIGHT
1478
25-Jul-2022
09:00
linh
pham



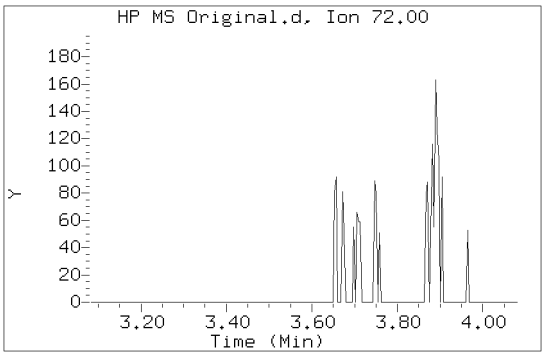
AFTER

MASS
43
AREA
1011
HEIGHT
580
19-Aug-2022
10:59
linh
pham



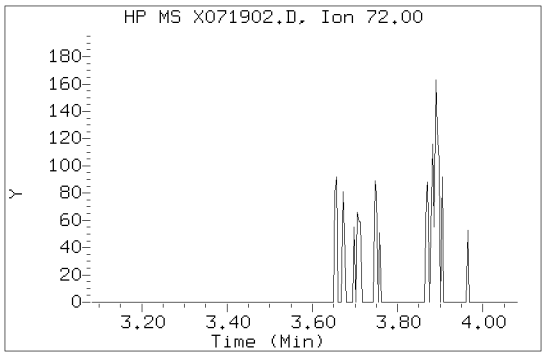
BEFORE

MASS
131
AREA
261
HEIGHT
237
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

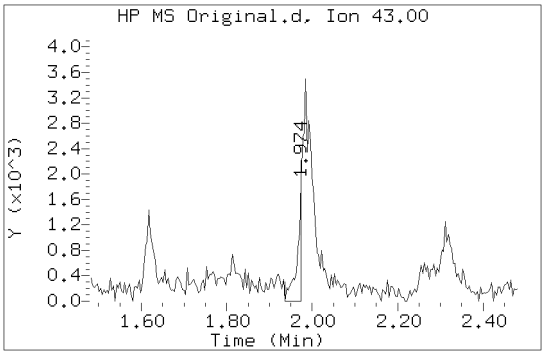


Acetone (67-64-1)

Reason Code:

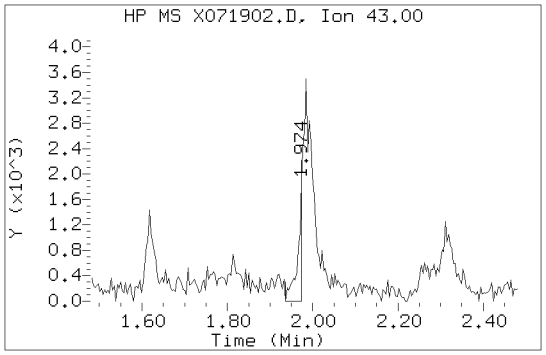
BEFORE

MASS
62
AREA
2270
HEIGHT
1999
25-Jul-2022
09:00
linh
pham



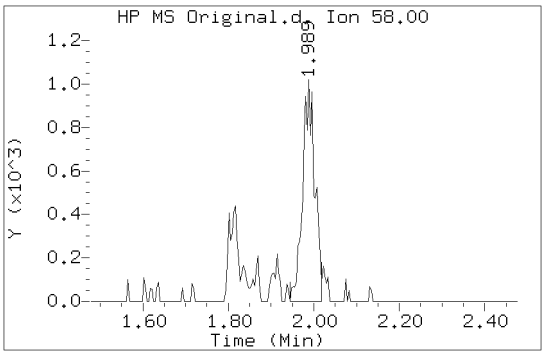
AFTER

MASS
43
AREA
1327
HEIGHT
1915
19-Aug-2022
10:59
linh
pham



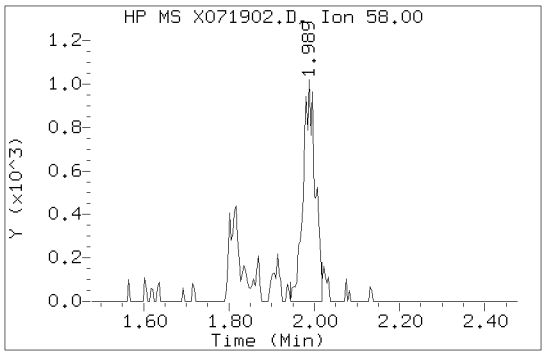
BEFORE

MASS
64
AREA
1357
HEIGHT
893
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
2032
HEIGHT
1020
19-Aug-2022
10:59
linh
pham



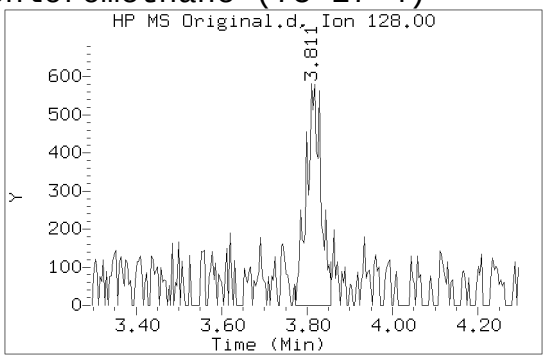
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Bromodichloromethane (75-27-4)

Reason Code:

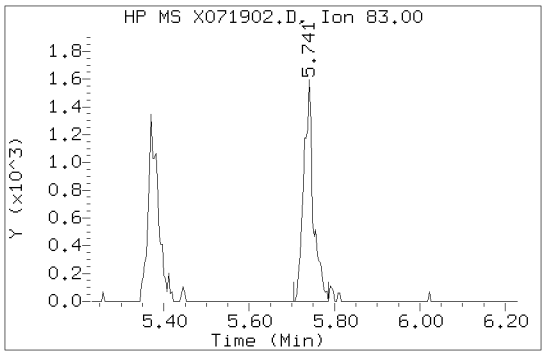
BEFORE

MASS
112
AREA
5699
HEIGHT
4160
25-Jul-2022
09:00
linh
pham



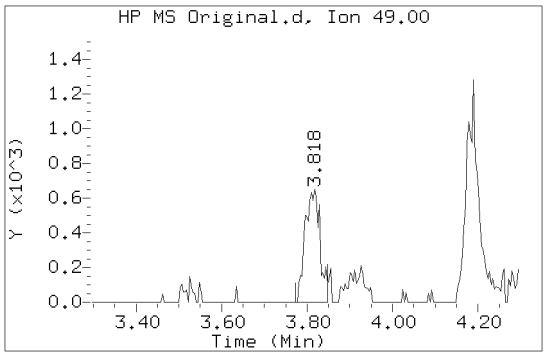
AFTER

MASS
83
AREA
2545
HEIGHT
1596
19-Aug-2022
10:59
linh
pham



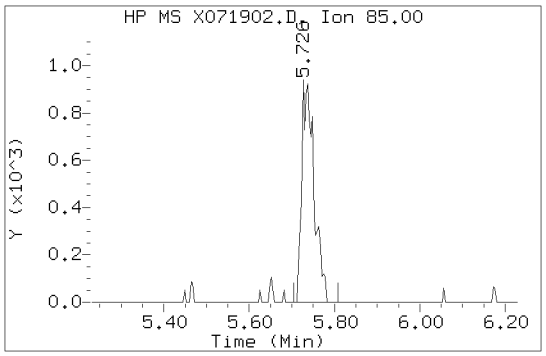
BEFORE

MASS
77
AREA
13059
HEIGHT
6542
25-Jul-2022
09:00
linh
pham



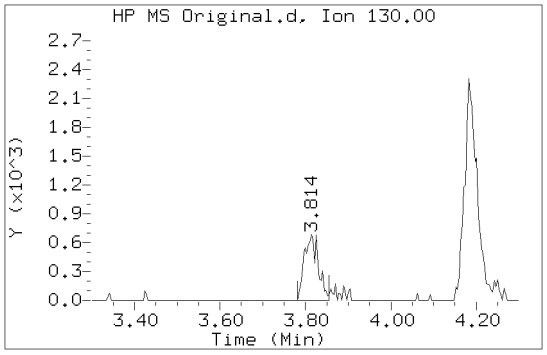
AFTER

MASS
85
AREA
1904
HEIGHT
940
19-Aug-2022
10:59
linh
pham



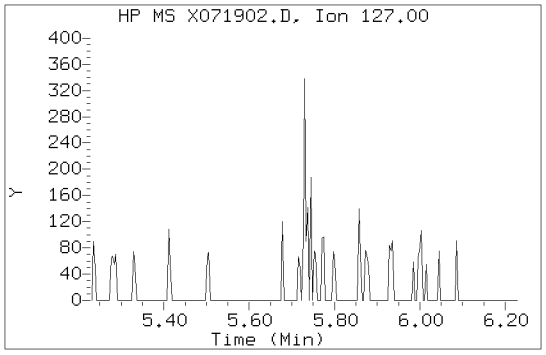
BEFORE

MASS
114
AREA
1994
HEIGHT
1227
25-Jul-2022
09:00
linh
pham



AFTER

MASS
127
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

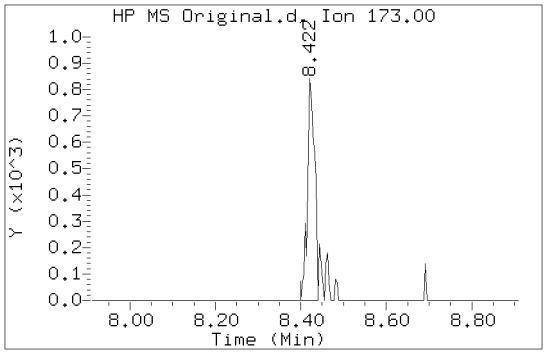


Bromoform (75-25-2)

Reason Code:

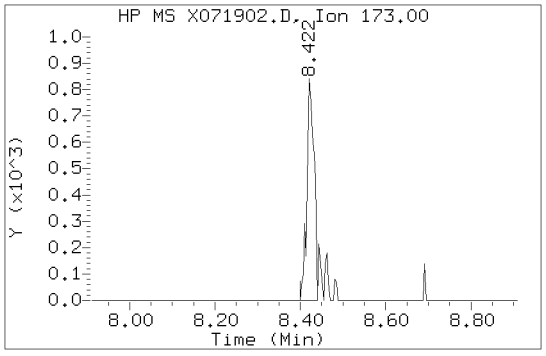
BEFORE

MASS
64
AREA
1480
HEIGHT
1248
25-Jul-2022
09:00
linh
pham



AFTER

MASS
173
AREA
995
HEIGHT
841
19-Aug-2022
10:59
linh
pham



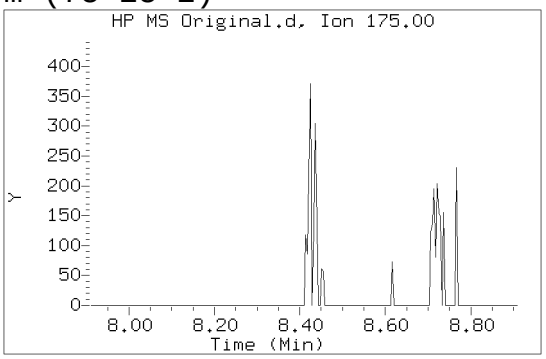
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Bromoform (75-25-2)

Reason Code:

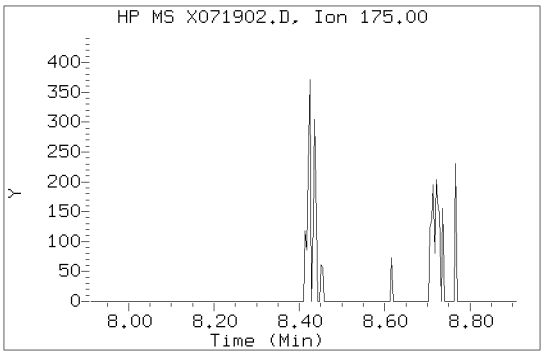
BEFORE

MASS
66
AREA
908
HEIGHT
577
25-Jul-2022
09:00
linh
pham



AFTER

MASS
175
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

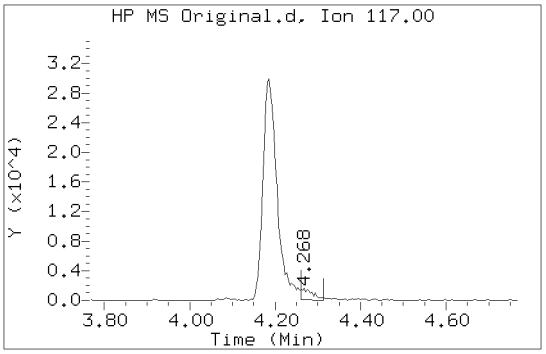


Carbon Tetrachloride (56-23-5)

Reason Code:

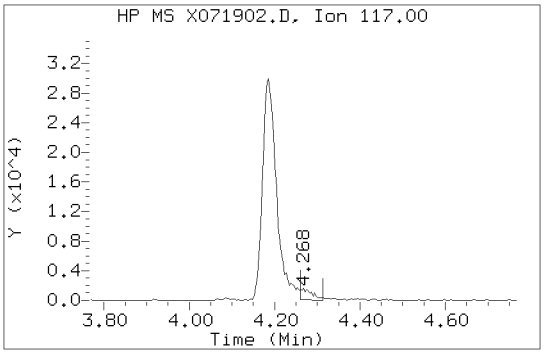
BEFORE

MASS
96
AREA
2176
HEIGHT
1100
25-Jul-2022
09:00
linh
pham



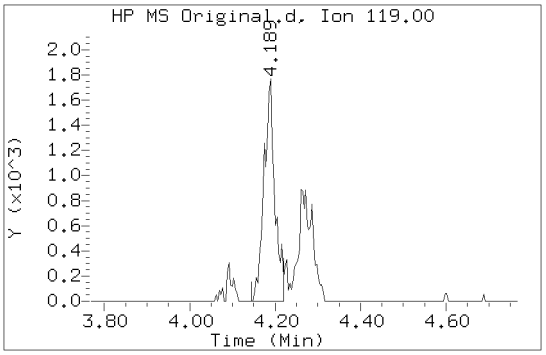
AFTER

MASS
117
AREA
2941
HEIGHT
1575
19-Aug-2022
10:59
linh
pham



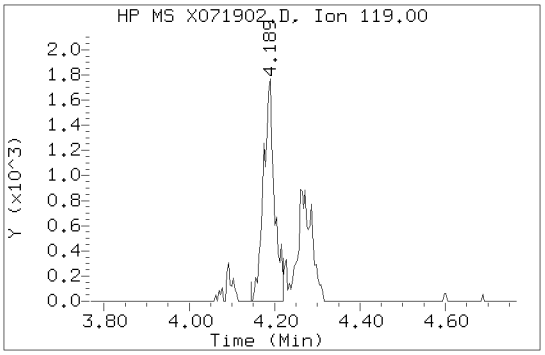
BEFORE

MASS
61
AREA
2985
HEIGHT
1241
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
3120
HEIGHT
1768
19-Aug-2022
10:59
linh
pham

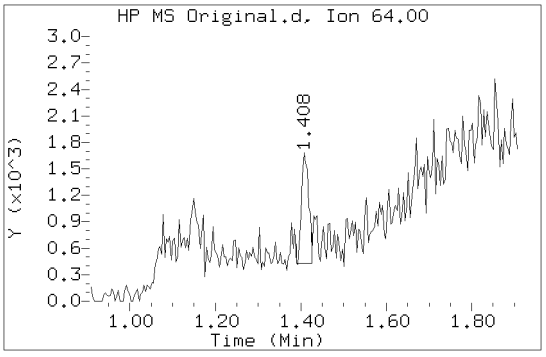


Chloroethane (75-00-3)

Reason Code:

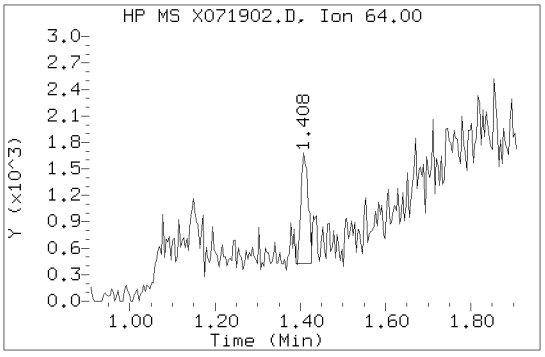
BEFORE

MASS
117
AREA
1125944
HEIGHT
749184
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
1480
HEIGHT
1248
19-Aug-2022
10:59
linh
pham



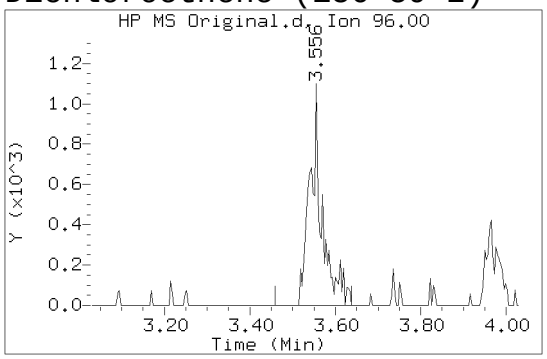
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

cis-1,2-Dichloroethene (156-59-2)

Reason Code:

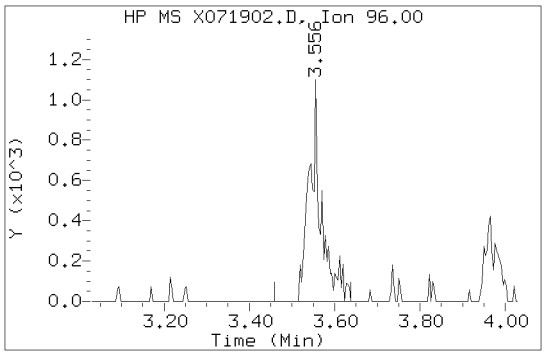
BEFORE

MASS
106
AREA
2551
HEIGHT
1284
25-Jul-2022
09:00
linh
pham



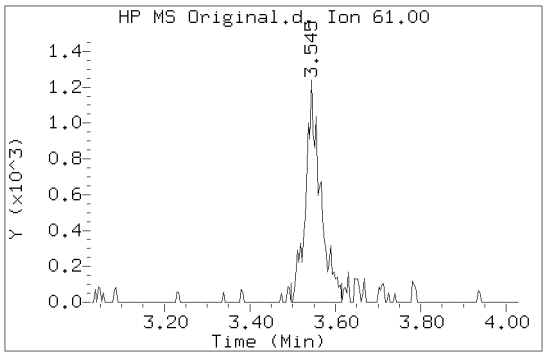
AFTER

MASS
96
AREA
2176
HEIGHT
1100
19-Aug-2022
10:59
linh
pham



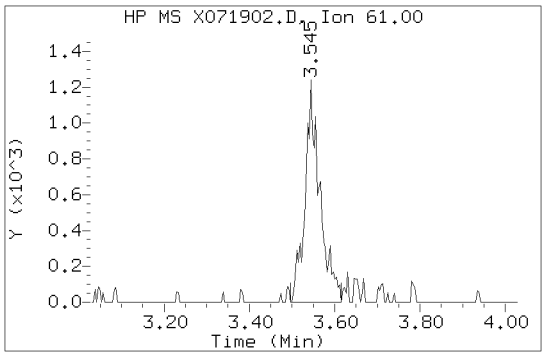
BEFORE

MASS
91
AREA
8845
HEIGHT
4301
25-Jul-2022
09:00
linh
pham



AFTER

MASS
61
AREA
2985
HEIGHT
1241
19-Aug-2022
10:59
linh
pham

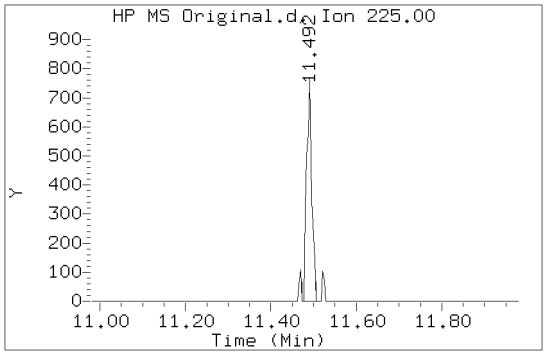


Hexachlorobutadiene (87-68-3)

Reason Code:

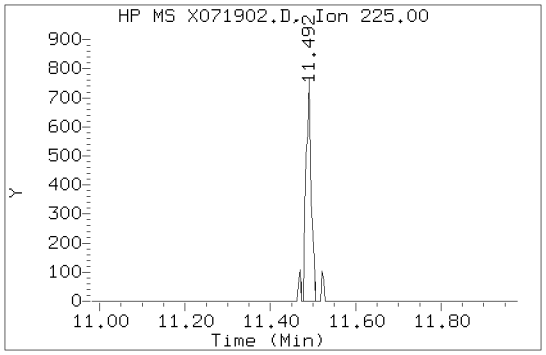
BEFORE

MASS
91
AREA
8239
HEIGHT
3499
25-Jul-2022
09:00
linh
pham



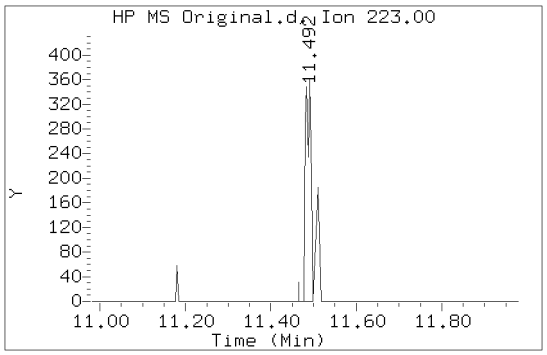
AFTER

MASS
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AREA
656
HEIGHT
765
19-Aug-2022
10:59
linh
pham



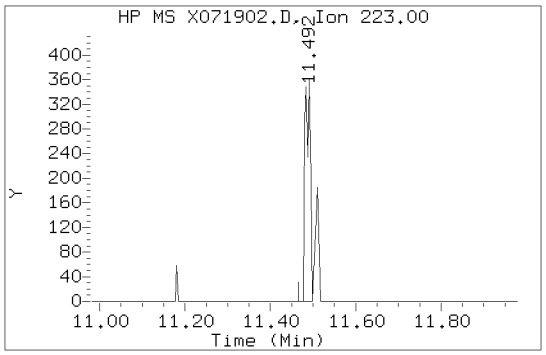
BEFORE

MASS
120
AREA
2347
HEIGHT
1333
25-Jul-2022
09:00
linh
pham



AFTER

MASS
223
AREA
322
HEIGHT
360
19-Aug-2022
10:59
linh
pham



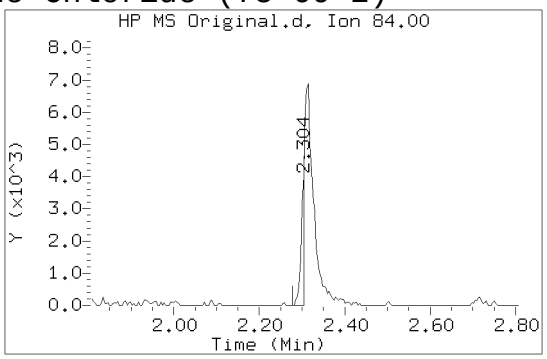
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Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Methylene Chloride (75-09-2)

Reason Code:

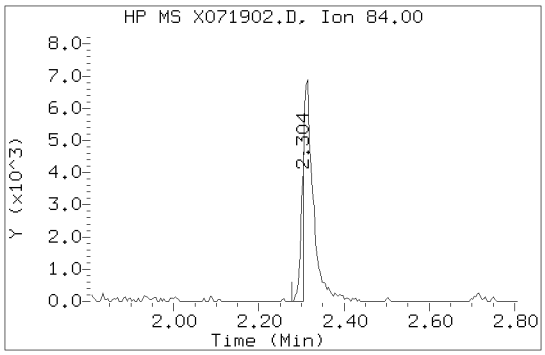
BEFORE

MASS
91
AREA
5589
HEIGHT
2011
25-Jul-2022
09:00
linh
pham



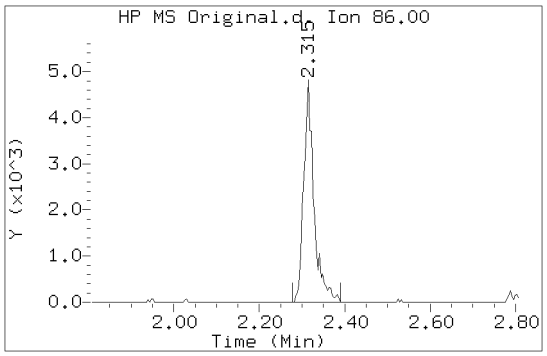
AFTER

MASS
84
AREA
2179
HEIGHT
4047
19-Aug-2022
10:59
linh
pham



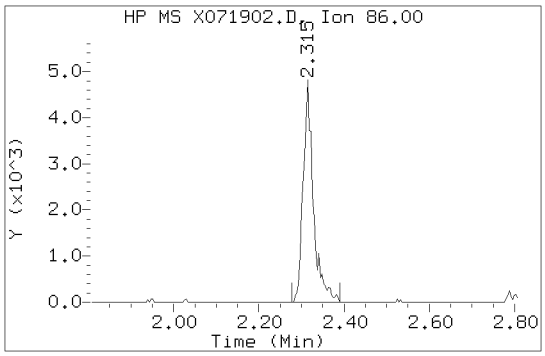
BEFORE

MASS
126
AREA
1833
HEIGHT
712
25-Jul-2022
09:00
linh
pham



AFTER

MASS
86
AREA
8177
HEIGHT
4819
19-Aug-2022
10:59
linh
pham

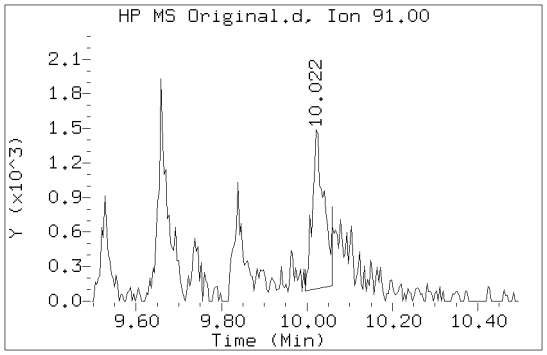


n-Butylbenzene (104-51-8)

Reason Code:

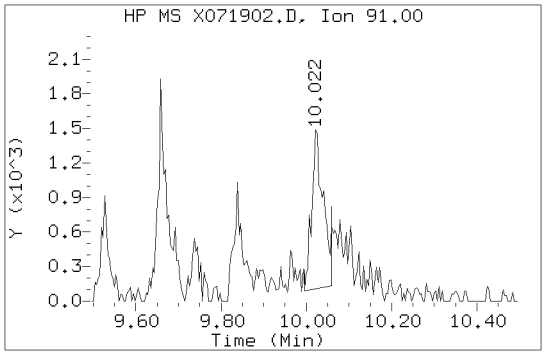
BEFORE

MASS
119
AREA
4918
HEIGHT
3300
25-Jul-2022
09:00
linh
pham



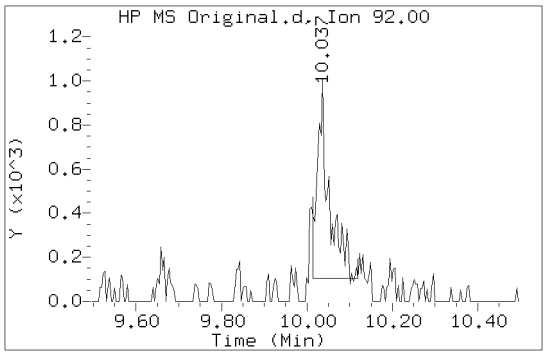
AFTER

MASS
91
AREA
2636
HEIGHT
1379
19-Aug-2022
10:59
linh
pham



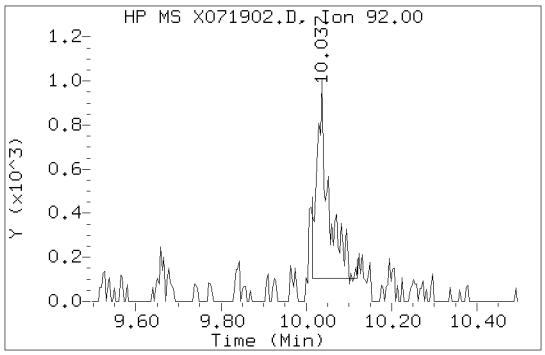
BEFORE

MASS
91
AREA
3272
HEIGHT
2266
25-Jul-2022
09:00
linh
pham



AFTER

MASS
92
AREA
1706
HEIGHT
901
19-Aug-2022
10:59
linh
pham

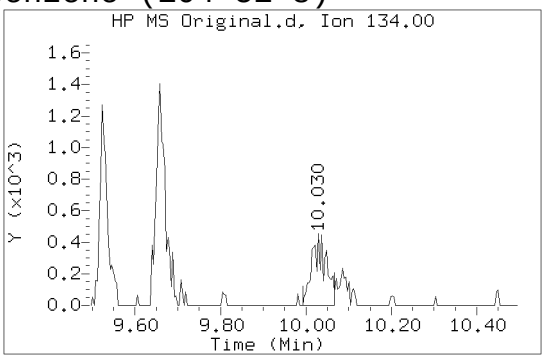


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

n-Butylbenzene (104-51-8)

BEFORE

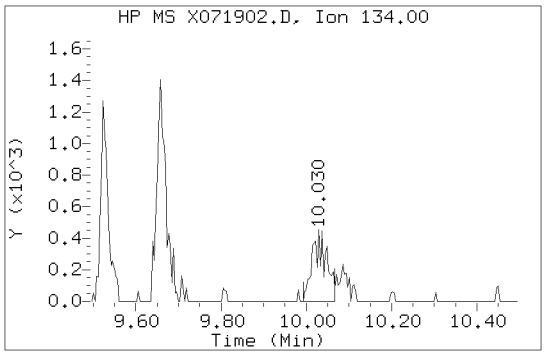
MASS
134
AREA
1291
HEIGHT
839
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
1039
HEIGHT
456
19-Aug-2022
10:59
linh
pham

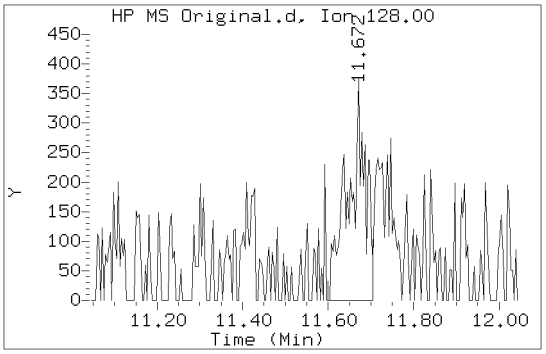
Reason Code:



Naphthalene (91-20-3)

BEFORE

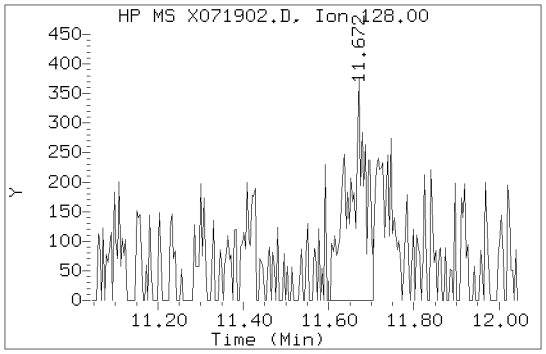
MASS
105
AREA
7167
HEIGHT
4920
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
1028
HEIGHT
375
19-Aug-2022
10:59
linh
pham

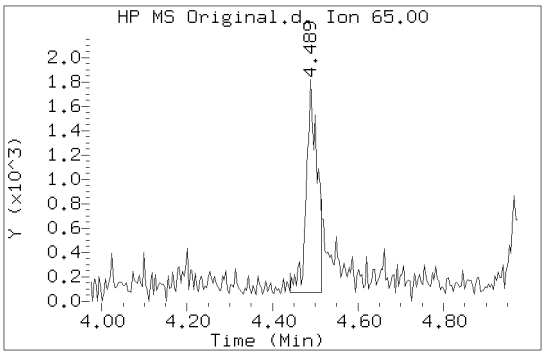
Reason Code:



1,2-Dichloroethane-d4 (17060-07-0)

BEFORE

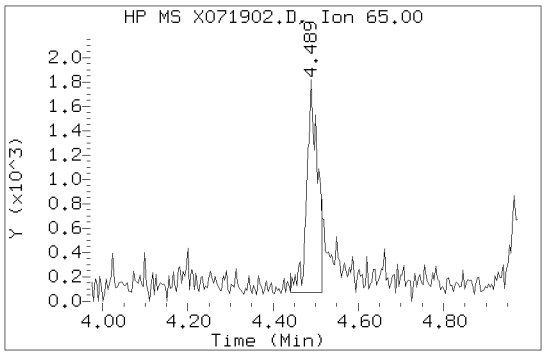
MASS
113
AREA
2821
HEIGHT
1201
25-Jul-2022
09:00
linh
pham



AFTER

MASS
65
AREA
3098
HEIGHT
1743
19-Aug-2022
10:59
linh
pham

Reason Code:



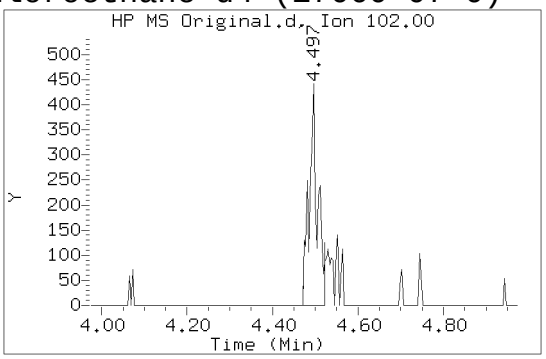
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Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

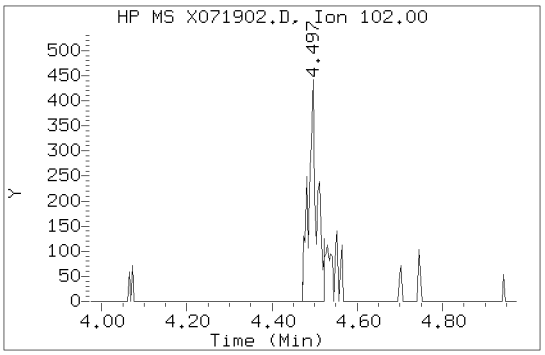
BEFORE

MASS
111
AREA
2894
HEIGHT
1282
25-Jul-2022
09:00
linh
pham



AFTER

MASS
102
AREA
606
HEIGHT
442
19-Aug-2022
10:59
linh
pham

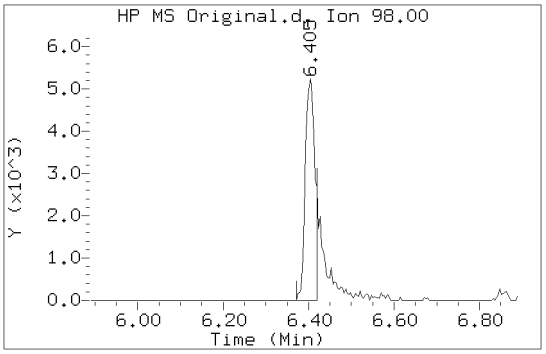


Toluene-d8 (2037-26-5)

Reason Code:

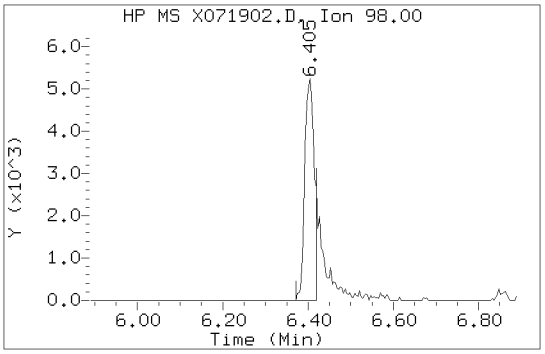
BEFORE

MASS
65
AREA
3098
HEIGHT
1743
25-Jul-2022
09:00
linh
pham



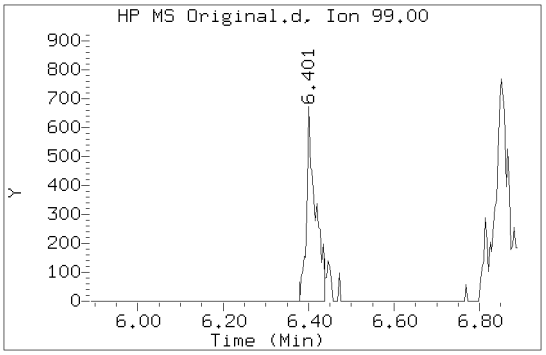
AFTER

MASS
98
AREA
8187
HEIGHT
5242
19-Aug-2022
10:59
linh
pham



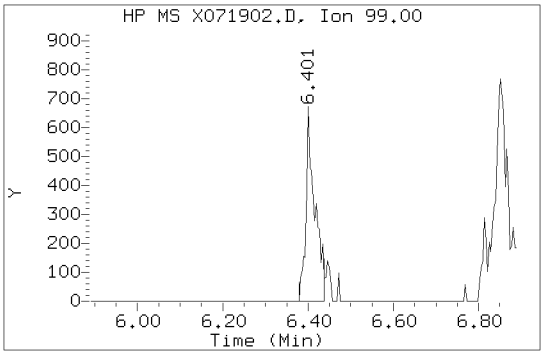
BEFORE

MASS
102
AREA
606
HEIGHT
442
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
978
HEIGHT
672
19-Aug-2022
10:59
linh
pham

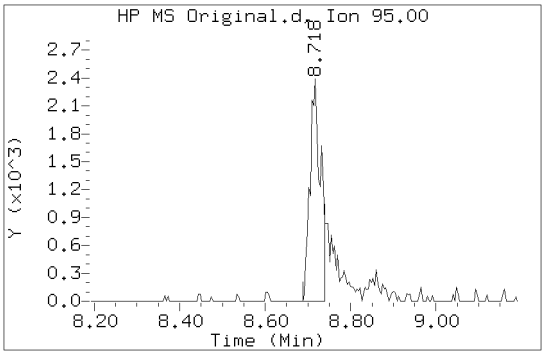


4-Bromofluorobenzene (460-00-4)

Reason Code:

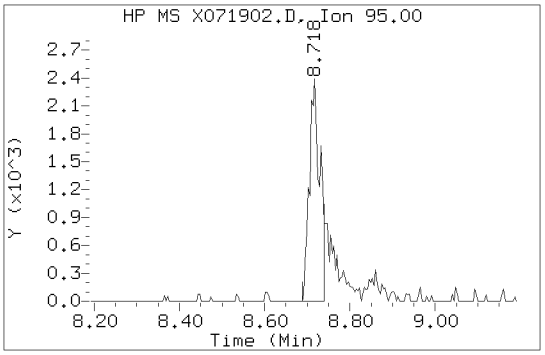
BEFORE

MASS
95
AREA
4127
HEIGHT
2390
25-Jul-2022
09:00
linh
pham



AFTER

MASS
95
AREA
4127
HEIGHT
2390
19-Aug-2022
10:59
linh
pham



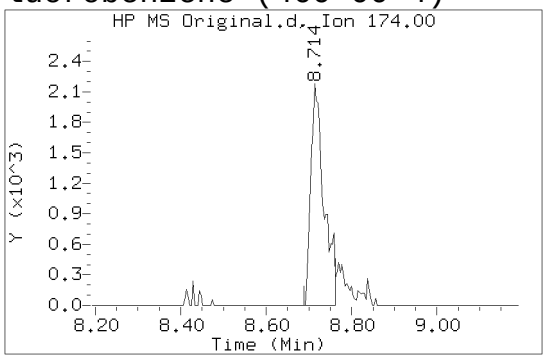
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Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

4-Bromofluorobenzene (460-00-4)

Reason Code:

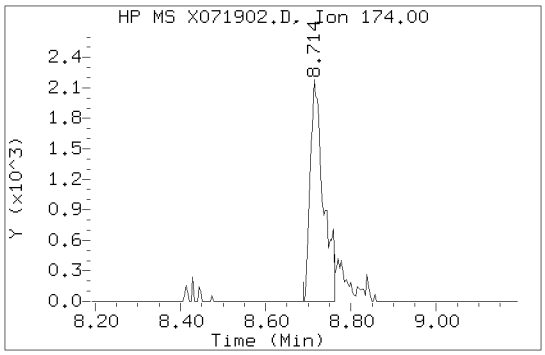
BEFORE

MASS
174
AREA
4648
HEIGHT
2180
25-Jul-2022
09:00
linh
pham



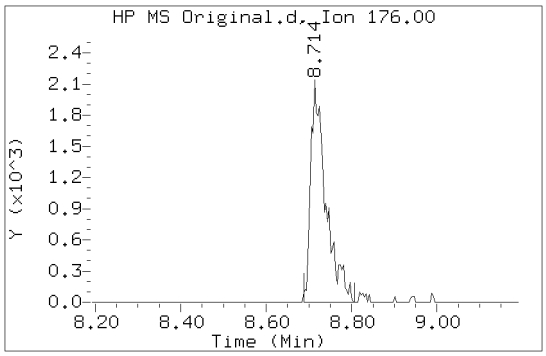
AFTER

MASS
174
AREA
4648
HEIGHT
2180
19-Aug-2022
10:59
linh
pham



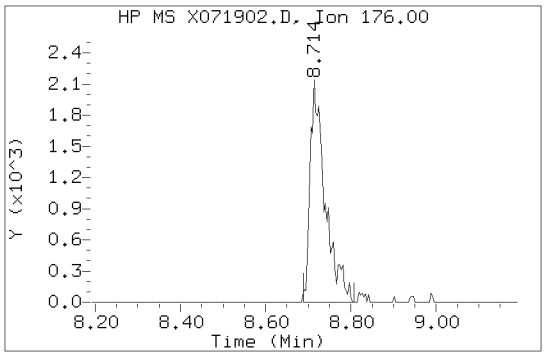
BEFORE

MASS
176
AREA
5254
HEIGHT
2140
25-Jul-2022
09:00
linh
pham



AFTER

MASS
176
AREA
5254
HEIGHT
2140
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 19-JUL-2022 12:08
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 11:27 Cal File: X071902.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	739240	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1081359	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	971157	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	441620	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	4991	0.50000	(aM)
$ 35 1,2-Dichloroethane-d4	65	4.492	4.492	(1.073)	5362	0.50000	0.37(aM)
$ 48 Toluene-d8	98	6.400	6.400	(0.834)	14148	0.50000	0.58(aM)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	6586	0.50000	(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	3465	0.50000	0.50(aM)
31 1,1,1-Trichloroethane	97	4.099	4.099	(0.979)	5496	0.50000	0.52(a)
68 1,1,2,2-Tetrachloroethane	83	8.848	8.848	(0.915)	3451	0.50000	0.55(aM)
53 1,1,2-Trichloroethane	83	6.850	6.850	(0.893)	2609	0.50000	0.52(aM)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	5606	0.50000	0.49(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	3325	0.50000	0.53(aM)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	4832	0.50000	0.55(a)
93 1,2,3-Trichlorobenzene	180	11.791	11.791	(1.220)	1275	0.50000	0.55(aM)
71 1,2,3-Trichloropropane	75	8.878	8.878	(0.919)	2596	0.50000	0.54(aM)
90 1,2,4-Trichlorobenzene	180	11.401	11.401	(1.180)	2030	0.50000	0.50(aM)
79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	11226	0.50000	0.52(aM)
89 1,2-Dibromo-3-Chloropropane	155	10.726	10.726	(1.110)	270	0.50000	0.99(aM)

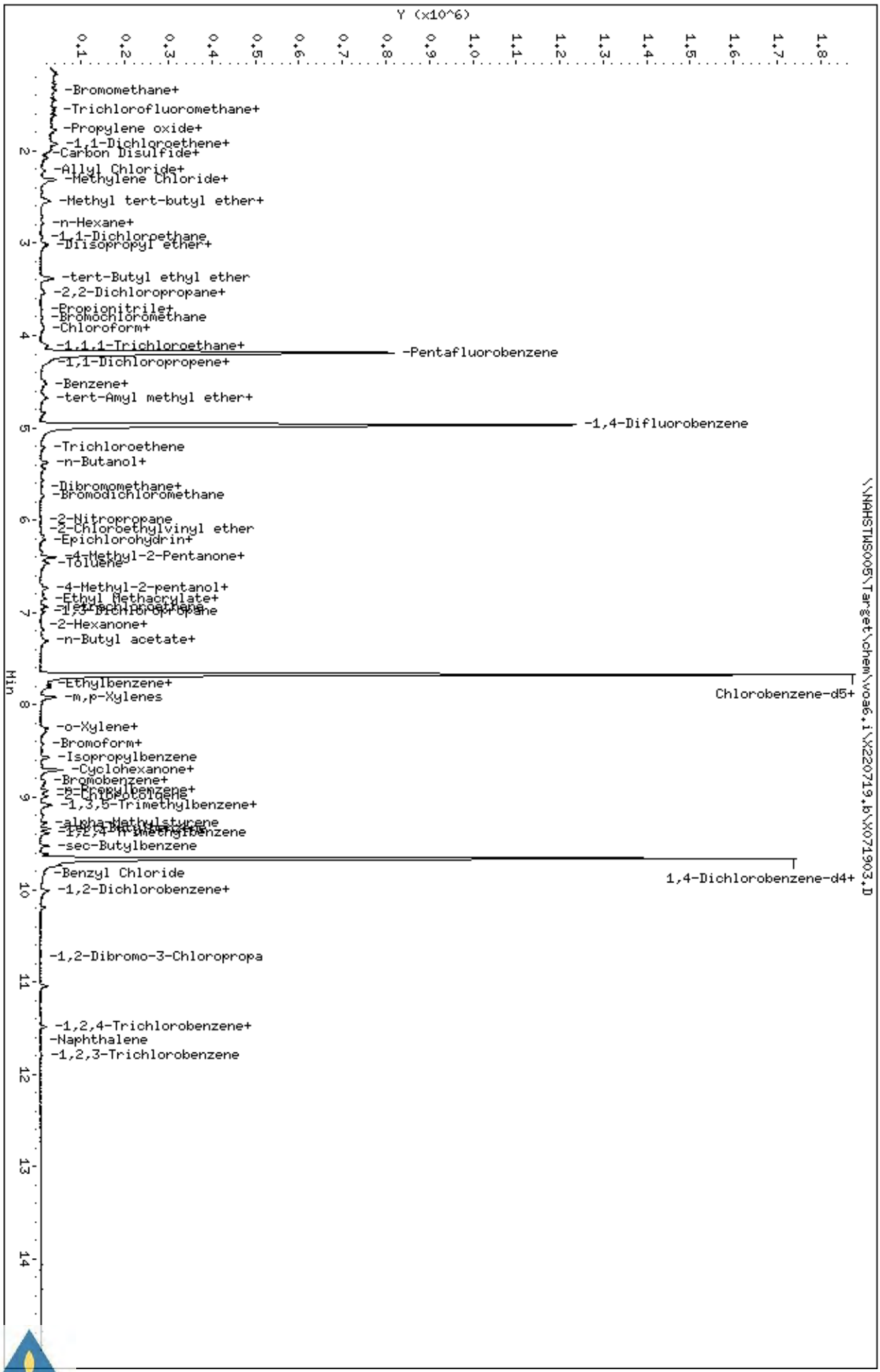
57 1,2-Dibromoethane	107	7.278	7.278 (0.949)	3299	0.50000	0.52(aM)
88 1,2-Dichlorobenzene	146	10.010	10.010 (1.036)	5548	0.50000	0.50(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.567	4.567	(0.919)	4888	0.50000	0.51(aM)
42	1,2-Dichloropropane	63	5.456	5.456	(1.098)	3868	0.50000	0.58(aM)
75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	11467	0.50000	0.53(a)
83	1,3-Dichlorobenzene	146	9.617	9.617	(0.995)	6308	0.50000	0.51(a)
54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	5230	0.50000	0.51(aM)
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	7241	0.50000	0.55(a)
26	2,2-Dichloropropane	77	3.525	3.525	(0.842)	5133	0.50000	0.26(a)
24	2-Butanone	43	3.694	3.694	(0.883)	1760	1.00000	0.94(aM)
76	2-Chlorotoluene	91	8.987	8.987	(0.930)	10810	0.50000	0.57(aM)
52	2-Hexanone	43	7.131	7.131	(0.930)	3055	1.00000	1.00(aM)
77	4-Chlorotoluene	91	9.099	9.099	(0.941)	11731	0.50000	0.55(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	11018	0.50000	0.51(aM)
45	4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	4464	1.00000	0.94(a)
10	Acetone	43	1.977	1.977	(0.472)	1762	1.00000	(aM)
37	Benzene	78	4.534	4.534	(0.912)	13584	0.50000	0.53(a)
74	Bromobenzene	156	8.826	8.826	(0.913)	3862	0.50000	0.51(a)
29	Bromochloromethane	128	3.810	3.810	(0.910)	2258	0.50000	0.54(a)
39	Bromodichloromethane	83	5.733	5.733	(1.154)	4485	0.50000	0.49(aM)
66	Bromoform	173	8.421	8.421	(1.098)	1755	0.50000	1.59(Ta)
6	Bromomethane	94	1.347	1.347	(0.322)	3413	0.50000	(aM)
19	Carbon Disulfide	76	2.078	2.078	(0.497)	16886	1.00000	1.03(a)
34	Carbon Tetrachloride	117	4.260	4.260	(0.857)	5505	0.50000	0.59(aMH)
59	Chlorobenzene	112	7.701	7.701	(1.004)	9208	0.50000	0.50(a)
7	Chloroethane	64	1.411	1.411	(0.337)	2356	0.50000	0.49(aM)
28	Chloroform	83	3.919	3.919	(0.936)	6190	0.50000	0.49(a)
3	Chloromethane	50	1.085	1.085	(0.259)	3959	0.50000	0.63(aM)
27	cis-1,2-Dichloroethene	96	3.551	3.551	(0.849)	3635	0.50000	0.49(a)
46	cis-1,3-Dichloropropene	75	6.172	6.172	(1.242)	5379	0.50000	0.47(aM)
55	Dibromochloromethane	129	7.191	7.191	(0.937)	3661	0.50000	0.50(aM)
44	Dibromomethane	93	5.564	5.564	(1.120)	2298	0.50000	0.51(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	3857	0.50000	0.37(a)
61	Ethylbenzene	106	7.810	7.810	(1.018)	4672	0.50000	0.50(a)
91	Hexachlorobutadiene	225	11.487	11.487	(1.188)	2233	0.50000	0.60(aM)
67	Isopropylbenzene	105	8.567	8.567	(1.117)	13970	0.50000	0.49(aM)
62	m,p-Xylenes	106	7.919	7.919	(1.032)	10839	1.00000	0.93(a)
17	Methylene Chloride	84	2.311	2.311	(0.552)	4801	0.50000	(aM)
87	n-Butylbenzene	91	10.018	10.018	(1.036)	9255	0.50000	0.51(aM)
73	n-Propylbenzene	91	8.927	8.927	(0.924)	14364	0.50000	0.49(a)
92	Naphthalene	128	11.637	11.637	(1.204)	2252	0.50000	0.50(aM)
63	o-Xylene	106	8.256	8.256	(1.076)	5758	0.50000	0.51(a)
81	sec-Butylbenzene	105	9.527	9.527	(0.986)	13047	0.50000	0.52(a)
64	Styrene	104	8.293	8.293	(1.081)	8853	0.50000	0.47(aM)
78	tert-Butylbenzene	119	9.343	9.343	(0.967)	9259	0.50000	0.50(a)
56	Tetrachloroethene	164	6.940	6.940	(0.905)	3226	0.50000	0.51(aM)
50	Toluene	91	6.464	6.464	(0.843)	14425	0.50000	0.52(a)
20	trans-1,2-Dichloroethene	96	2.547	2.547	(0.609)	3384	0.50000	0.52(a)
51	trans-1,3-Dichloropropene	75	6.708	6.708	(1.350)	4702	0.50000	0.50(aM)
38	Trichloroethene	130	5.216	5.216	(1.050)	3892	0.50000	0.51(a)
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	5874	0.50000	0.50(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	4102	0.50000	0.52(a)

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.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Date : 19-JUL-2022 12:08
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

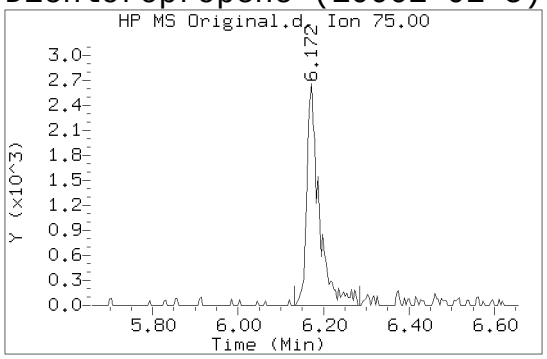
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

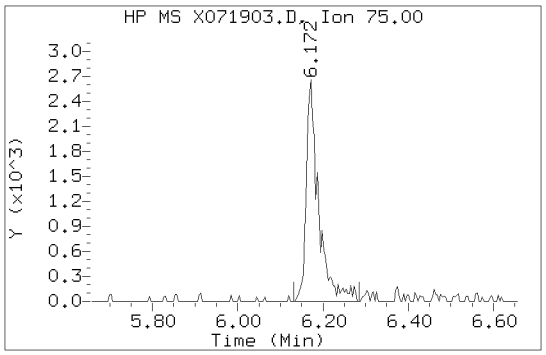
BEFORE

MASS
128
AREA
2258
HEIGHT
1011
25-Jul-2022
09:00
linh
pham



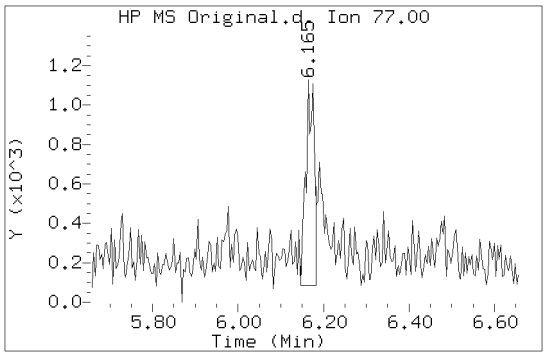
AFTER

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AREA
5379
HEIGHT
2657
19-Aug-2022
10:59
linh
pham



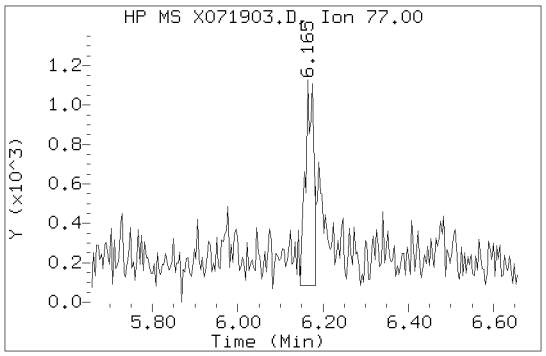
BEFORE

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AREA
2606
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1091
25-Jul-2022
09:00
linh
pham



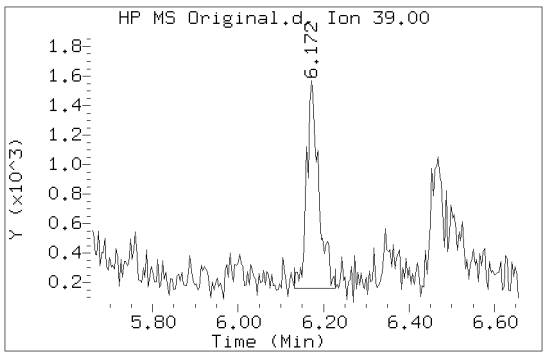
AFTER

MASS
77
AREA
1442
HEIGHT
1044
19-Aug-2022
10:59
linh
pham



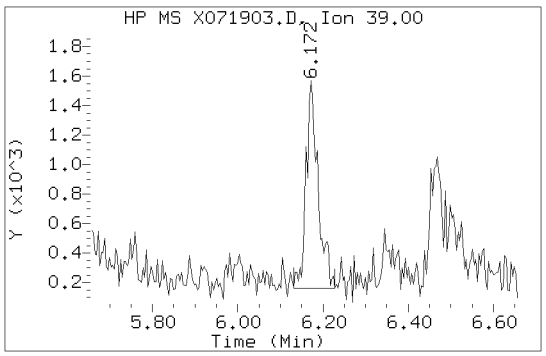
BEFORE

MASS
130
AREA
2598
HEIGHT
1041
25-Jul-2022
09:00
linh
pham



AFTER

MASS
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AREA
2778
HEIGHT
1408
19-Aug-2022
10:59
linh
pham

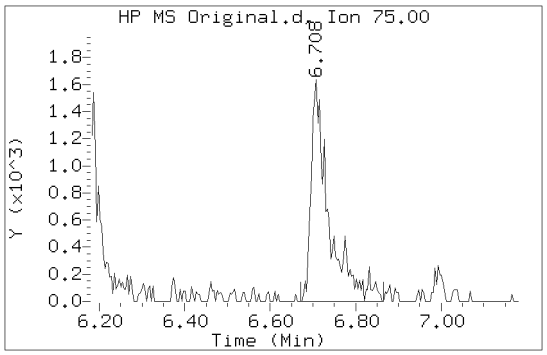


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

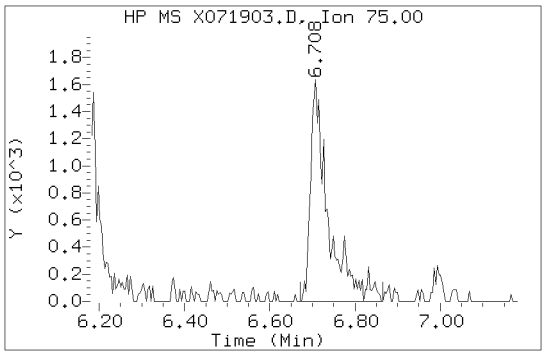
BEFORE

MASS
43
AREA
1760
HEIGHT
747
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
4702
HEIGHT
1636
19-Aug-2022
10:59
linh
pham



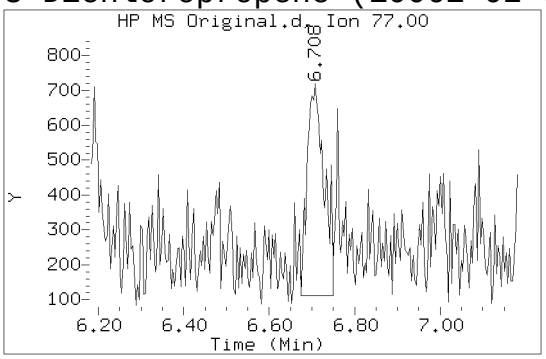
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

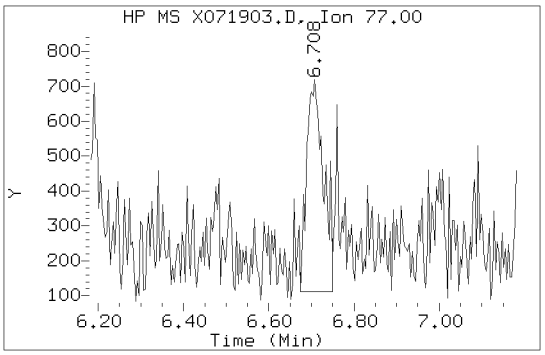
BEFORE

MASS
72
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
1672
HEIGHT
607
19-Aug-2022
10:59
linh
pham

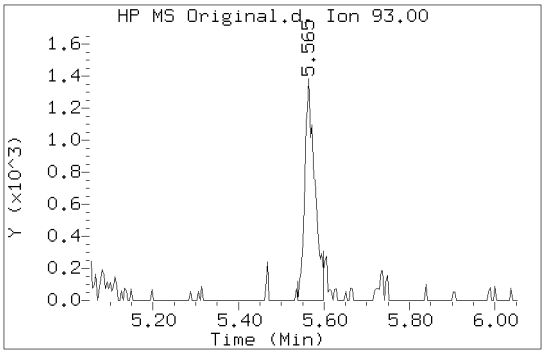


1,2-Dibromoethane (106-93-4)

Reason Code:

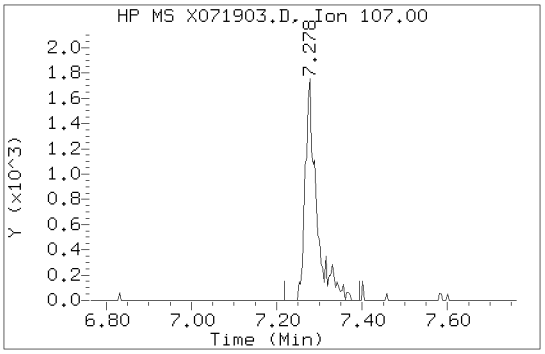
BEFORE

MASS
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AREA
4702
HEIGHT
1636
25-Jul-2022
09:00
linh
pham



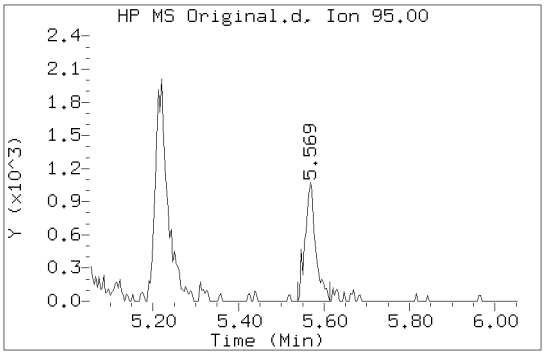
AFTER

MASS
107
AREA
3299
HEIGHT
1755
19-Aug-2022
10:59
linh
pham



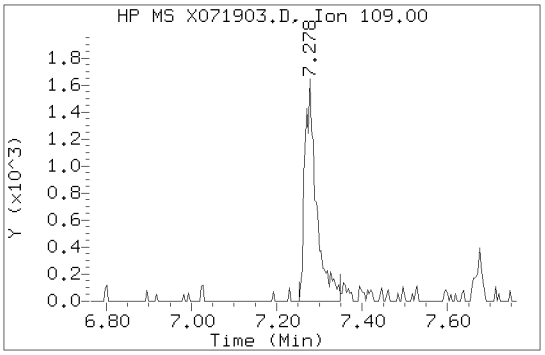
BEFORE

MASS
77
AREA
1672
HEIGHT
607
25-Jul-2022
09:00
linh
pham



AFTER

MASS
109
AREA
3147
HEIGHT
1645
19-Aug-2022
10:59
linh
pham

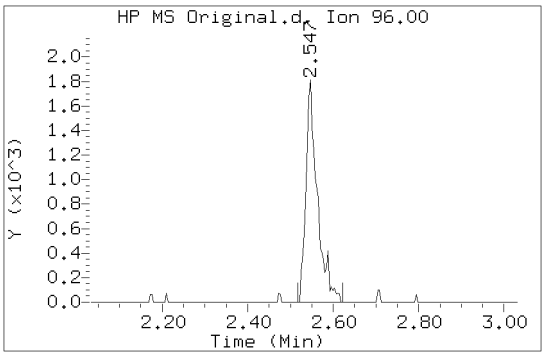


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

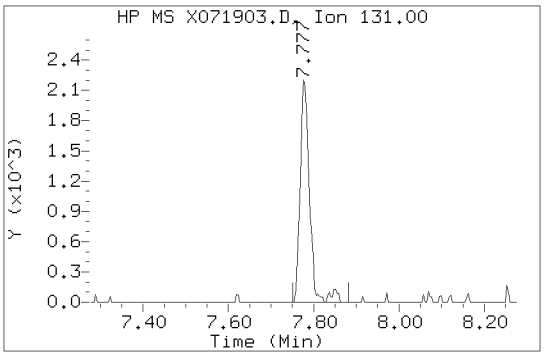
BEFORE

MASS
43
AREA
4464
HEIGHT
1764
25-Jul-2022
09:00
linh
pham



AFTER

MASS
131
AREA
3465
HEIGHT
2203
19-Aug-2022
10:59
linh
pham



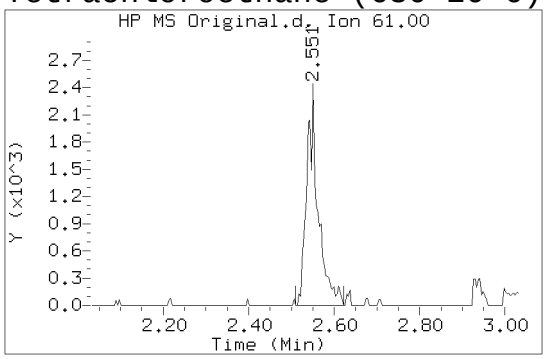
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

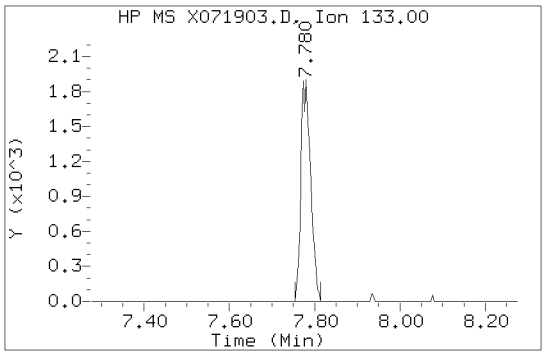
BEFORE

MASS
58
AREA
1503
HEIGHT
1051
25-Jul-2022
09:00
linh
pham



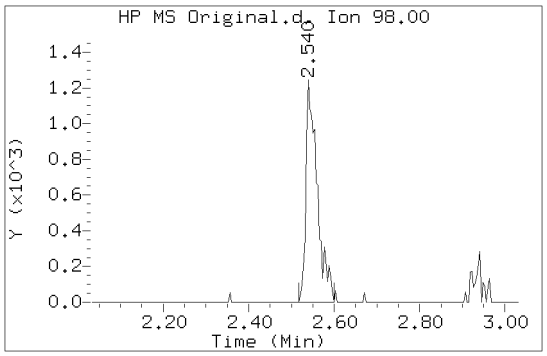
AFTER

MASS
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AREA
3076
HEIGHT
1901
19-Aug-2022
10:59
linh
pham



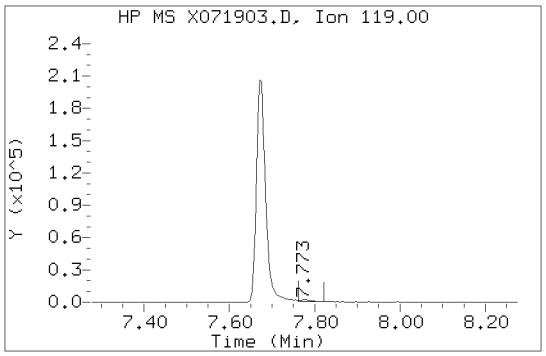
BEFORE

MASS
100
AREA
16954
HEIGHT
9045
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
3743
HEIGHT
2153
19-Aug-2022
10:59
linh
pham

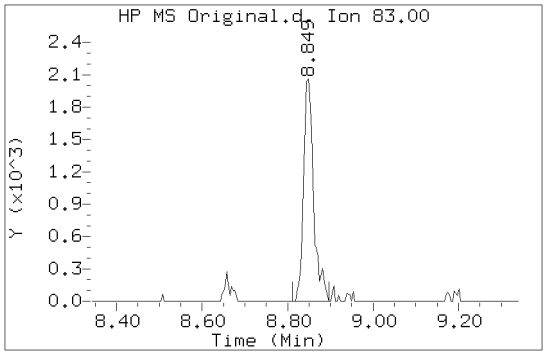


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

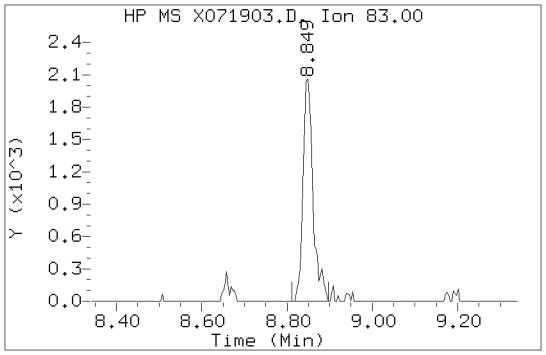
BEFORE

MASS
101
AREA
3138
HEIGHT
2150
25-Jul-2022
09:00
linh
pham



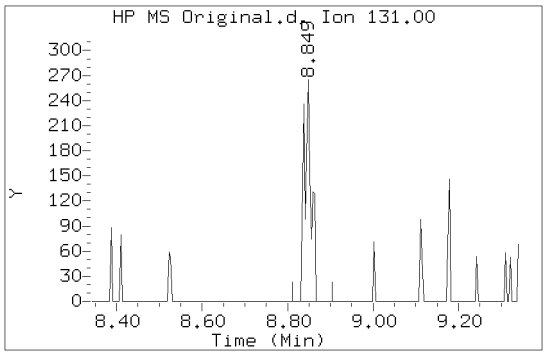
AFTER

MASS
83
AREA
3451
HEIGHT
2061
19-Aug-2022
10:59
linh
pham



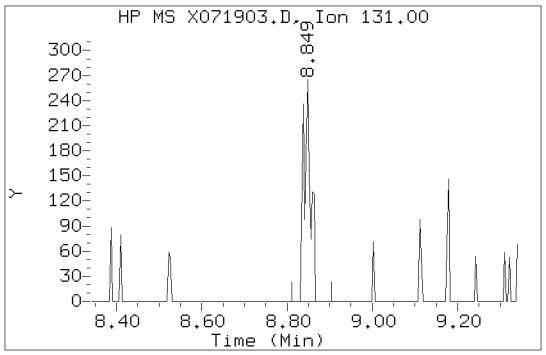
BEFORE

MASS
151
AREA
2944
HEIGHT
1769
25-Jul-2022
09:00
linh
pham



AFTER

MASS
131
AREA
304
HEIGHT
265
19-Aug-2022
10:59
linh
pham



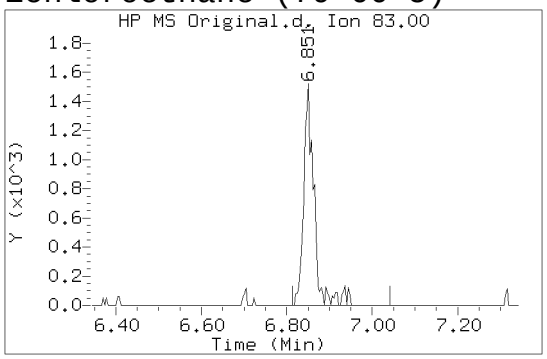
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2-Trichloroethane (79-00-5)

Reason Code:

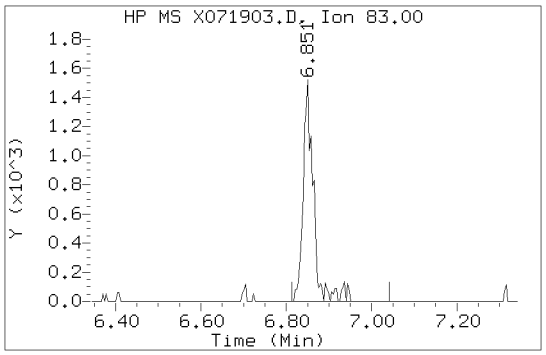
BEFORE

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8853
HEIGHT
3020
25-Jul-2022
09:00
linh
pham



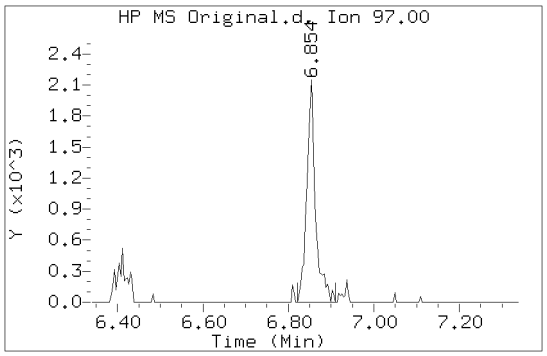
AFTER

MASS
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2609
HEIGHT
1522
19-Aug-2022
10:59
linh
pham



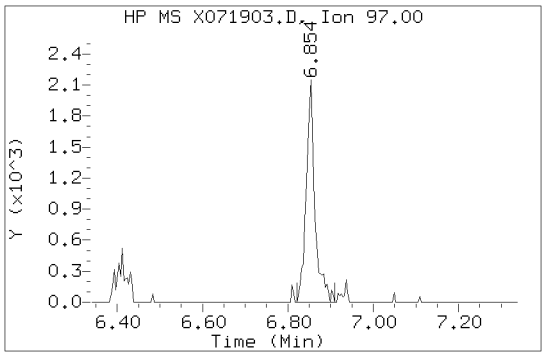
BEFORE

MASS
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AREA
3427
HEIGHT
1842
25-Jul-2022
09:00
linh
pham



AFTER

MASS
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AREA
3118
HEIGHT
2149
19-Aug-2022
10:59
linh
pham

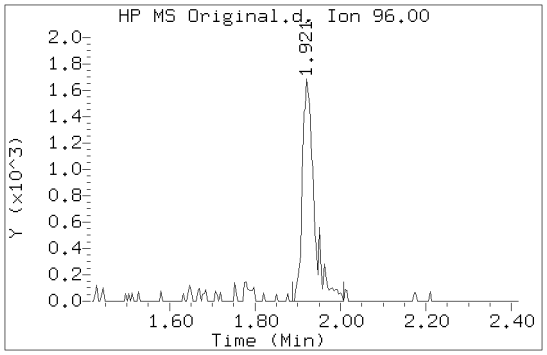


1,1-Dichloroethene (75-35-4)

Reason Code:

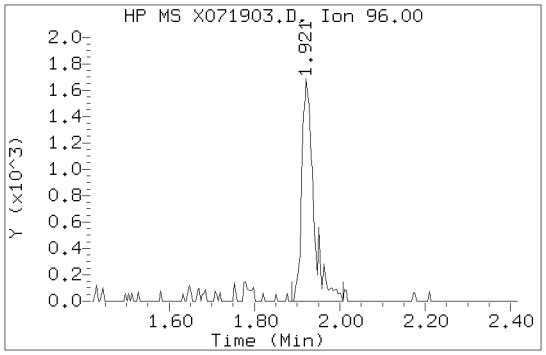
BEFORE

MASS
76
AREA
16886
HEIGHT
10303
25-Jul-2022
09:00
linh
pham



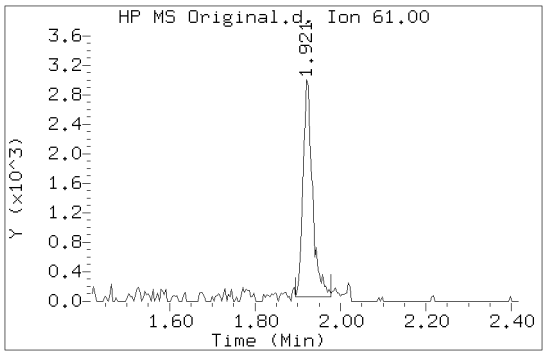
AFTER

MASS
96
AREA
3325
HEIGHT
1685
19-Aug-2022
10:59
linh
pham



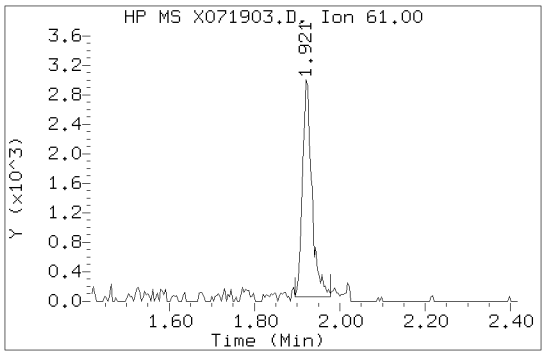
BEFORE

MASS
78
AREA
1233
HEIGHT
871
25-Jul-2022
09:00
linh
pham



AFTER

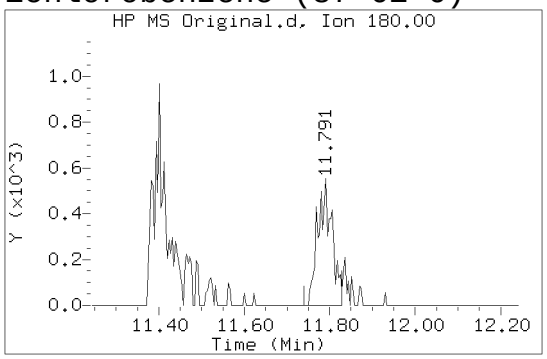
MASS
61
AREA
4630
HEIGHT
2947
19-Aug-2022
10:59
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

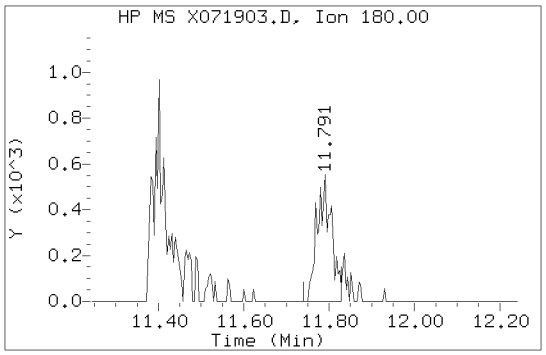
1,2,3-Trichlorobenzene (87-61-6)

BEFORE
MASS
77
AREA
5133
HEIGHT
2125
25-Jul-2022
09:00
linh
pham

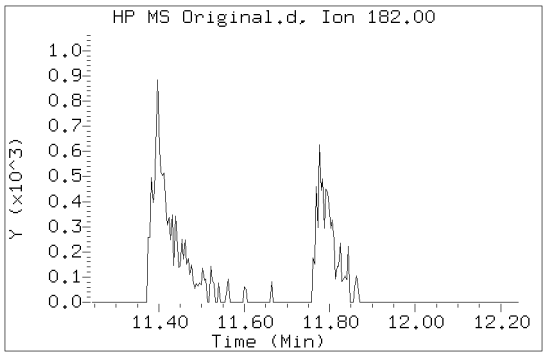


Reason Code:

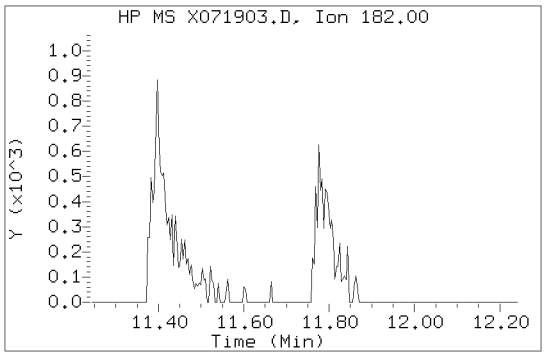
AFTER
MASS
180
AREA
1275
HEIGHT
555
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
97
AREA
728
HEIGHT
479
25-Jul-2022
09:00
linh
pham

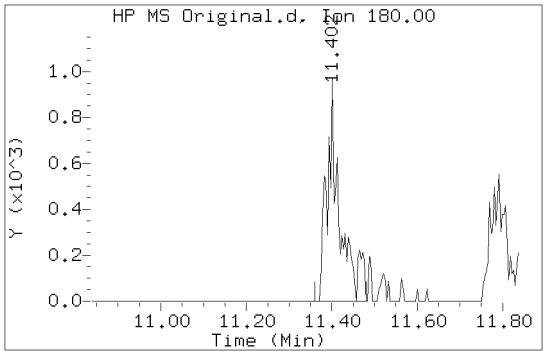


AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



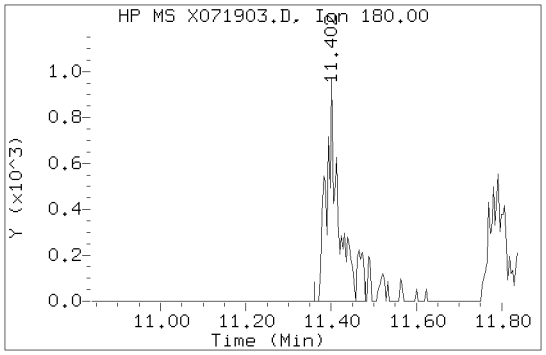
1,2,4-Trichlorobenzene (120-82-1)

BEFORE
MASS
93
AREA
2298
HEIGHT
1384
25-Jul-2022
09:00
linh
pham

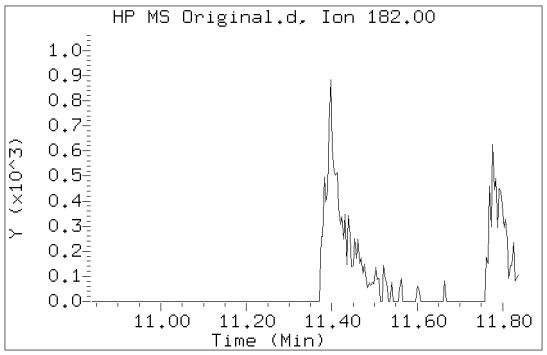


Reason Code:

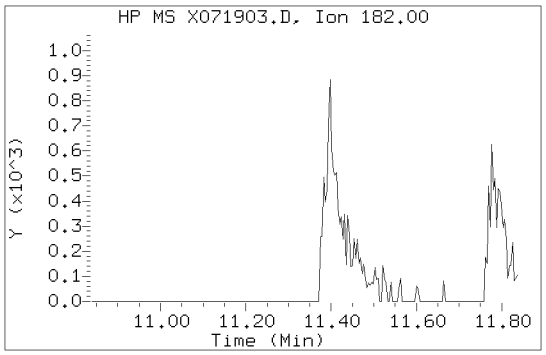
AFTER
MASS
180
AREA
2030
HEIGHT
968
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
95
AREA
1884
HEIGHT
1077
25-Jul-2022
09:00
linh
pham



AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



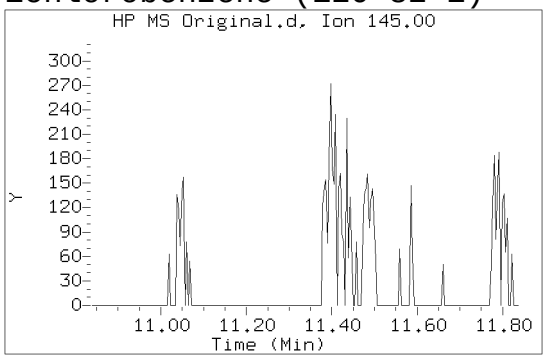
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

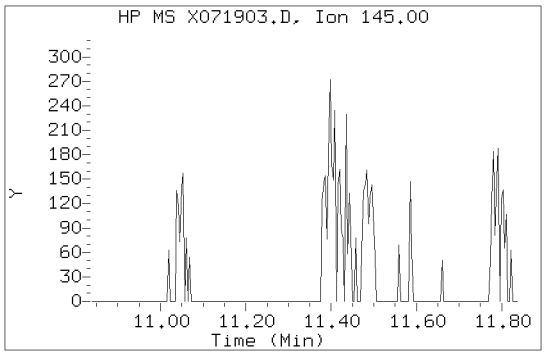
BEFORE

MASS
174
AREA
2657
HEIGHT
1337
25-Jul-2022
09:00
linh
pham



AFTER

MASS
145
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

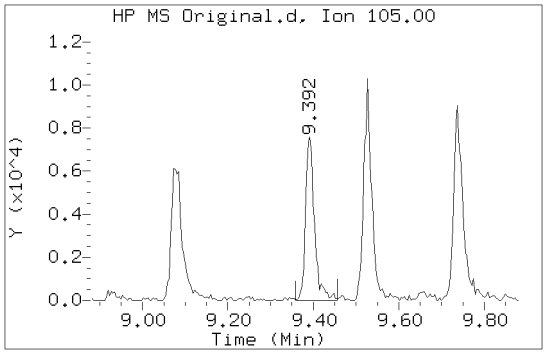


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

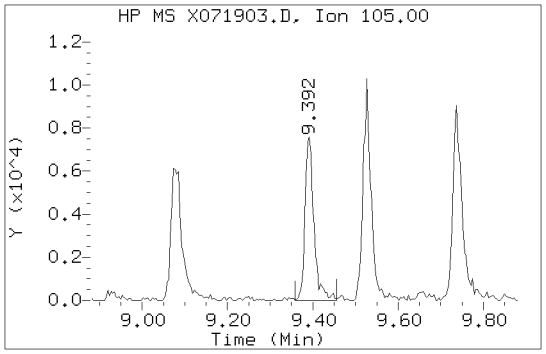
BEFORE

MASS
76
AREA
5230
HEIGHT
3017
25-Jul-2022
09:00
linh
pham



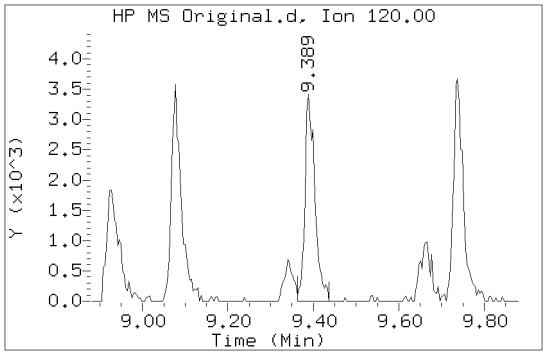
AFTER

MASS
105
AREA
11226
HEIGHT
7596
19-Aug-2022
10:59
linh
pham



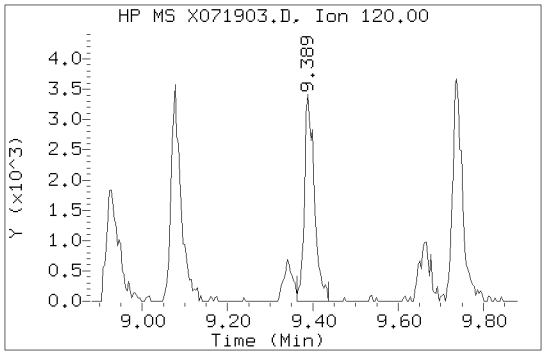
BEFORE

MASS
78
AREA
2030
HEIGHT
1255
25-Jul-2022
09:00
linh
pham



AFTER

MASS
120
AREA
5587
HEIGHT
3418
19-Aug-2022
10:59
linh
pham

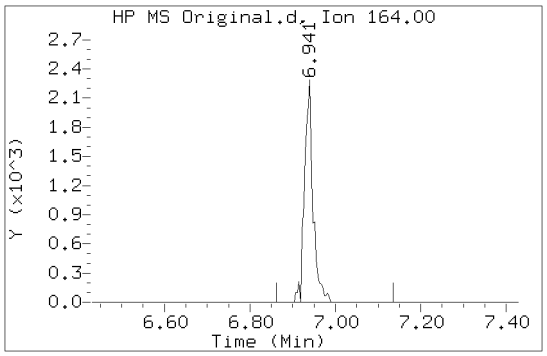


Tetrachloroethene (127-18-4)

Reason Code:

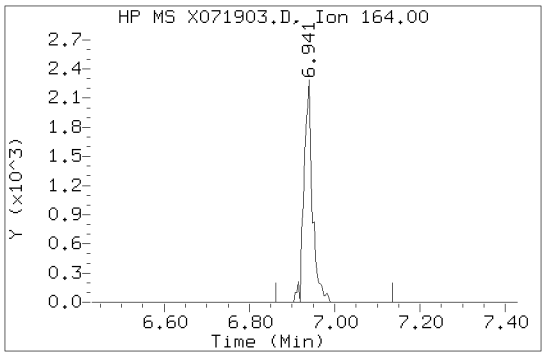
BEFORE

MASS
63
AREA
3868
HEIGHT
1977
25-Jul-2022
09:00
linh
pham



AFTER

MASS
164
AREA
3226
HEIGHT
2287
19-Aug-2022
10:59
linh
pham

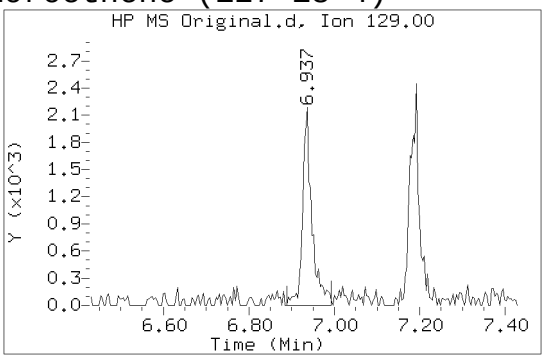


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

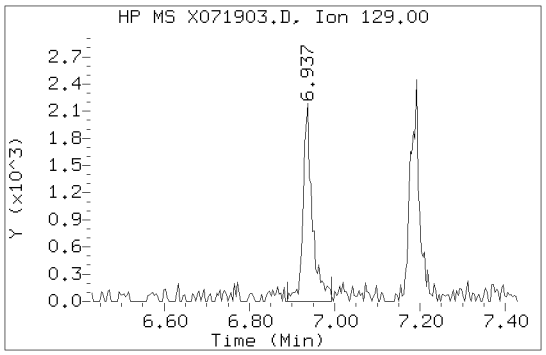
Tetrachloroethene (127-18-4)

Reason Code:

BEFORE
MASS
112
AREA
91
HEIGHT
181
25-Jul-2022
09:00
linh
pham



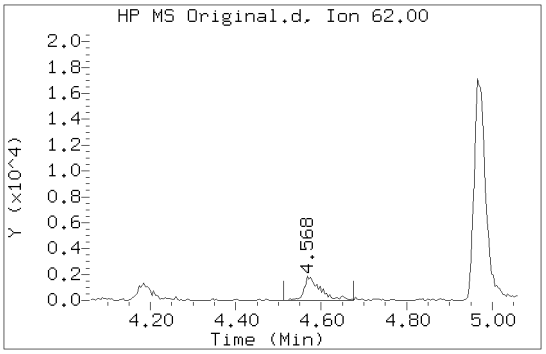
AFTER
MASS
129
AREA
3404
HEIGHT
2186
19-Aug-2022
10:59
linh
pham



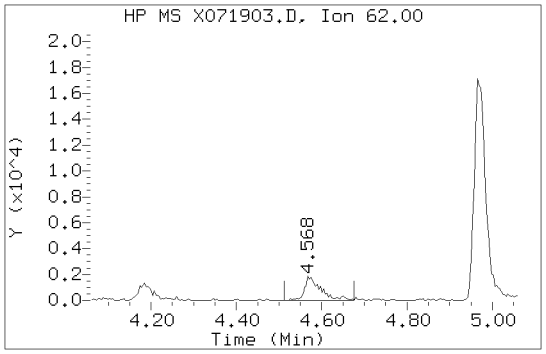
1,2-Dichloroethane (107-06-2)

Reason Code:

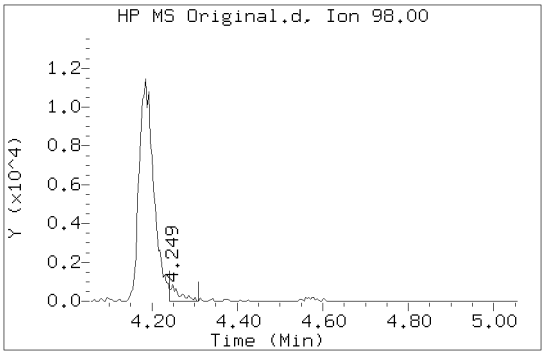
BEFORE
MASS
146
AREA
5548
HEIGHT
3293
25-Jul-2022
09:00
linh
pham



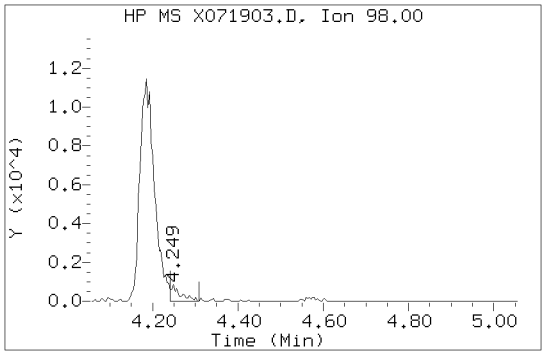
AFTER
MASS
62
AREA
4888
HEIGHT
1898
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
111
AREA
2270
HEIGHT
1209
25-Jul-2022
09:00
linh
pham



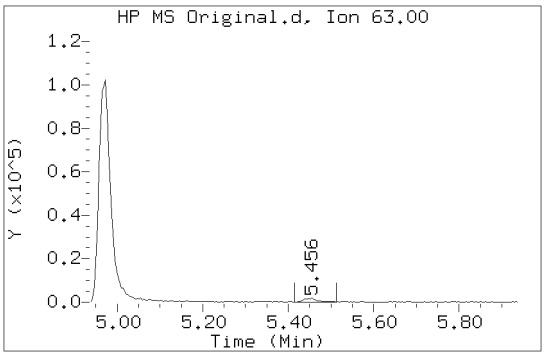
AFTER
MASS
98
AREA
1332
HEIGHT
847
19-Aug-2022
10:59
linh
pham



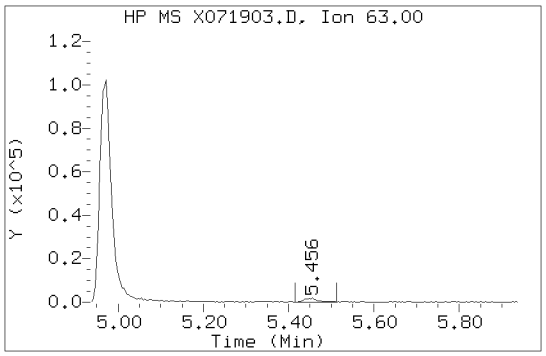
1,2-Dichloropropane (78-87-5)

Reason Code:

BEFORE
MASS
96
AREA
3384
HEIGHT
1813
25-Jul-2022
09:00
linh
pham



AFTER
MASS
63
AREA
3868
HEIGHT
1977
19-Aug-2022
10:59
linh
pham



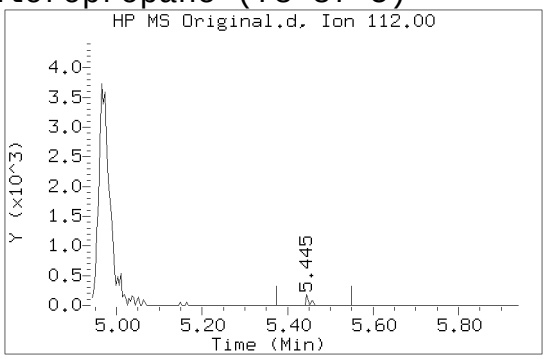
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichloropropane (78-87-5)

Reason Code:

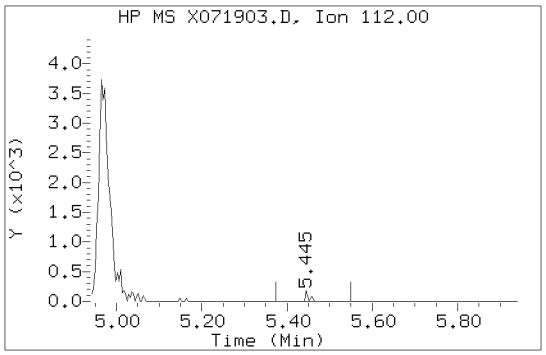
BEFORE

MASS
61
AREA
4515
HEIGHT
2443
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
91
HEIGHT
181
19-Aug-2022
10:59
linh
pham

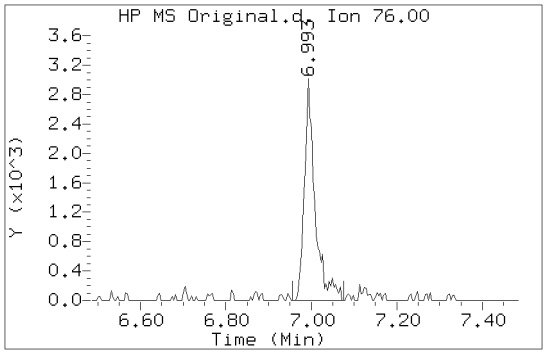


1,3-Dichloropropane (142-28-9)

Reason Code:

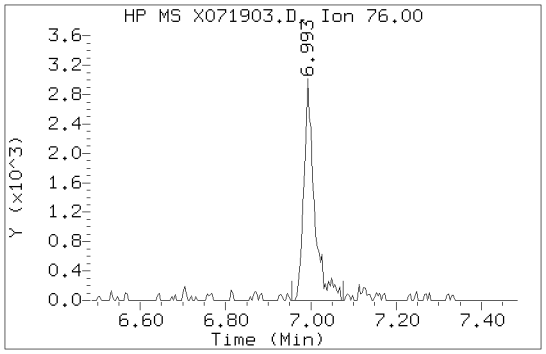
BEFORE

MASS
63
AREA
5606
HEIGHT
2531
25-Jul-2022
09:00
linh
pham



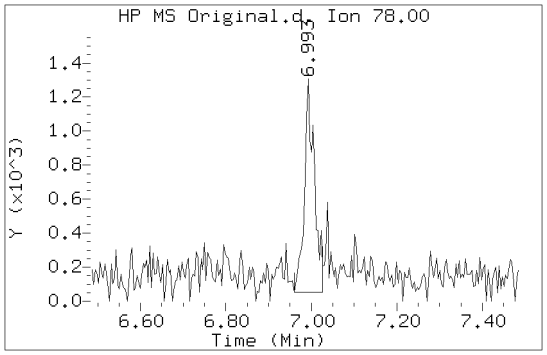
AFTER

MASS
76
AREA
5230
HEIGHT
3017
19-Aug-2022
10:59
linh
pham



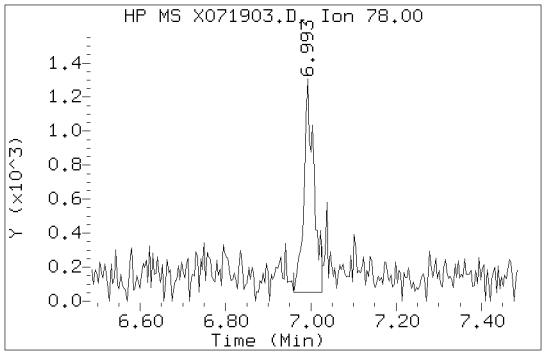
BEFORE

MASS
65
AREA
1710
HEIGHT
852
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
2030
HEIGHT
1255
19-Aug-2022
10:59
linh
pham

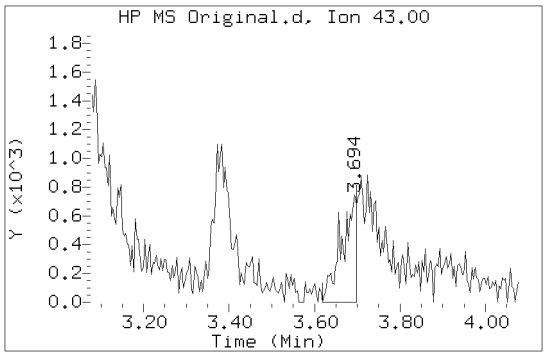


2-Butanone (78-93-3)

Reason Code:

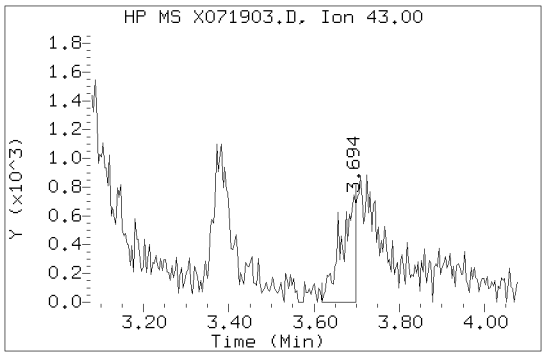
BEFORE

MASS
83
AREA
3451
HEIGHT
2061
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
1760
HEIGHT
747
19-Aug-2022
10:59
linh
pham



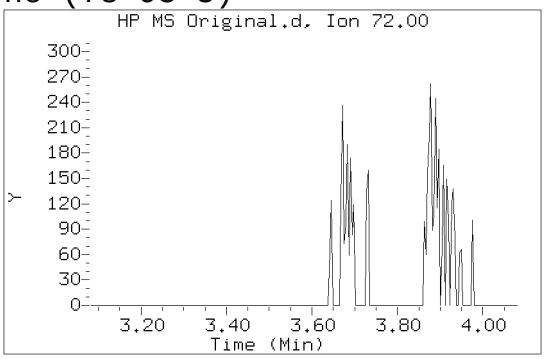
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

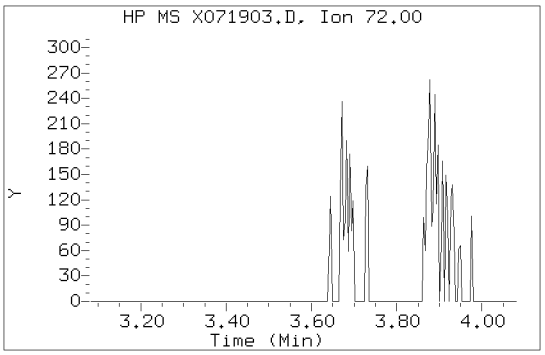
BEFORE

MASS
131
AREA
304
HEIGHT
265
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

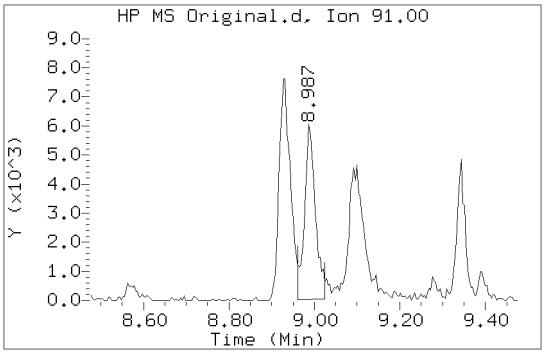


2-Chlorotoluene (95-49-8)

Reason Code:

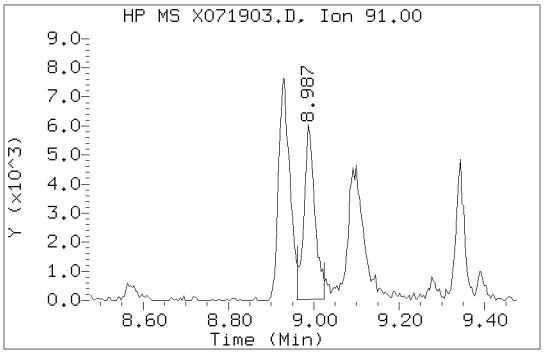
BEFORE

MASS
164
AREA
3226
HEIGHT
2287
25-Jul-2022
09:00
linh
pham



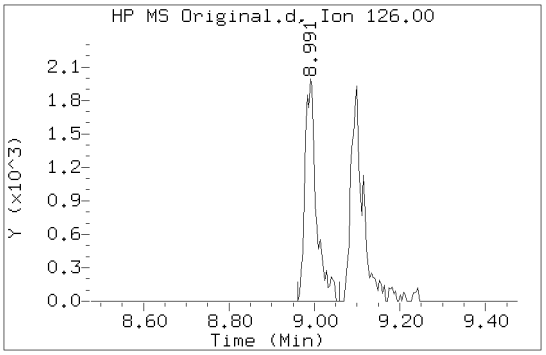
AFTER

MASS
91
AREA
10810
HEIGHT
6020
19-Aug-2022
10:59
linh
pham



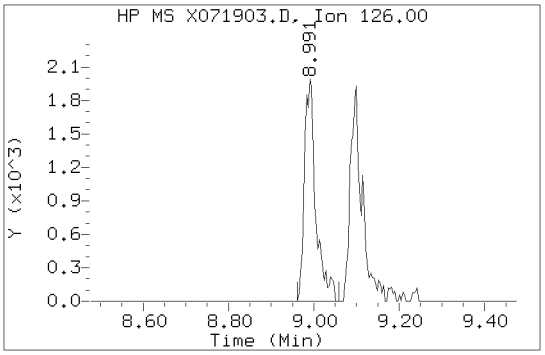
BEFORE

MASS
129
AREA
3404
HEIGHT
2186
25-Jul-2022
09:00
linh
pham



AFTER

MASS
126
AREA
3731
HEIGHT
1993
19-Aug-2022
10:59
linh
pham

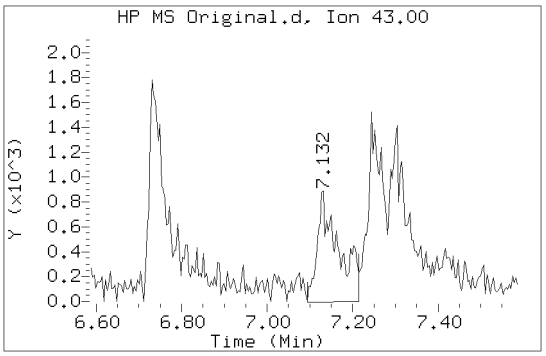


2-Hexanone (591-78-6)

Reason Code:

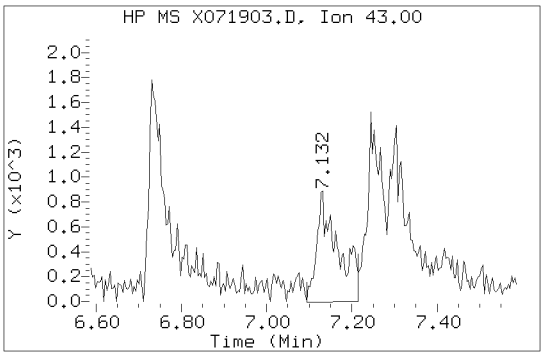
BEFORE

MASS
97
AREA
5496
HEIGHT
2194
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
3055
HEIGHT
891
19-Aug-2022
10:59
linh
pham



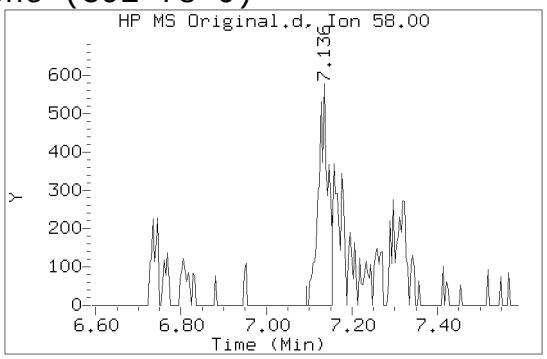
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

2-Hexanone (591-78-6)

Reason Code:

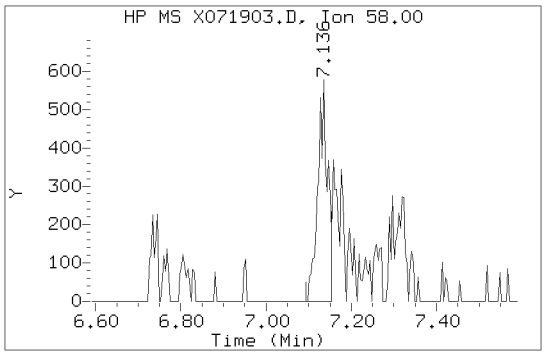
BEFORE

MASS
99
AREA
3434
HEIGHT
1650
25-Jul-2022
09:00
linh
pham



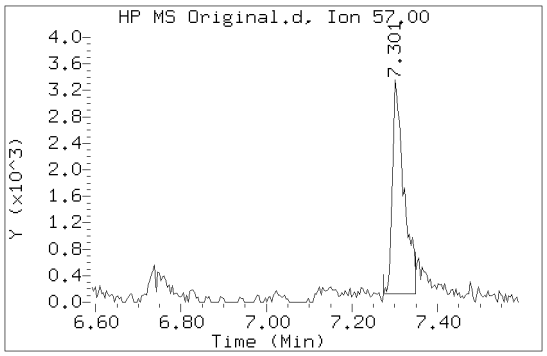
AFTER

MASS
58
AREA
919
HEIGHT
578
19-Aug-2022
10:59
linh
pham



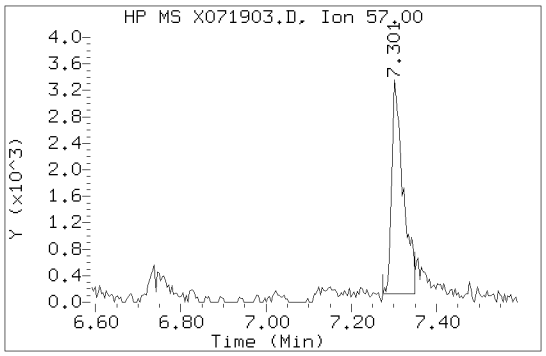
BEFORE

MASS
61
AREA
2652
HEIGHT
1251
25-Jul-2022
09:00
linh
pham



AFTER

MASS
57
AREA
5980
HEIGHT
3228
19-Aug-2022
10:59
linh
pham

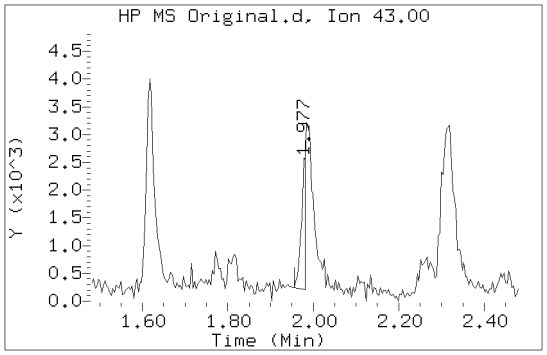


Acetone (67-64-1)

Reason Code:

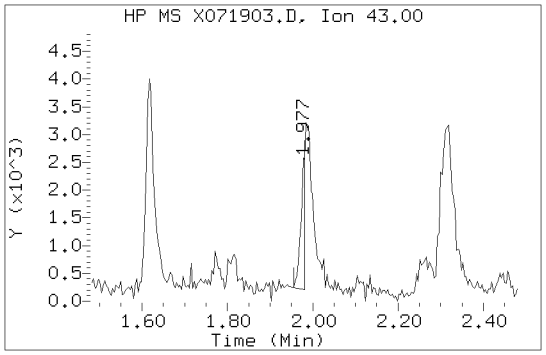
BEFORE

MASS
62
AREA
4102
HEIGHT
3481
25-Jul-2022
09:00
linh
pham



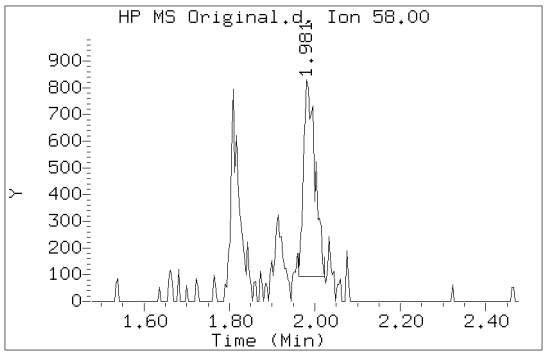
AFTER

MASS
43
AREA
1762
HEIGHT
2368
19-Aug-2022
10:59
linh
pham



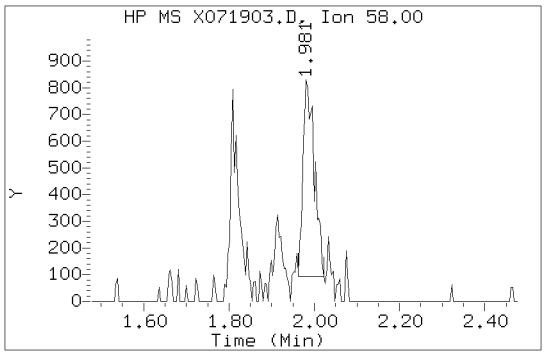
BEFORE

MASS
64
AREA
3620
HEIGHT
1767
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
1379
HEIGHT
737
19-Aug-2022
10:59
linh
pham



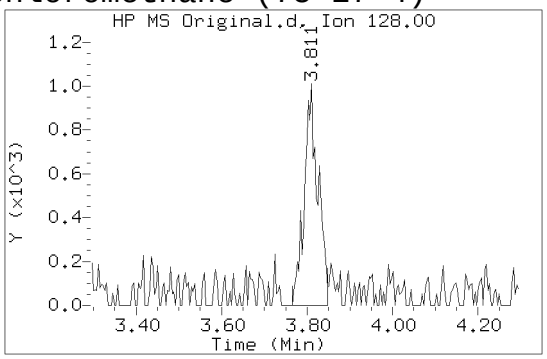
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Bromodichloromethane (75-27-4)

Reason Code:

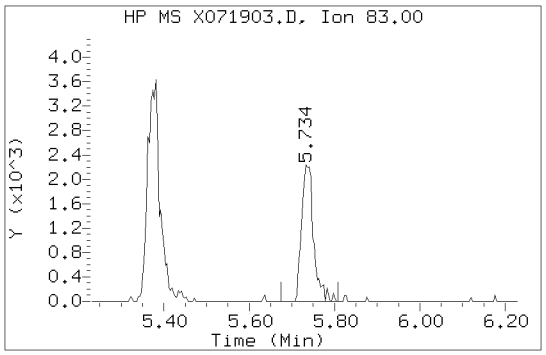
BEFORE

MASS
112
AREA
9208
HEIGHT
5442
25-Jul-2022
09:00
linh
pham



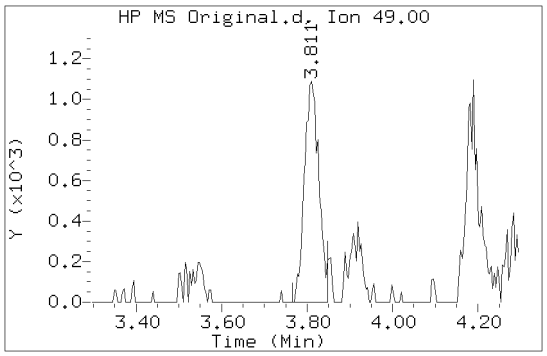
AFTER

MASS
83
AREA
4485
HEIGHT
2236
19-Aug-2022
10:59
linh
pham



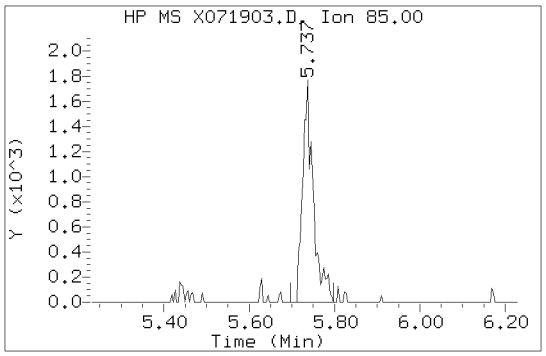
BEFORE

MASS
77
AREA
6659
HEIGHT
3709
25-Jul-2022
09:00
linh
pham



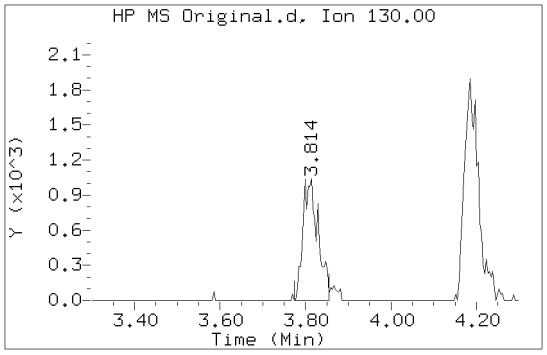
AFTER

MASS
85
AREA
3124
HEIGHT
1771
19-Aug-2022
10:59
linh
pham



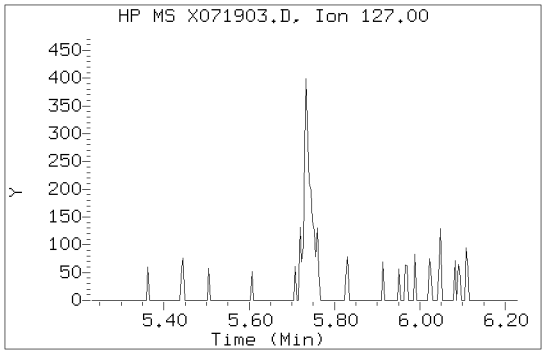
BEFORE

MASS
114
AREA
3227
HEIGHT
1854
25-Jul-2022
09:00
linh
pham



AFTER

MASS
127
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

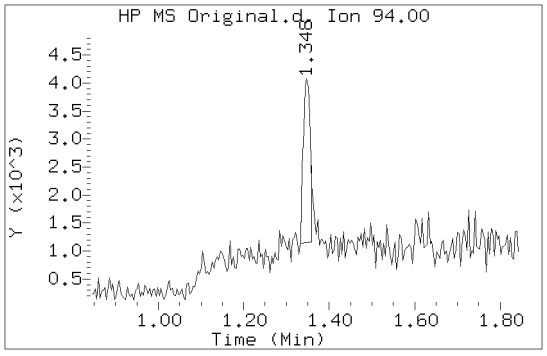


Bromomethane (74-83-9)

Reason Code:

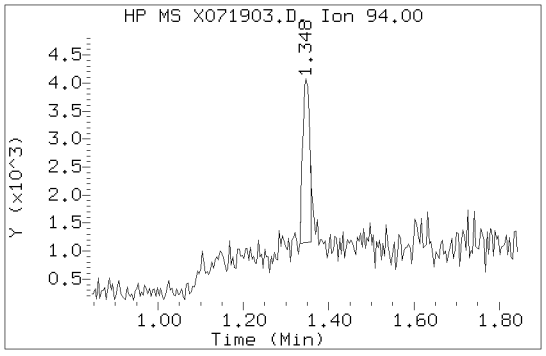
BEFORE

MASS
83
AREA
6190
HEIGHT
2614
25-Jul-2022
09:00
linh
pham



AFTER

MASS
94
AREA
3413
HEIGHT
2924
19-Aug-2022
10:59
linh
pham

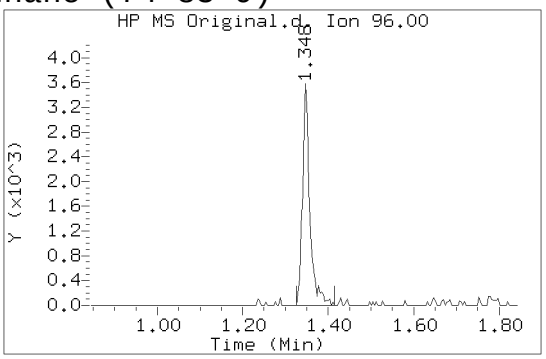


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Bromomethane (74-83-9)

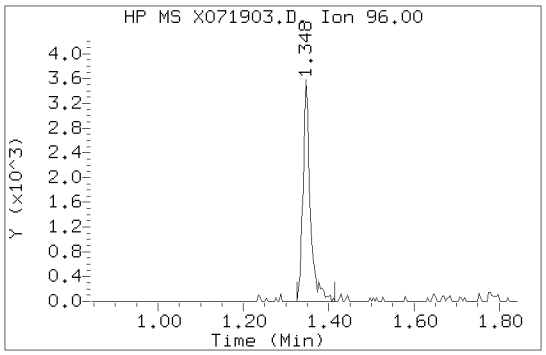
BEFORE

MASS
85
AREA
4424
HEIGHT
1752
25-Jul-2022
09:00
linh
pham



AFTER

MASS
96
AREA
4393
HEIGHT
3581
19-Aug-2022
10:59
linh
pham

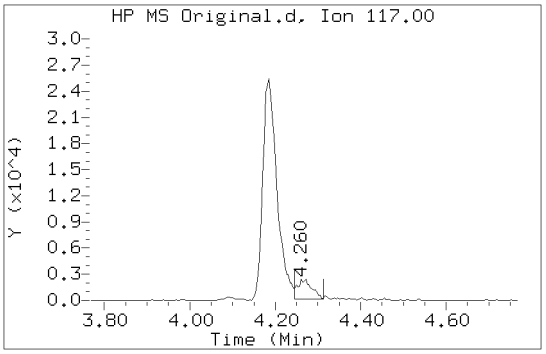


Reason Code:

Carbon Tetrachloride (56-23-5)

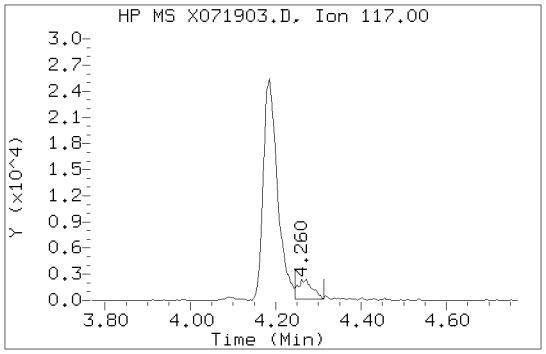
BEFORE

MASS
96
AREA
3635
HEIGHT
1411
25-Jul-2022
09:00
linh
pham



AFTER

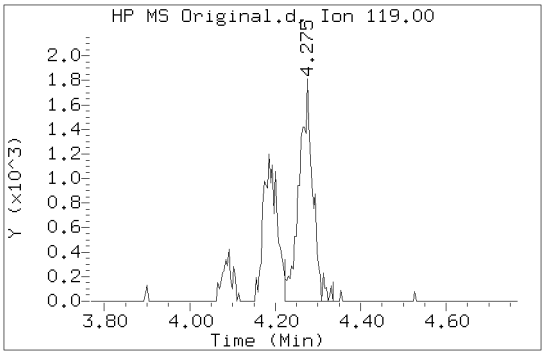
MASS
117
AREA
5505
HEIGHT
2312
19-Aug-2022
10:59
linh
pham



Reason Code:

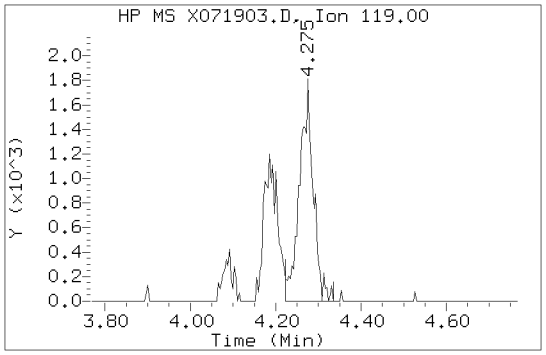
BEFORE

MASS
61
AREA
5502
HEIGHT
1984
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
4116
HEIGHT
1812
19-Aug-2022
10:59
linh
pham

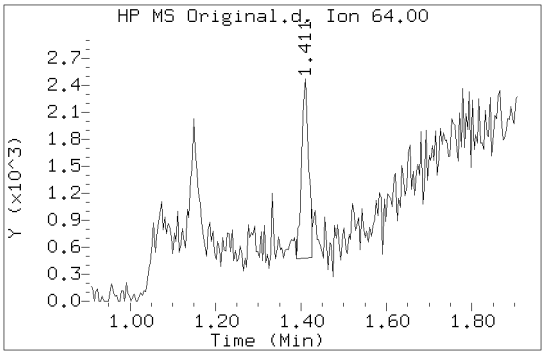


Reason Code:

Chloroethane (75-00-3)

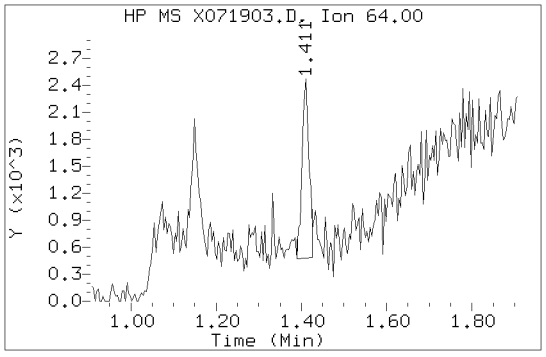
BEFORE

MASS
117
AREA
971157
HEIGHT
655204
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
2356
HEIGHT
1989
19-Aug-2022
10:59
linh
pham



Reason Code:

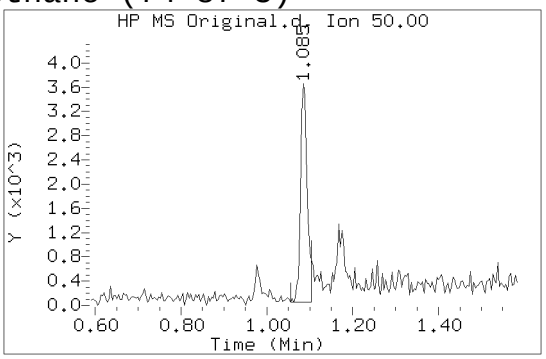
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Chloromethane (74-87-3)

Reason Code:

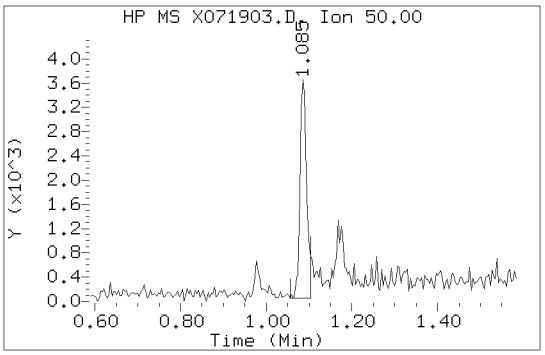
BEFORE

MASS
114
AREA
1081359
HEIGHT
557626
25-Jul-2022
09:00
linh
pham



AFTER

MASS
50
AREA
3959
HEIGHT
3607
19-Aug-2022
10:59
linh
pham

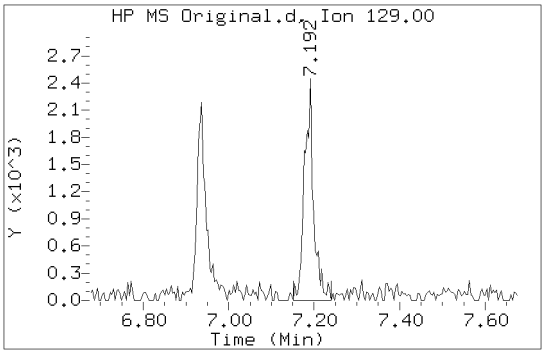


Dibromochloromethane (124-48-1)

Reason Code:

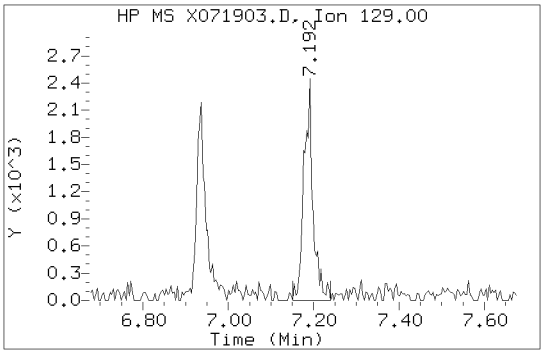
BEFORE

MASS
106
AREA
10839
HEIGHT
5861
25-Jul-2022
09:00
linh
pham



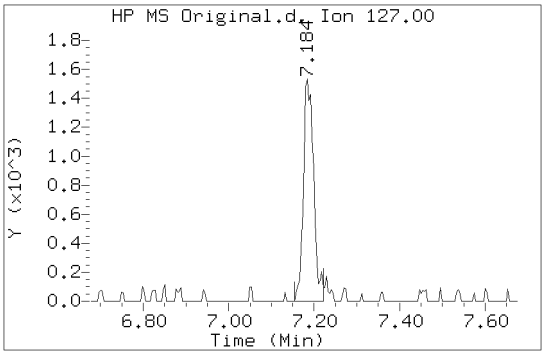
AFTER

MASS
129
AREA
3661
HEIGHT
2448
19-Aug-2022
10:59
linh
pham



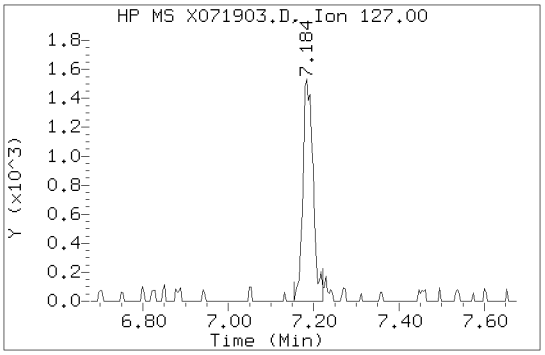
BEFORE

MASS
91
AREA
22202
HEIGHT
11255
25-Jul-2022
09:00
linh
pham



AFTER

MASS
127
AREA
2593
HEIGHT
1534
19-Aug-2022
10:59
linh
pham

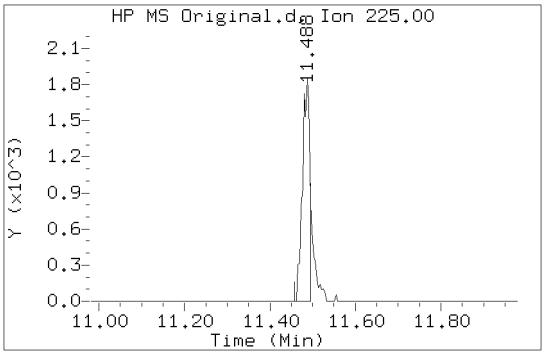


Hexachlorobutadiene (87-68-3)

Reason Code:

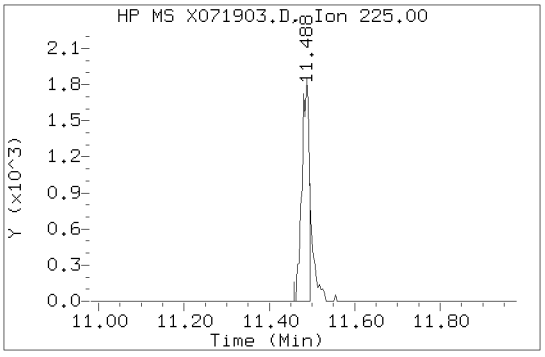
BEFORE

MASS
91
AREA
14364
HEIGHT
7624
25-Jul-2022
09:00
linh
pham



AFTER

MASS
225
AREA
2233
HEIGHT
1848
19-Aug-2022
10:59
linh
pham



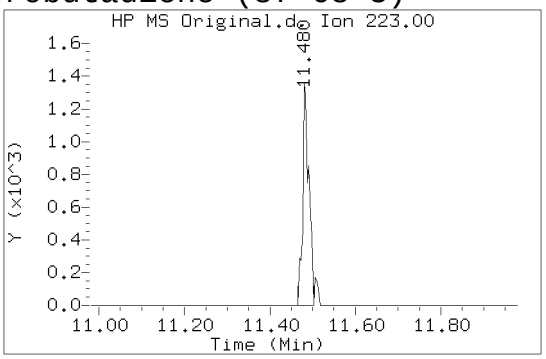
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Hexachlorobutadiene (87-68-3)

Reason Code:

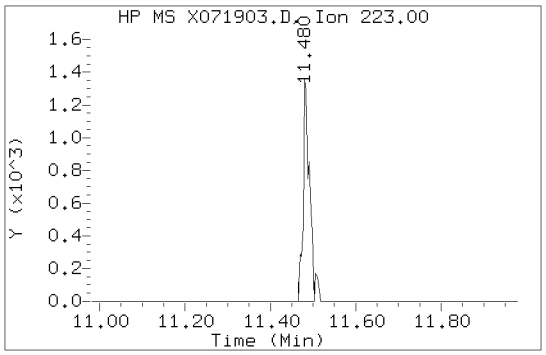
BEFORE

MASS
120
AREA
3739
HEIGHT
1832
25-Jul-2022
09:00
linh
pham



AFTER

MASS
223
AREA
1401
HEIGHT
1354
19-Aug-2022
10:59
linh
pham

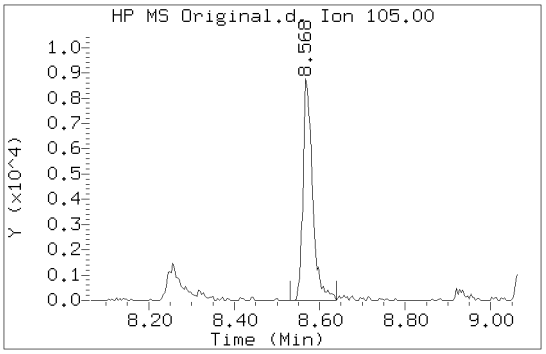


Isopropylbenzene (98-82-8)

Reason Code:

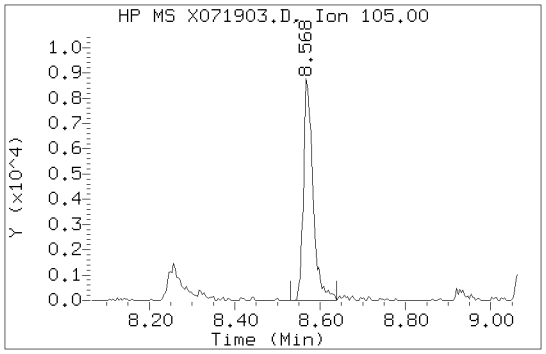
BEFORE

MASS
91
AREA
10810
HEIGHT
6020
25-Jul-2022
09:00
linh
pham



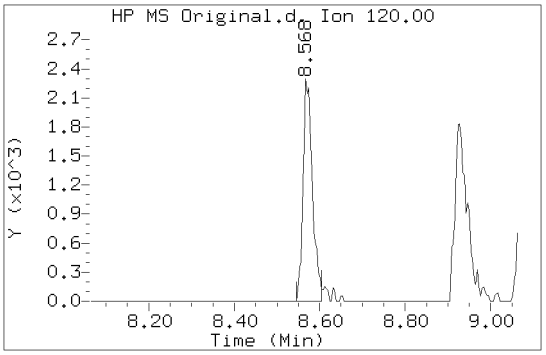
AFTER

MASS
105
AREA
13970
HEIGHT
8770
19-Aug-2022
10:59
linh
pham



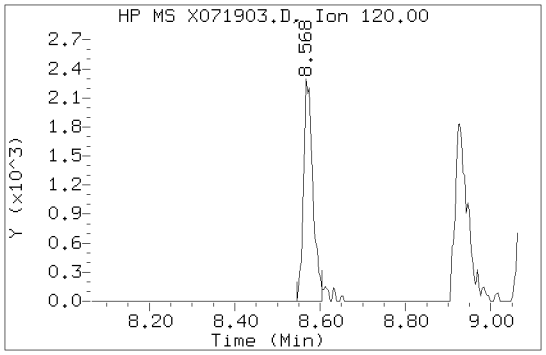
BEFORE

MASS
126
AREA
3731
HEIGHT
1993
25-Jul-2022
09:00
linh
pham



AFTER

MASS
120
AREA
3569
HEIGHT
2296
19-Aug-2022
10:59
linh
pham

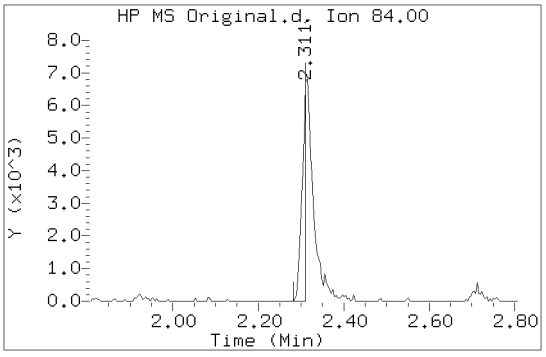


Methylene Chloride (75-09-2)

Reason Code:

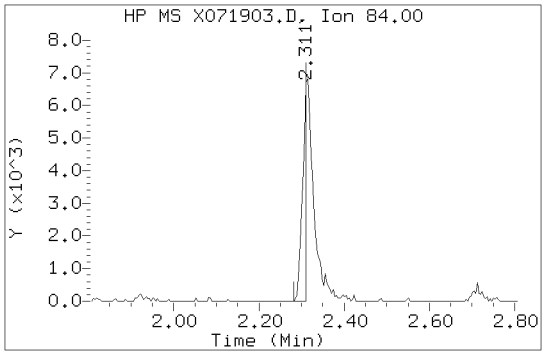
BEFORE

MASS
91
AREA
11731
HEIGHT
4585
25-Jul-2022
09:00
linh
pham



AFTER

MASS
84
AREA
4801
HEIGHT
6706
19-Aug-2022
10:59
linh
pham



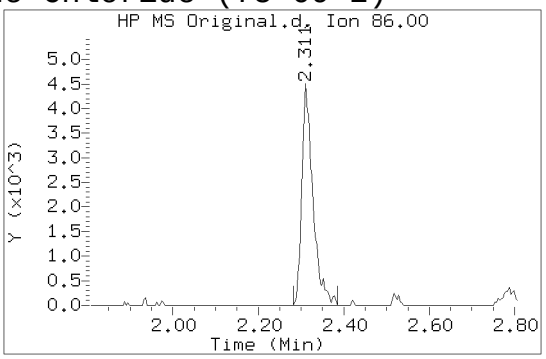
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Methylene Chloride (75-09-2)

Reason Code:

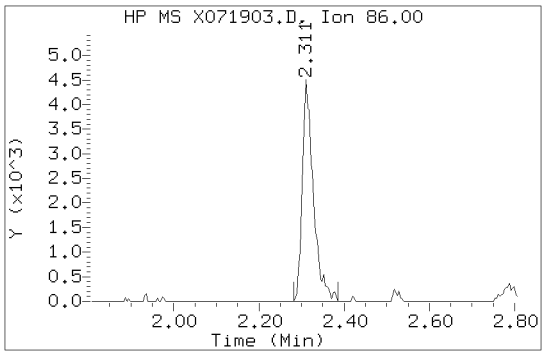
BEFORE

MASS
126
AREA
3659
HEIGHT
1928
25-Jul-2022
09:00
linh
pham



AFTER

MASS
86
AREA
8290
HEIGHT
4505
19-Aug-2022
10:59
linh
pham

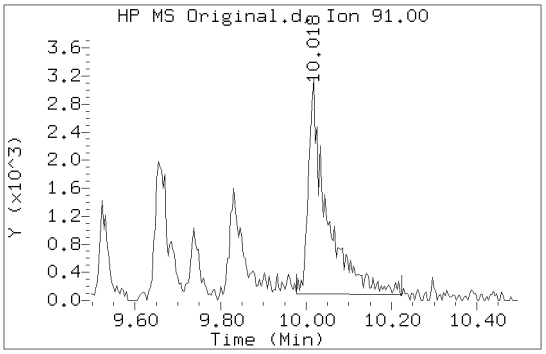


n-Butylbenzene (104-51-8)

Reason Code:

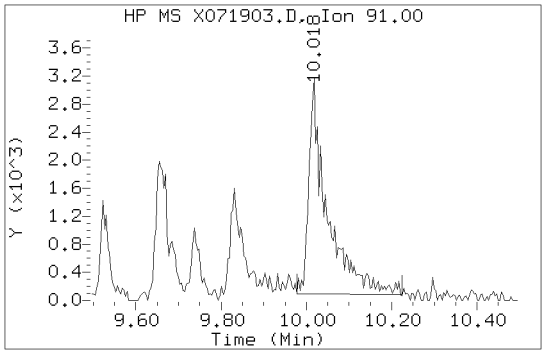
BEFORE

MASS
119
AREA
9259
HEIGHT
6692
25-Jul-2022
09:00
linh
pham



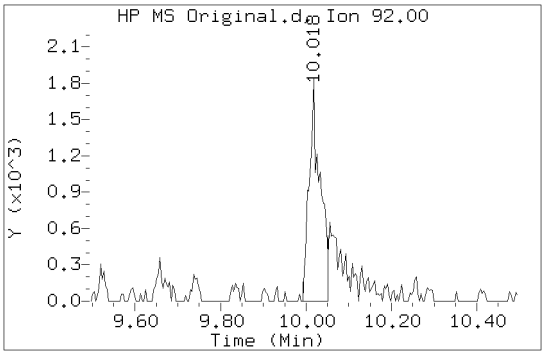
AFTER

MASS
91
AREA
9255
HEIGHT
3074
19-Aug-2022
10:59
linh
pham



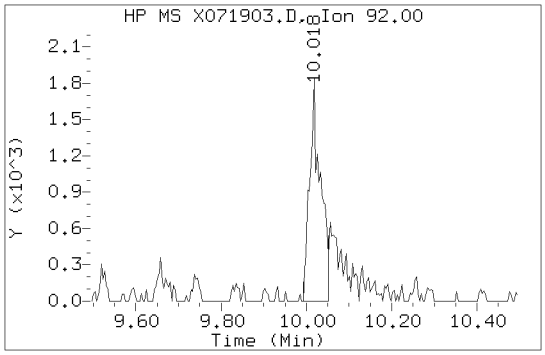
BEFORE

MASS
91
AREA
6295
HEIGHT
4785
25-Jul-2022
09:00
linh
pham



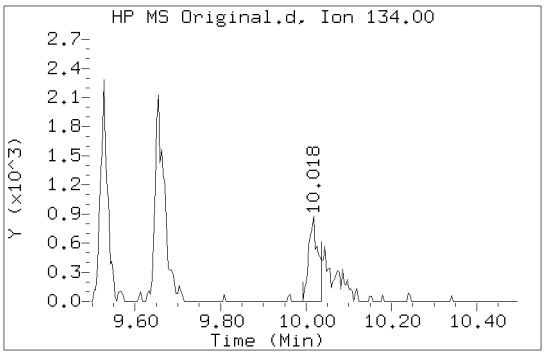
AFTER

MASS
92
AREA
3270
HEIGHT
1836
19-Aug-2022
10:59
linh
pham



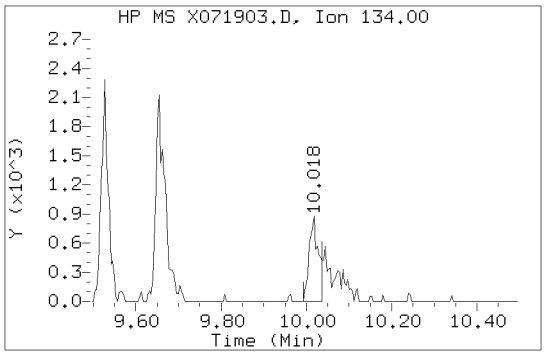
BEFORE

MASS
134
AREA
2791
HEIGHT
2284
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
1329
HEIGHT
881
19-Aug-2022
10:59
linh
pham



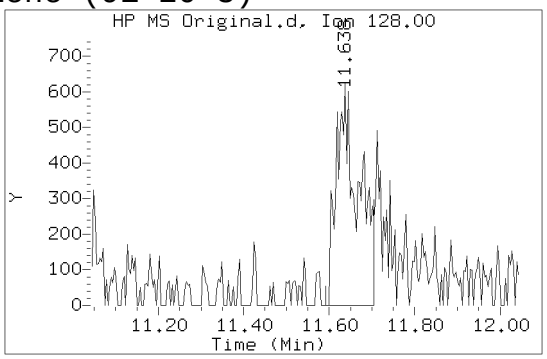
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Naphthalene (91-20-3)

Reason Code:

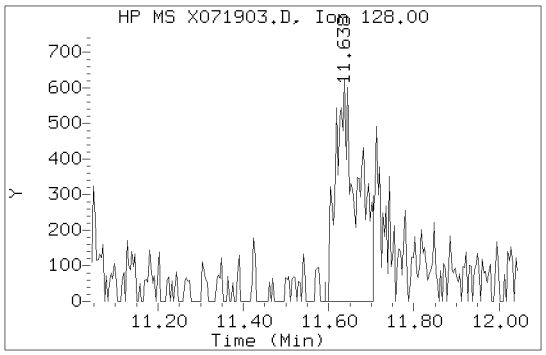
BEFORE

MASS
105
AREA
13047
HEIGHT
10290
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
2252
HEIGHT
623
19-Aug-2022
10:59
linh
pham

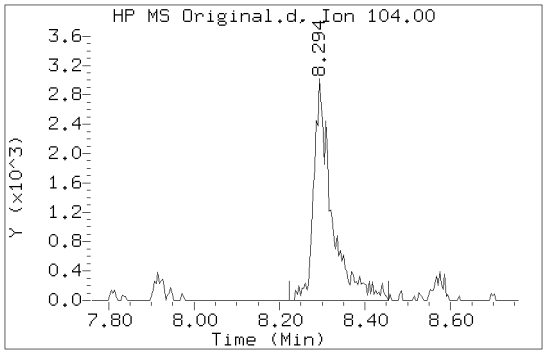


Styrene (100-42-5)

Reason Code:

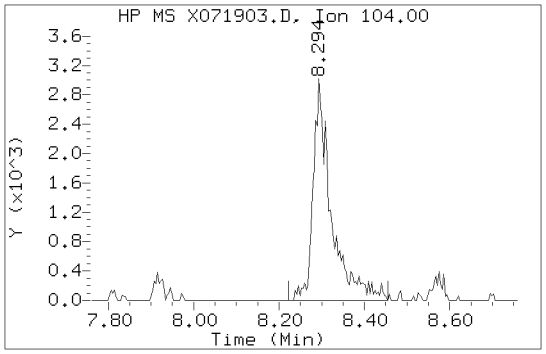
BEFORE

MASS
225
AREA
2233
HEIGHT
1848
25-Jul-2022
09:00
linh
pham



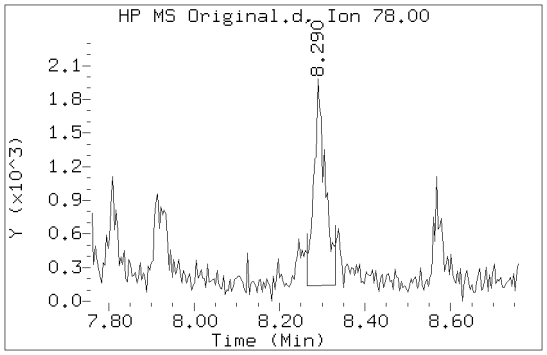
AFTER

MASS
104
AREA
8853
HEIGHT
3020
19-Aug-2022
10:59
linh
pham



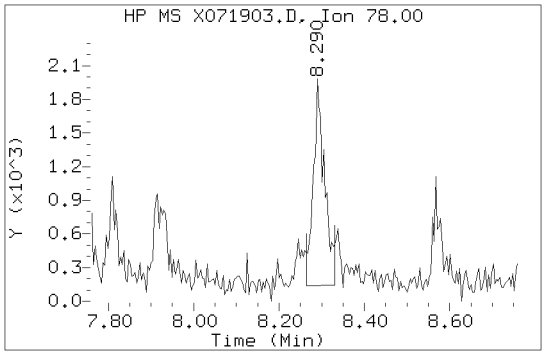
BEFORE

MASS
223
AREA
1401
HEIGHT
1354
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
3427
HEIGHT
1842
19-Aug-2022
10:59
linh
pham

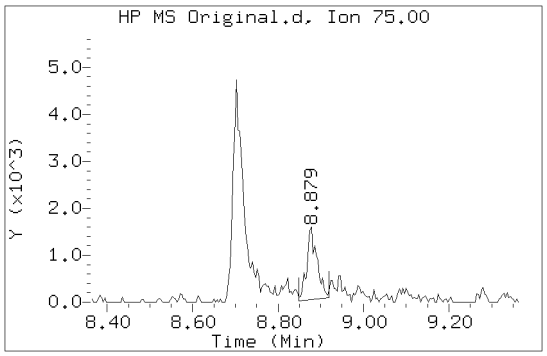


1,2,3-Trichloropropane (96-18-4)

Reason Code:

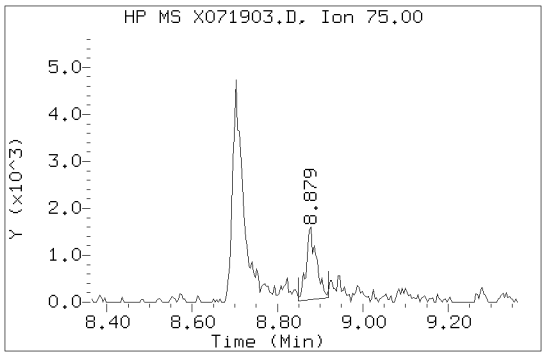
BEFORE

MASS
180
AREA
1275
HEIGHT
555
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
2596
HEIGHT
1548
19-Aug-2022
10:59
linh
pham



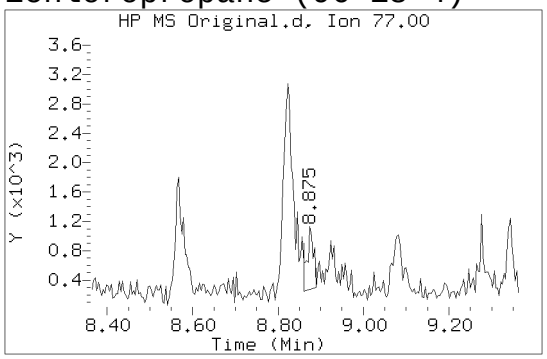
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,3-Trichloropropane (96-18-4)

Reason Code:

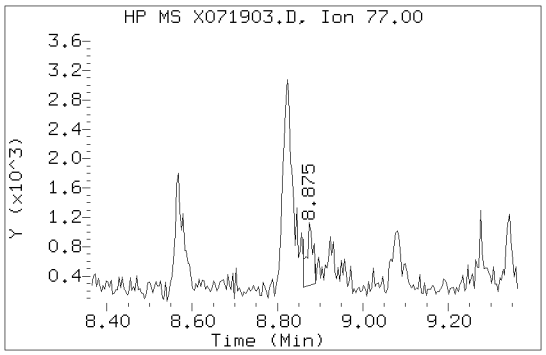
BEFORE

MASS
182
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
920
HEIGHT
859
19-Aug-2022
10:59
linh
pham

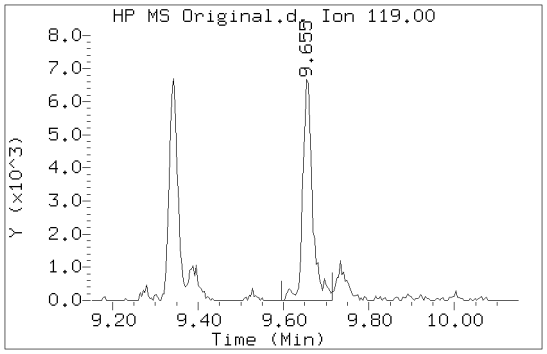


p-Isopropyltoluene (99-87-6)

Reason Code:

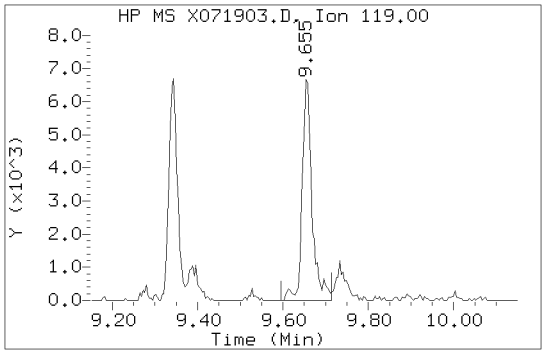
BEFORE

MASS
106
AREA
16597
HEIGHT
9320
25-Jul-2022
09:00
linh
pham



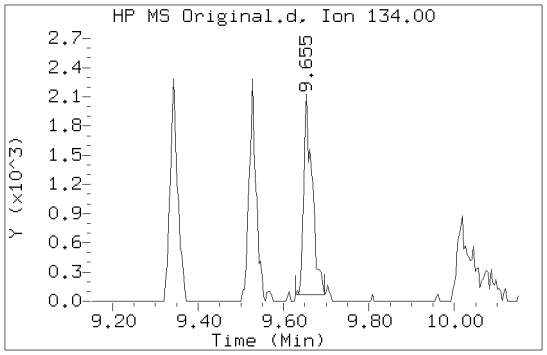
AFTER

MASS
119
AREA
11018
HEIGHT
6684
19-Aug-2022
10:59
linh
pham



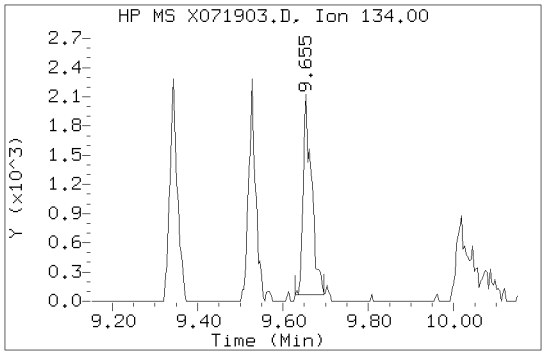
BEFORE

MASS
91
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
2906
HEIGHT
2066
19-Aug-2022
10:59
linh
pham

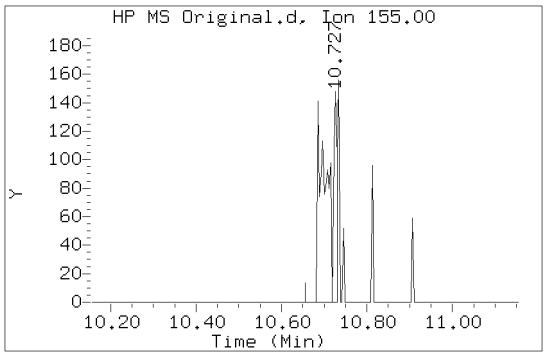


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

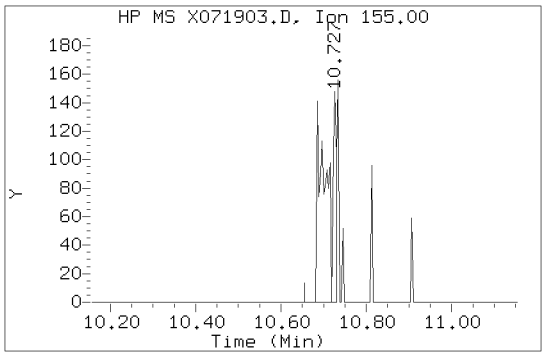
BEFORE

MASS
73
AREA
9993
HEIGHT
5235
25-Jul-2022
09:00
linh
pham



AFTER

MASS
155
AREA
270
HEIGHT
148
19-Aug-2022
10:59
linh
pham



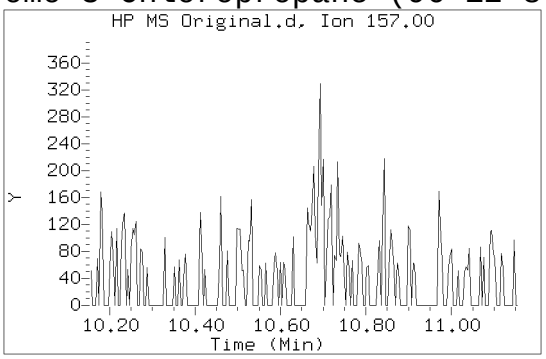
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

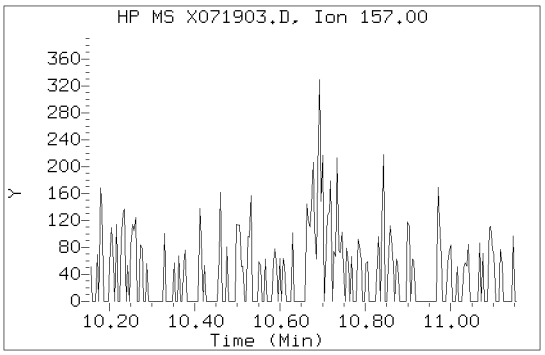
BEFORE

MASS
57
AREA
7497
HEIGHT
3757
25-Jul-2022
09:00
linh
pham



AFTER

MASS
157
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

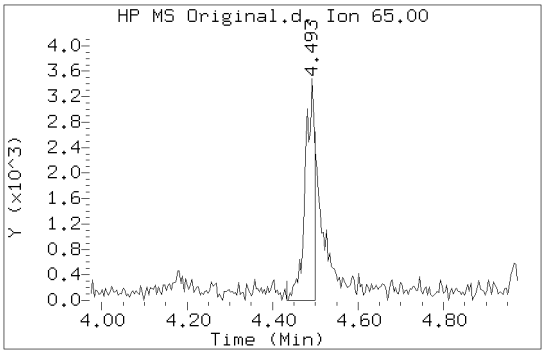


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

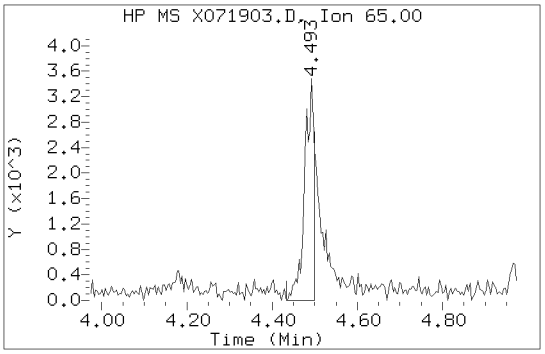
BEFORE

MASS
113
AREA
4991
HEIGHT
2969
25-Jul-2022
09:00
linh
pham



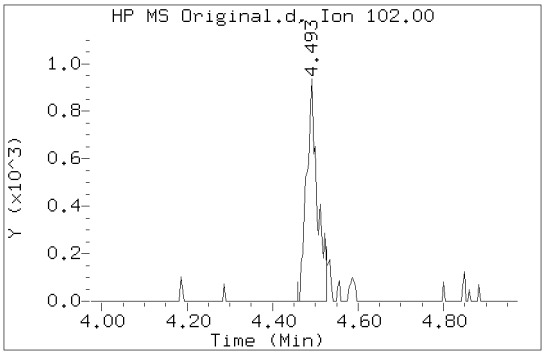
AFTER

MASS
65
AREA
5362
HEIGHT
3482
19-Aug-2022
10:59
linh
pham



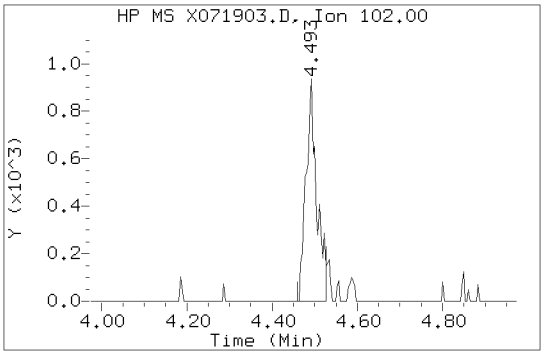
BEFORE

MASS
111
AREA
6845
HEIGHT
2797
25-Jul-2022
09:00
linh
pham



AFTER

MASS
102
AREA
1658
HEIGHT
936
19-Aug-2022
10:59
linh
pham

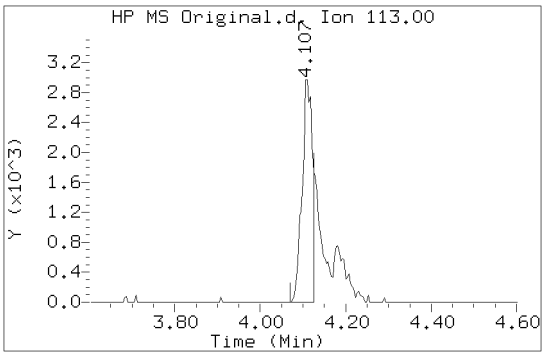


Dibromofluoromethane (1868-53-7)

Reason Code:

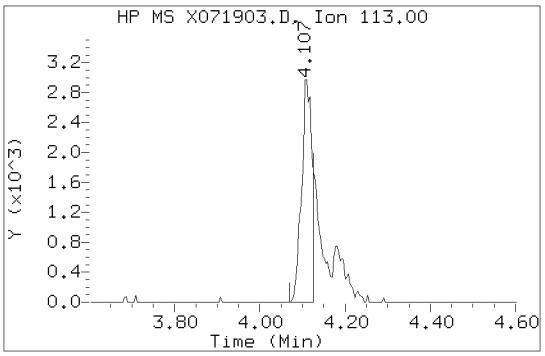
BEFORE

MASS
98
AREA
14148
HEIGHT
13268
25-Jul-2022
09:00
linh
pham



AFTER

MASS
113
AREA
4991
HEIGHT
2969
19-Aug-2022
10:59
linh
pham



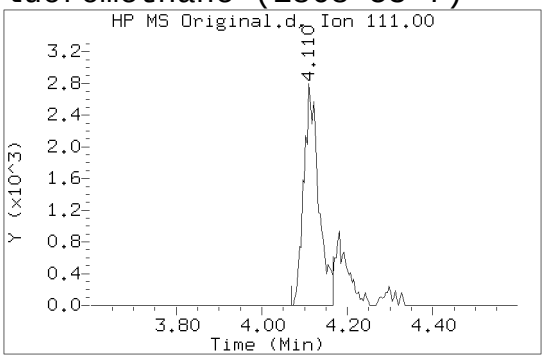
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Dibromofluoromethane (1868-53-7)

Reason Code:

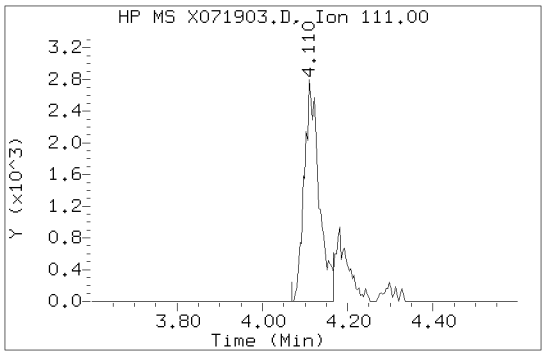
BEFORE

MASS
99
AREA
2541
HEIGHT
1372
25-Jul-2022
09:00
linh
pham



AFTER

MASS
111
AREA
6845
HEIGHT
2797
19-Aug-2022
10:59
linh
pham

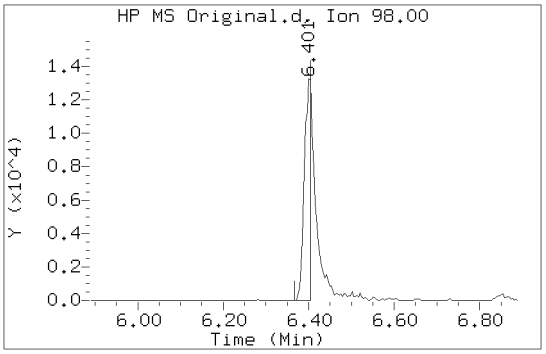


Toluene-d8 (2037-26-5)

Reason Code:

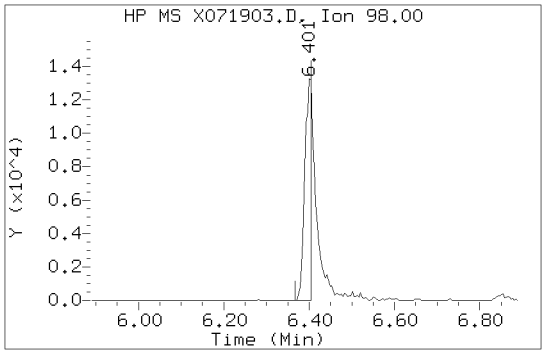
BEFORE

MASS
65
AREA
5362
HEIGHT
3482
25-Jul-2022
09:00
linh
pham



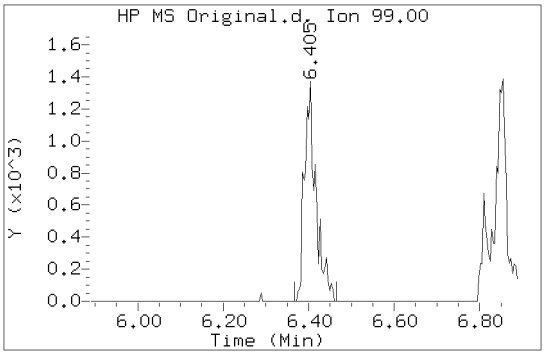
AFTER

MASS
98
AREA
14148
HEIGHT
13268
19-Aug-2022
10:59
linh
pham



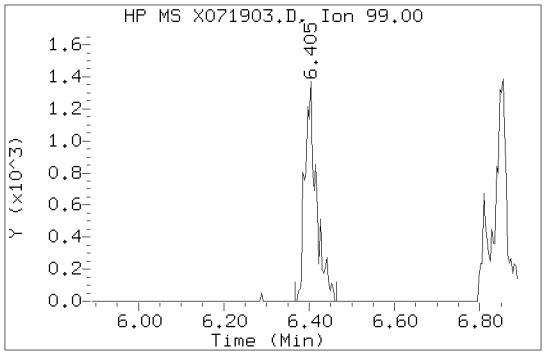
BEFORE

MASS
102
AREA
1658
HEIGHT
936
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
2541
HEIGHT
1372
19-Aug-2022
10:59
linh
pham

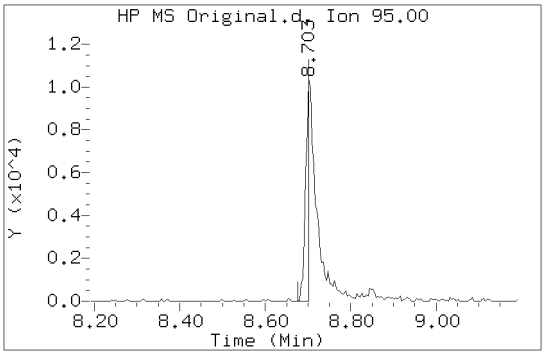


4-Bromofluorobenzene (460-00-4)

Reason Code:

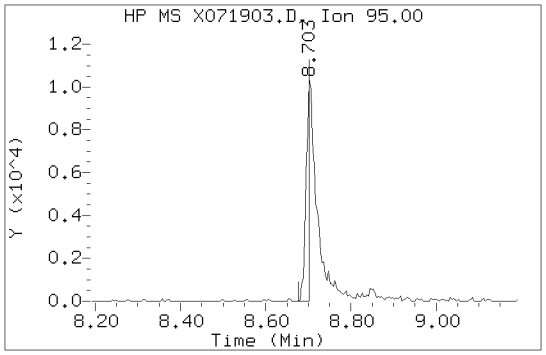
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10380
25-Jul-2022
09:00
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AFTER

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HEIGHT
10380
19-Aug-2022
10:59
linh
pham



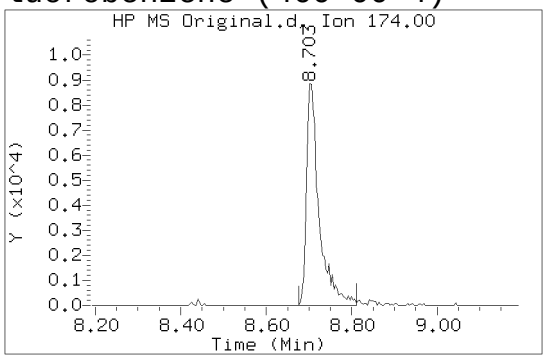
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

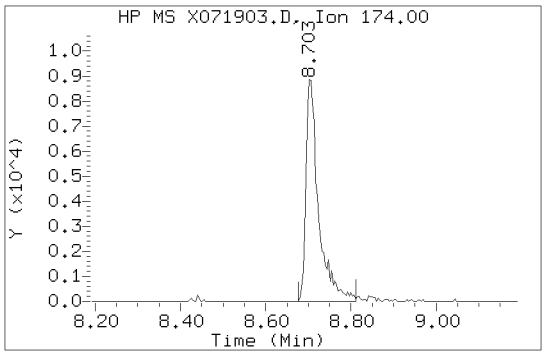
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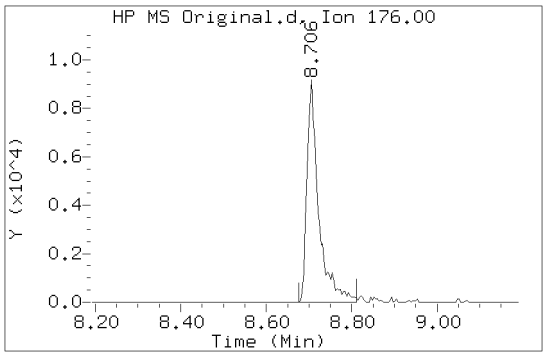
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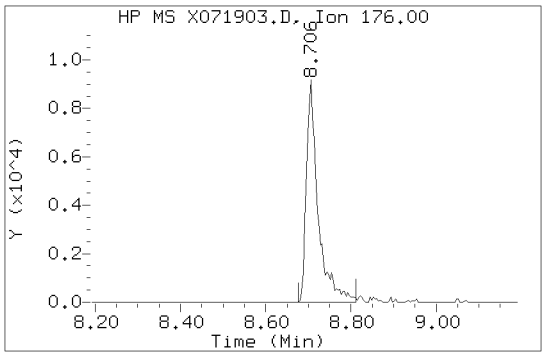
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AFTER

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HEIGHT
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19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 19-JUL-2022 12:29
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 12:08 Cal File: X071903.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	702091	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1046256	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	952128	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	441386	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	9308	1.00000	0.69(aM)
$ 35 1,2-Dichloroethane-d4	65	4.489	4.489	(1.073)	8675	1.00000	0.87(aM)
$ 48 Toluene-d8	98	6.397	6.397	(0.834)	23913	1.00000	1.00(aM)
$ 69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	11894	1.00000	0.59(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	6847	1.00000	1.02(a)
31 1,1,1-Trichloroethane	97	4.087	4.087	(0.977)	9877	1.00000	0.99(a)
68 1,1,2,2-Tetrachloroethane	83	8.848	8.848	(0.915)	6777	1.00000	1.09(a)
53 1,1,2-Trichloroethane	83	6.846	6.846	(0.893)	4829	1.00000	0.98(a)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	11983	1.00000	1.10(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	6600	1.00000	1.12(a)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	8523	1.00000	1.00(aM)
93 1,2,3-Trichlorobenzene	180	11.776	11.776	(1.218)	2063	1.00000	0.89(a)
71 1,2,3-Trichloropropane	75	8.874	8.874	(0.918)	5208	1.00000	1.08(aM)
90 1,2,4-Trichlorobenzene	180	11.382	11.382	(1.178)	3403	1.00000	0.84(aM)
79 1,2,4-Trimethylbenzene	105	9.388	9.388	(0.971)	21695	1.00000	1.02(a)
89 1,2-Dibromo-3-Chloropropane	155	10.689	10.689	(1.106)	348	1.00000	1.16(aM)

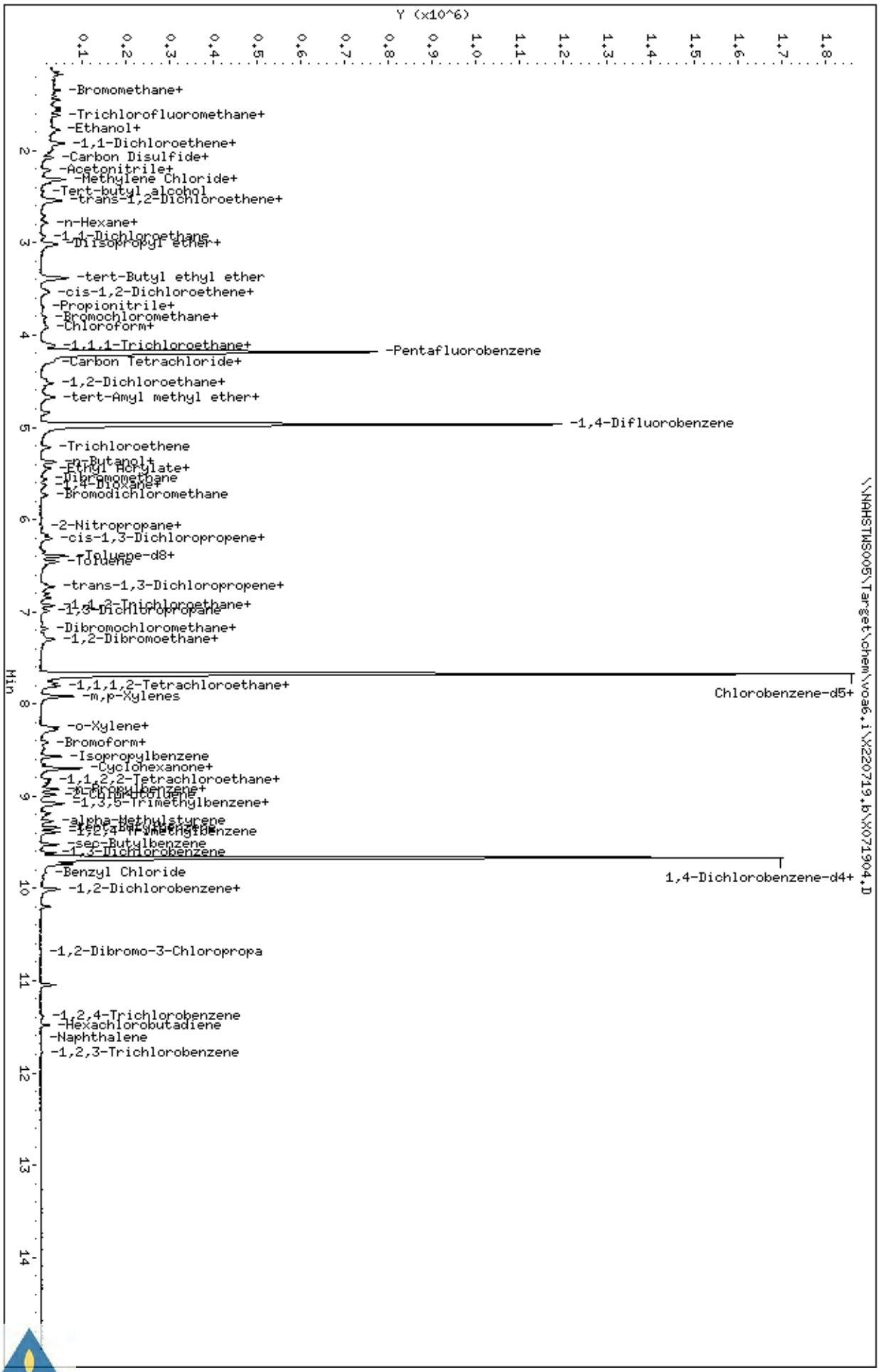
57	1,2-Dibromoethane	107	7.274	7.274 (0.948)	5896	1.00000	0.94(a)
88	1,2-Dichlorobenzene	146	10.007	10.007 (1.035)	11239	1.00000	1.01(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.575	4.575	(0.921)	9313	1.00000	1.01(a)
42	1,2-Dichloropropane	63	5.444	5.444	(1.096)	6012	1.00000	0.93(aM)
75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	21739	1.00000	1.01(a)
83	1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	12197	1.00000	0.99(a)
54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	10197	1.00000	1.02(a)
84	1,4-Dichlorobenzene	146	9.688	9.688	(1.002)	13164	1.00000	1.01(a)
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	10957	1.00000	0.89(aM)
24	2-Butanone	43	3.679	3.679	(0.879)	3253	2.00000	1.84(aM)
76	2-Chlorotoluene	91	8.987	8.987	(0.930)	20980	1.00000	1.10(a)
52	2-Hexanone	43	7.116	7.116	(0.928)	5434	2.00000	1.81(aM)
77	4-Chlorotoluene	91	9.088	9.088	(0.940)	22202	1.00000	1.05(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	22742	1.00000	1.05(a)
45	4-Methyl-2-Pentanone	43	6.340	6.340	(0.827)	9354	2.00000	2.01(aM)
10	Acetone	43	1.984	1.984	(0.474)	3509	2.00000	(aM)
37	Benzene	78	4.519	4.519	(0.909)	26549	1.00000	1.07(a)
74	Bromobenzene	156	8.818	8.818	(0.912)	7556	1.00000	1.00(a)
29	Bromochloromethane	128	3.810	3.810	(0.910)	4315	1.00000	1.09(a)
39	Bromodichloromethane	83	5.737	5.737	(1.155)	8775	1.00000	0.99(a)
66	Bromoform	173	8.417	8.417	(1.097)	3730	1.00000	2.02(Ta)
6	Bromomethane	94	1.347	1.347	(0.322)	6763	1.00000	0.07(aM)
19	Carbon Disulfide	76	2.074	2.074	(0.496)	33751	2.00000	2.17(a)
34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	9827	1.00000	1.08(aH)
59	Chlorobenzene	112	7.697	7.697	(1.003)	18297	1.00000	1.01(a)
7	Chloroethane	64	1.407	1.407	(0.336)	4804	1.00000	1.06(aM)
28	Chloroform	83	3.919	3.919	(0.936)	12942	1.00000	1.09(a)
3	Chloromethane	50	1.085	1.085	(0.259)	7297	1.00000	1.17(aM)
27	cis-1,2-Dichloroethene	96	3.540	3.540	(0.846)	7176	1.00000	1.02(a)
46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.241)	10546	1.00000	0.97(a)
55	Dibromochloromethane	129	7.188	7.188	(0.937)	6898	1.00000	0.97(a)
44	Dibromomethane	93	5.564	5.564	(1.120)	4501	1.00000	1.04(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	7427	1.00000	0.94(a)
61	Ethylbenzene	106	7.810	7.810	(1.018)	9298	1.00000	1.01(a)
91	Hexachlorobutadiene	225	11.487	11.487	(1.188)	3610	1.00000	0.97(a)
67	Isopropylbenzene	105	8.567	8.567	(1.117)	28077	1.00000	1.02(a)
62	m,p-Xylenes	106	7.915	7.915	(1.032)	22802	2.00000	2.01(a)
17	Methylene Chloride	84	2.311	2.311	(0.552)	7303	1.00000	0.27(aM)
87	n-Butylbenzene	91	10.007	10.007	(1.035)	16618	1.00000	0.92(aM)
73	n-Propylbenzene	91	8.923	8.923	(0.923)	29049	1.00000	0.99(a)
92	Naphthalene	128	11.622	11.622	(1.202)	4273	1.00000	0.95(aM)
63	o-Xylene	106	8.248	8.248	(1.075)	11062	1.00000	1.00(a)
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	25764	1.00000	1.03(a)
64	Styrene	104	8.282	8.282	(1.080)	17705	1.00000	0.97(aM)
78	tert-Butylbenzene	119	9.343	9.343	(0.967)	19169	1.00000	1.05(a)
56	Tetrachloroethene	164	6.936	6.936	(0.904)	6649	1.00000	1.07(a)
50	Toluene	91	6.457	6.457	(0.842)	28159	1.00000	1.05(a)
20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	6346	1.00000	1.02(a)
51	trans-1,3-Dichloropropene	75	6.697	6.697	(1.348)	7300	1.00000	0.81(a)
38	Trichloroethene	130	5.216	5.216	(1.050)	7477	1.00000	1.01(a)
8	Trichlorofluoromethane	101	1.568	1.568	(0.375)	12350	1.00000	1.11(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	8192	1.00000	1.11(a)

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.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
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Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

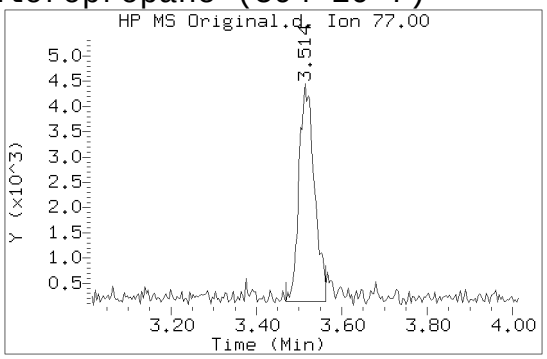
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

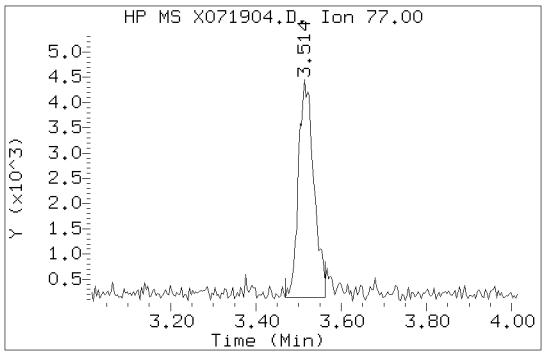
2,2-Dichloropropane (594-20-7)

Reason Code:

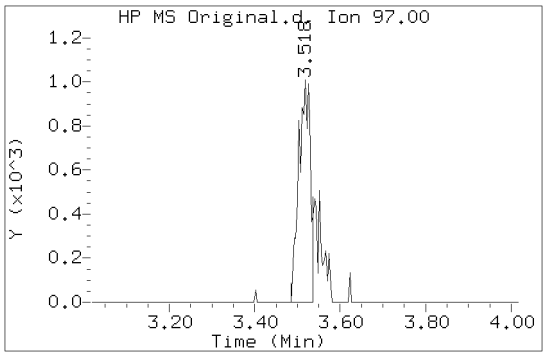
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25-Jul-2022
09:00
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pham



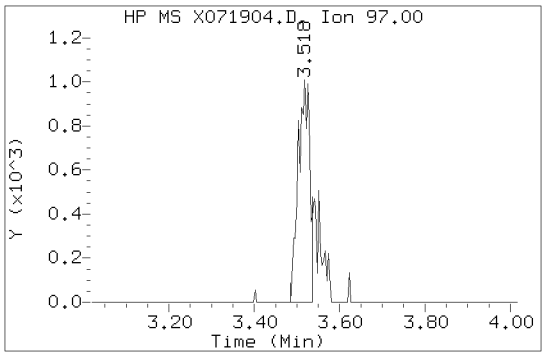
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BEFORE
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25-Jul-2022
09:00
linh
pham



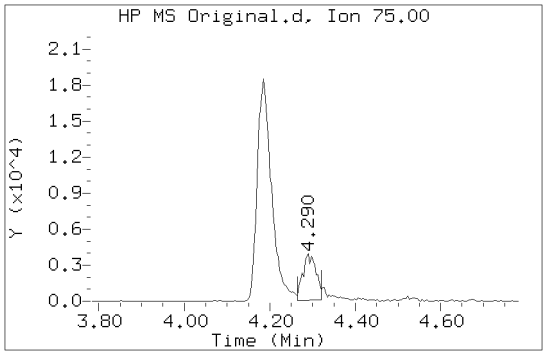
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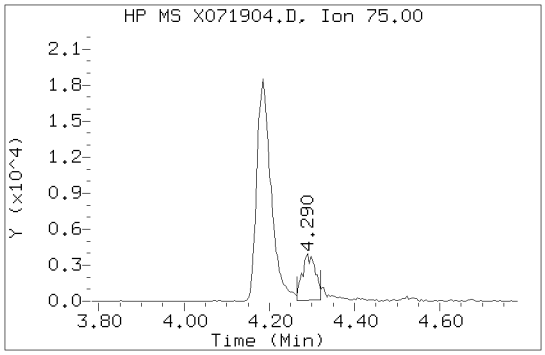
1,1-Dichloropropene (563-58-6)

Reason Code:

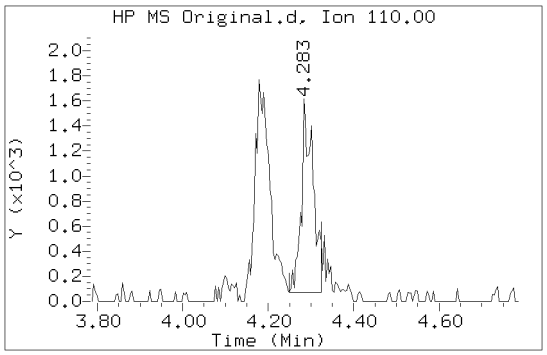
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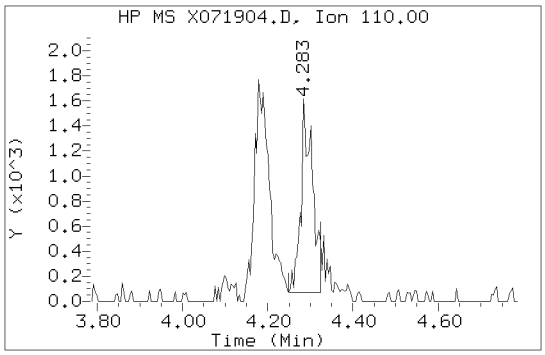
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BEFORE
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25-Jul-2022
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AFTER
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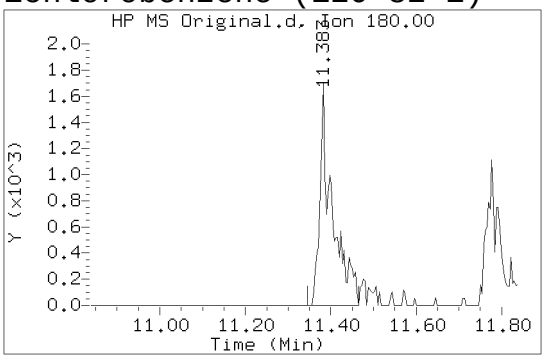
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Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

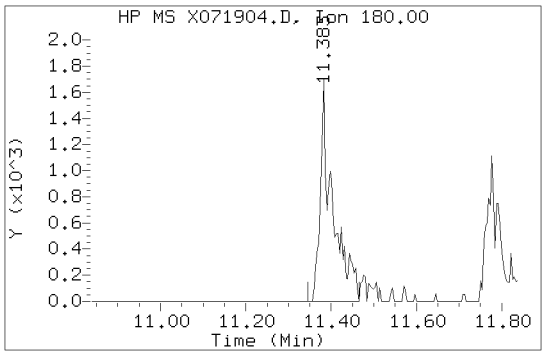
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09:00
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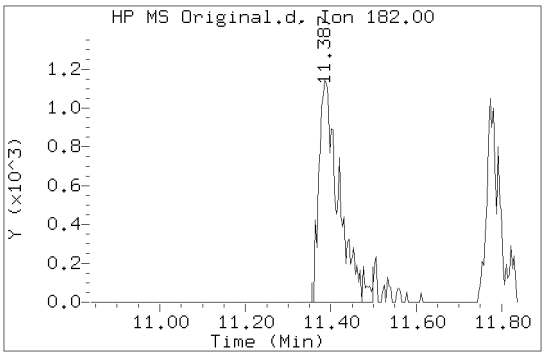
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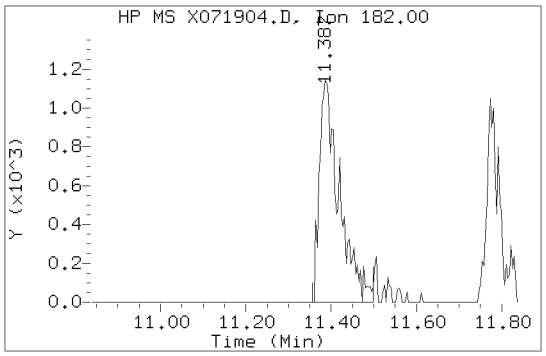
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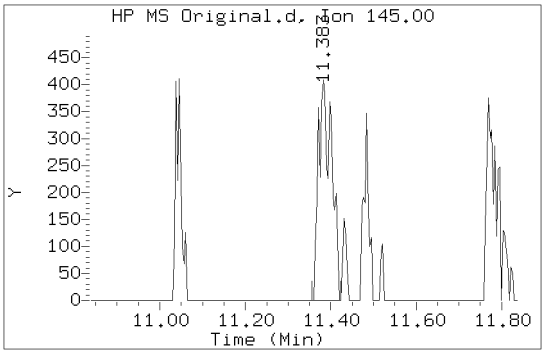
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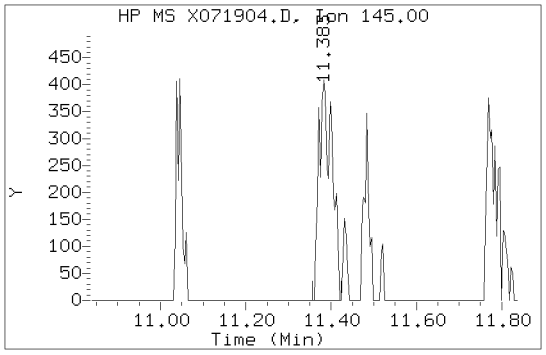
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AFTER

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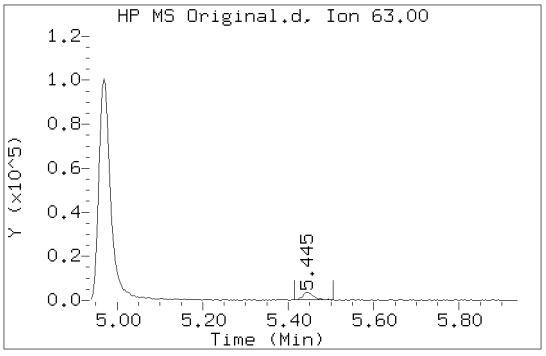


1,2-Dichloropropane (78-87-5)

Reason Code:

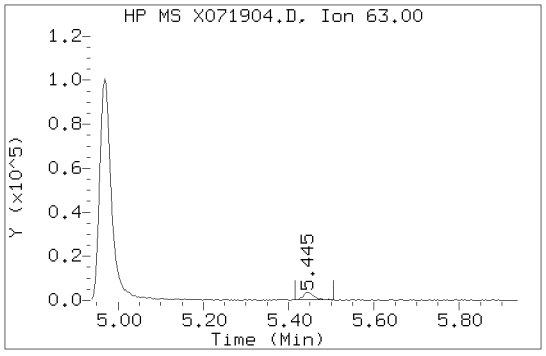
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AFTER

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19-Aug-2022
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linh
pham



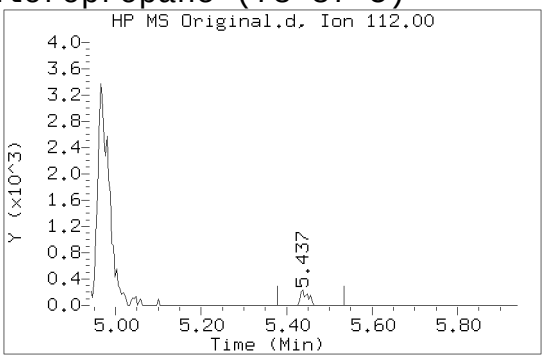
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dichloropropane (78-87-5)

Reason Code:

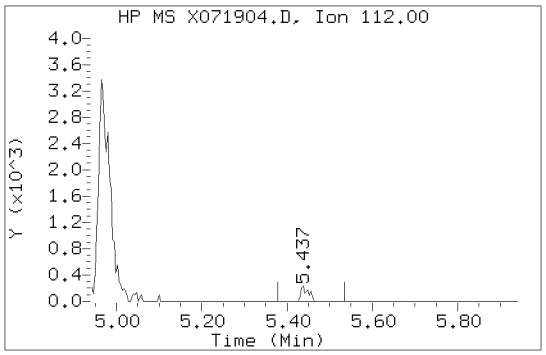
BEFORE

MASS
61
AREA
8277
HEIGHT
5006
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
289
HEIGHT
238
19-Aug-2022
10:59
linh
pham

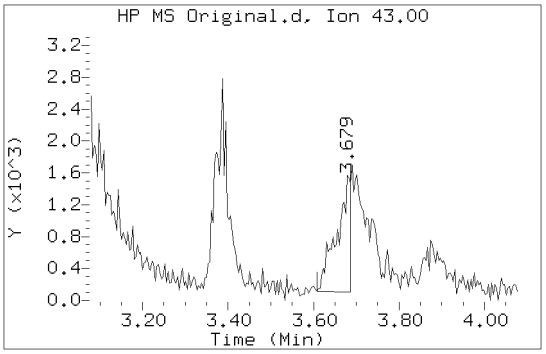


2-Butanone (78-93-3)

Reason Code:

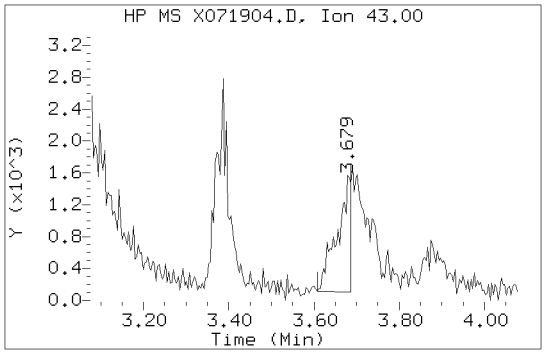
BEFORE

MASS
83
AREA
6777
HEIGHT
4379
25-Jul-2022
09:00
linh
pham



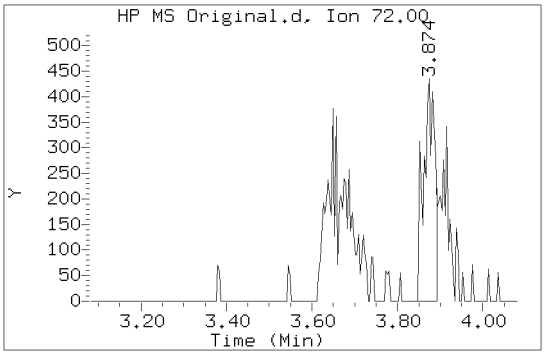
AFTER

MASS
43
AREA
3253
HEIGHT
1462
19-Aug-2022
10:59
linh
pham



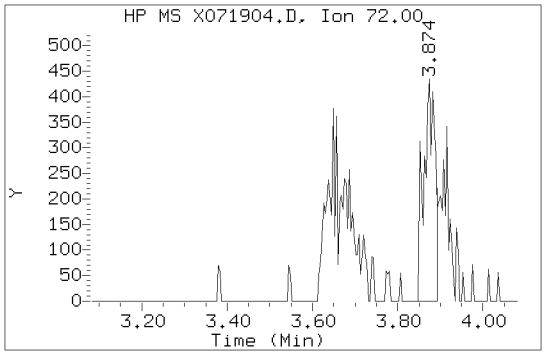
BEFORE

MASS
131
AREA
649
HEIGHT
716
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
797
HEIGHT
435
19-Aug-2022
10:59
linh
pham

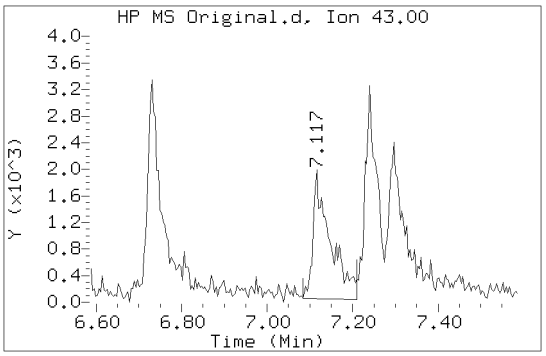


2-Hexanone (591-78-6)

Reason Code:

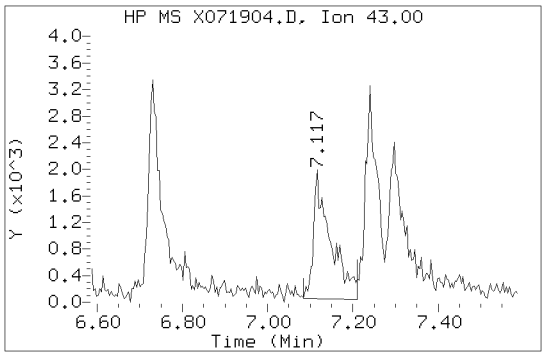
BEFORE

MASS
97
AREA
9877
HEIGHT
4344
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
5434
HEIGHT
1935
19-Aug-2022
10:59
linh
pham



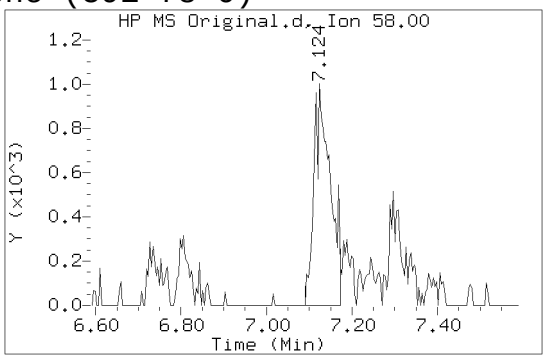
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

2-Hexanone (591-78-6)

Reason Code:

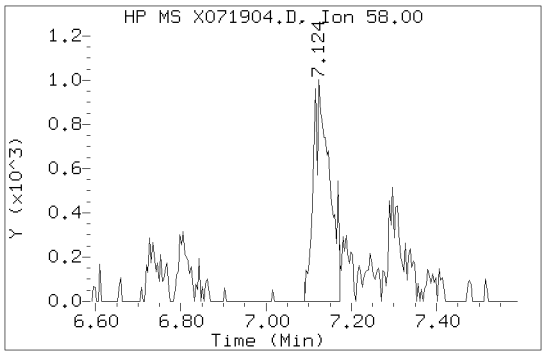
BEFORE

MASS
99
AREA
6792
HEIGHT
3028
25-Jul-2022
09:00
linh
pham



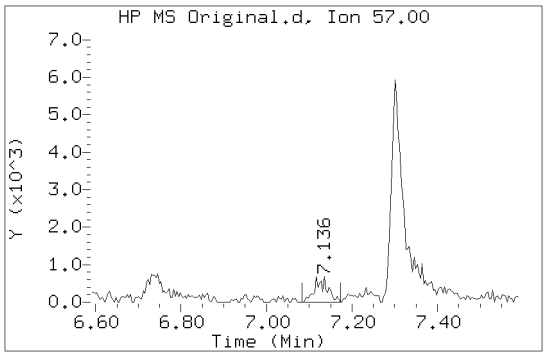
AFTER

MASS
58
AREA
2625
HEIGHT
1002
19-Aug-2022
10:59
linh
pham



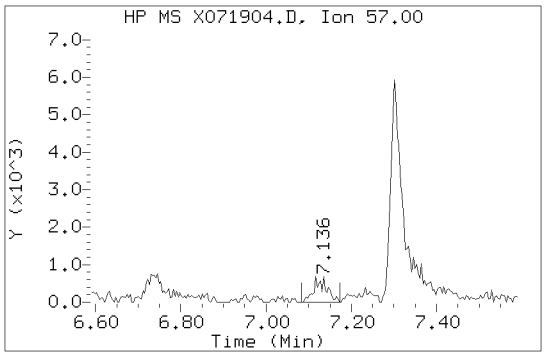
BEFORE

MASS
61
AREA
4664
HEIGHT
2056
25-Jul-2022
09:00
linh
pham



AFTER

MASS
57
AREA
1391
HEIGHT
685
19-Aug-2022
10:59
linh
pham

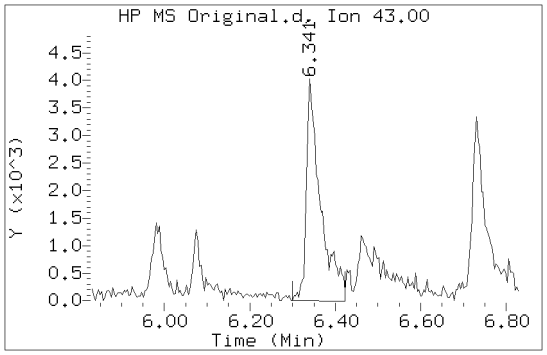


4-Methyl-2-Pentanone (108-10-1)

Reason Code:

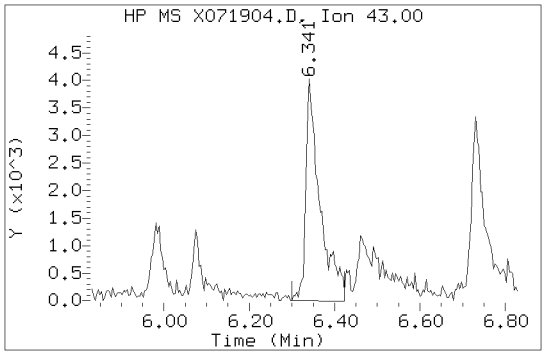
BEFORE

MASS
106
AREA
11062
HEIGHT
7011
25-Jul-2022
09:00
linh
pham



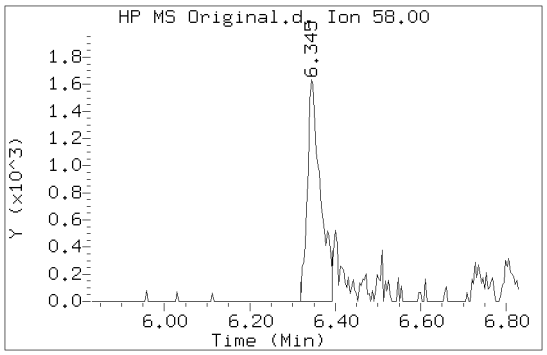
AFTER

MASS
43
AREA
9354
HEIGHT
4027
19-Aug-2022
10:59
linh
pham



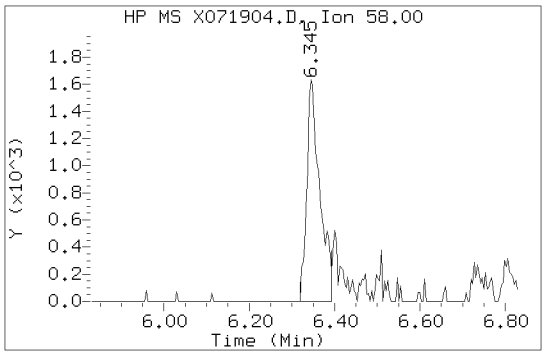
BEFORE

MASS
91
AREA
23370
HEIGHT
14388
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
3489
HEIGHT
1634
19-Aug-2022
10:59
linh
pham



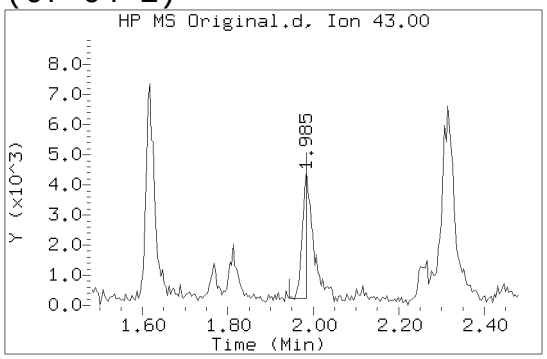
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Acetone (67-64-1)

Reason Code:

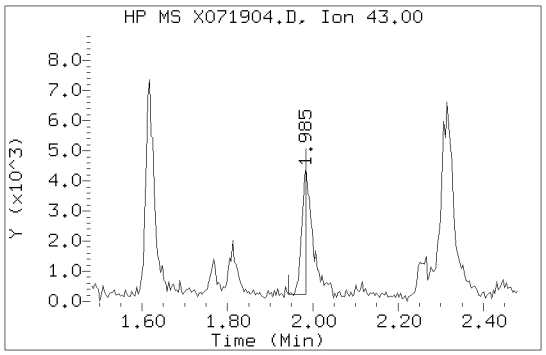
BEFORE

MASS
62
AREA
8192
HEIGHT
7615
25-Jul-2022
09:00
linh
pham



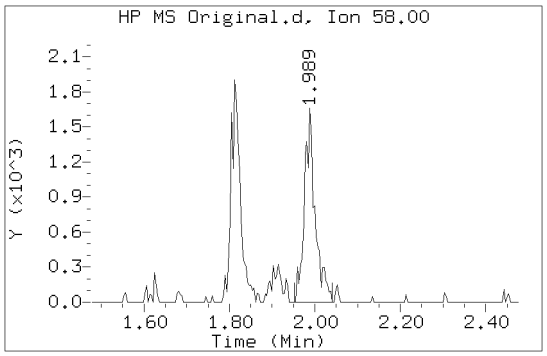
AFTER

MASS
43
AREA
3509
HEIGHT
4193
19-Aug-2022
10:59
linh
pham



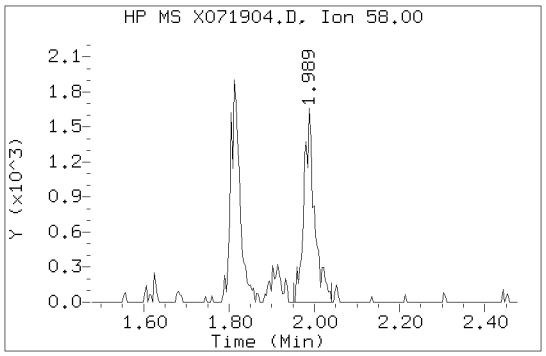
BEFORE

MASS
64
AREA
4092
HEIGHT
2828
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
2928
HEIGHT
1664
19-Aug-2022
10:59
linh
pham

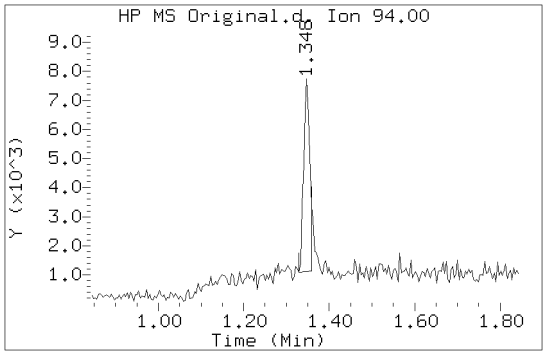


Bromomethane (74-83-9)

Reason Code:

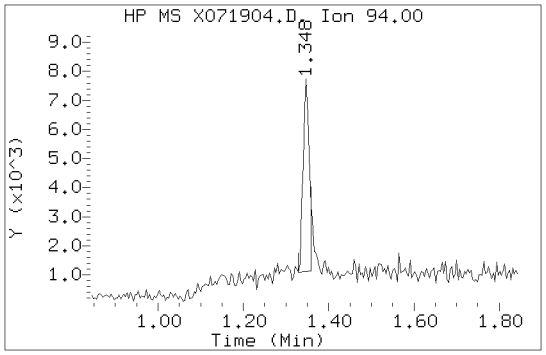
BEFORE

MASS
83
AREA
12942
HEIGHT
4946
25-Jul-2022
09:00
linh
pham



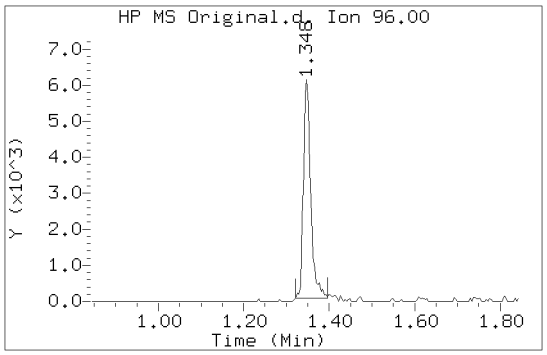
AFTER

MASS
94
AREA
6763
HEIGHT
6617
19-Aug-2022
10:59
linh
pham



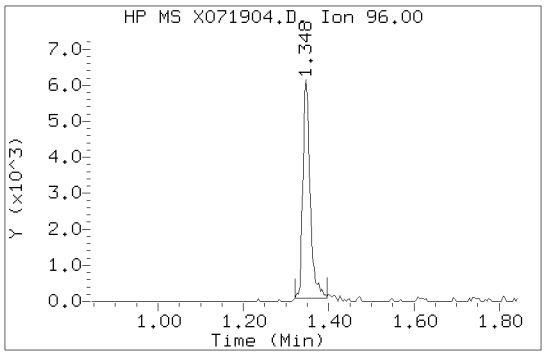
BEFORE

MASS
85
AREA
8582
HEIGHT
3366
25-Jul-2022
09:00
linh
pham



AFTER

MASS
96
AREA
7441
HEIGHT
6061
19-Aug-2022
10:59
linh
pham



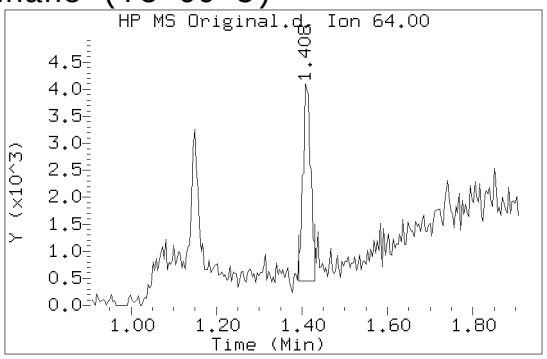
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Chloroethane (75-00-3)

Reason Code:

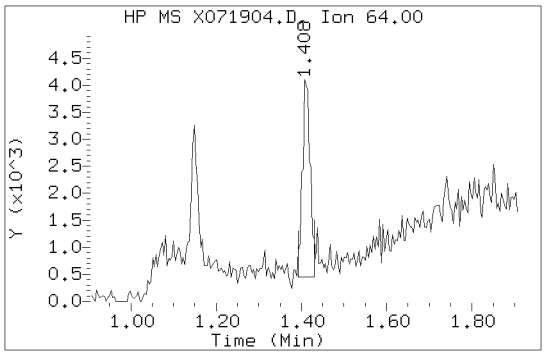
BEFORE

MASS
117
AREA
952128
HEIGHT
650496
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
4804
HEIGHT
3652
19-Aug-2022
10:59
linh
pham

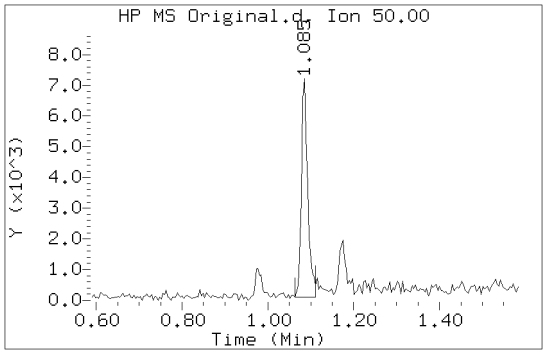


Chloromethane (74-87-3)

Reason Code:

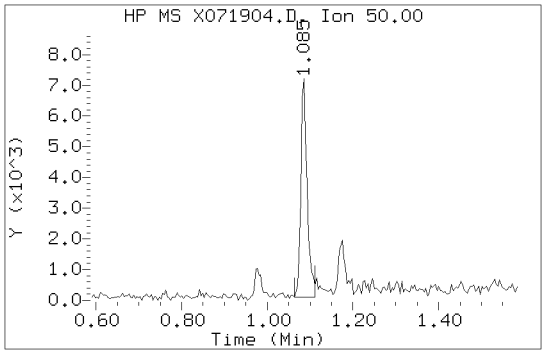
BEFORE

MASS
114
AREA
1046256
HEIGHT
538865
25-Jul-2022
09:00
linh
pham



AFTER

MASS
50
AREA
7297
HEIGHT
7110
19-Aug-2022
10:59
linh
pham

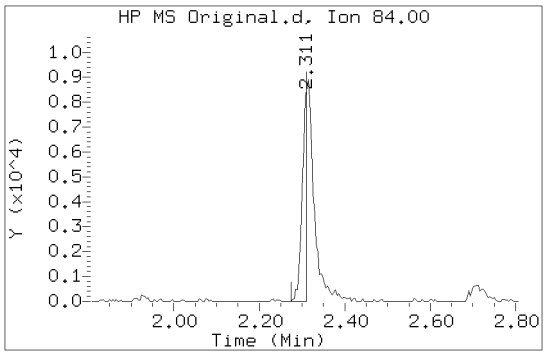


Methylene Chloride (75-09-2)

Reason Code:

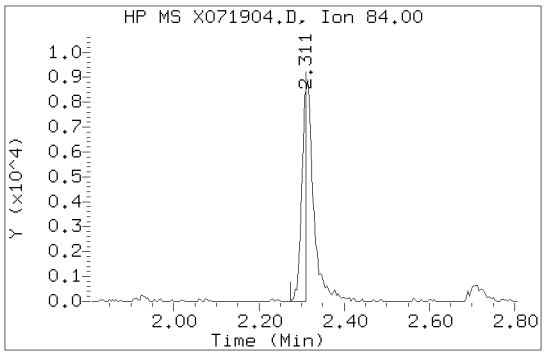
BEFORE

MASS
91
AREA
22202
HEIGHT
10908
25-Jul-2022
09:00
linh
pham



AFTER

MASS
84
AREA
7303
HEIGHT
8457
19-Aug-2022
10:59
linh
pham



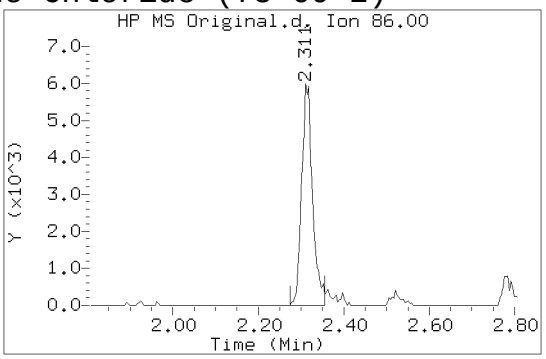
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Methylene Chloride (75-09-2)

Reason Code:

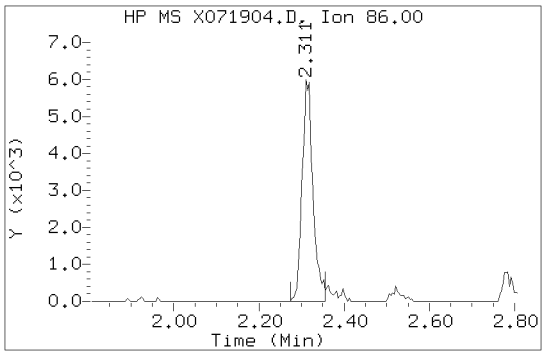
BEFORE

MASS
126
AREA
6411
HEIGHT
3382
25-Jul-2022
09:00
linh
pham



AFTER

MASS
86
AREA
10799
HEIGHT
5994
19-Aug-2022
10:59
linh
pham

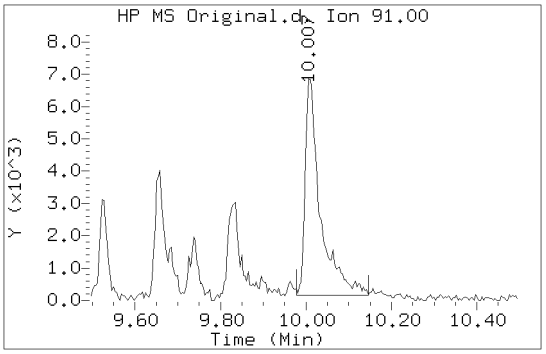


n-Butylbenzene (104-51-8)

Reason Code:

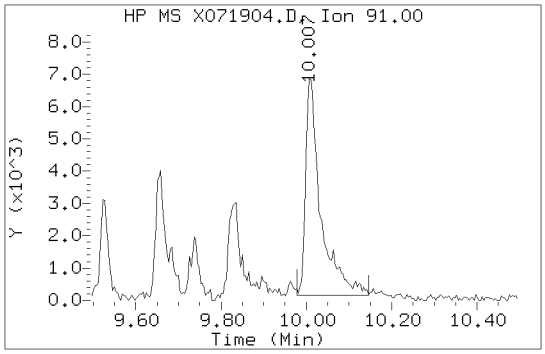
BEFORE

MASS
119
AREA
19169
HEIGHT
13613
25-Jul-2022
09:00
linh
pham



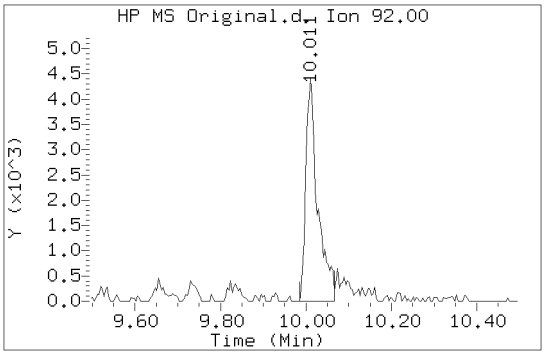
AFTER

MASS
91
AREA
16618
HEIGHT
6707
19-Aug-2022
10:59
linh
pham



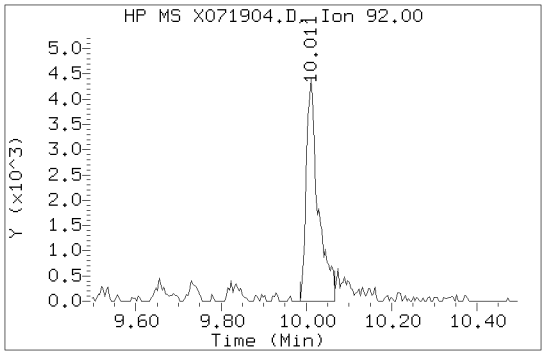
BEFORE

MASS
91
AREA
13199
HEIGHT
9373
25-Jul-2022
09:00
linh
pham



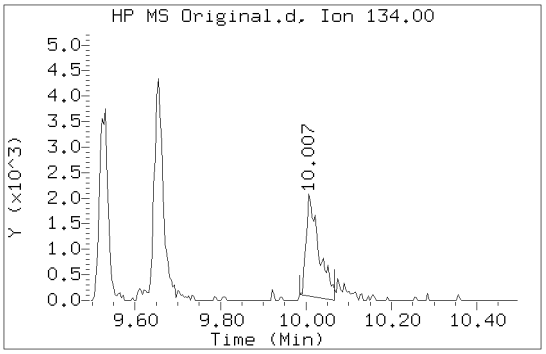
AFTER

MASS
92
AREA
8511
HEIGHT
4402
19-Aug-2022
10:59
linh
pham



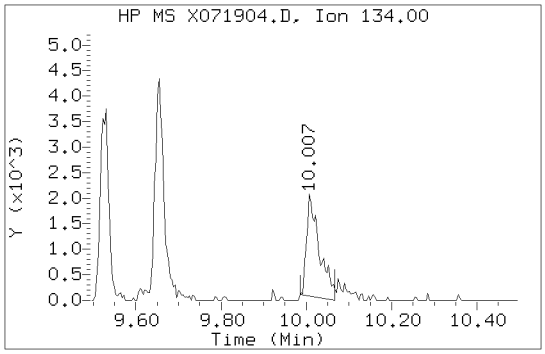
BEFORE

MASS
134
AREA
4688
HEIGHT
3532
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
4171
HEIGHT
1996
19-Aug-2022
10:59
linh
pham



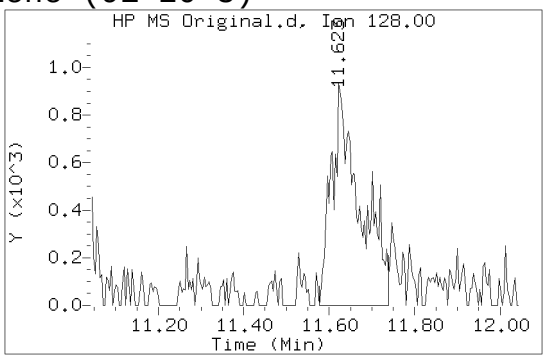
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Naphthalene (91-20-3)

Reason Code:

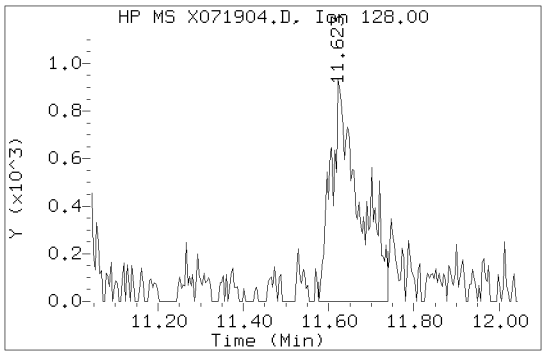
BEFORE

MASS
105
AREA
25764
HEIGHT
19832
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
4273
HEIGHT
932
19-Aug-2022
10:59
linh
pham

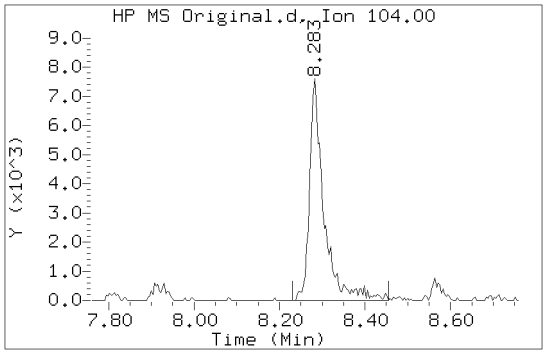


Styrene (100-42-5)

Reason Code:

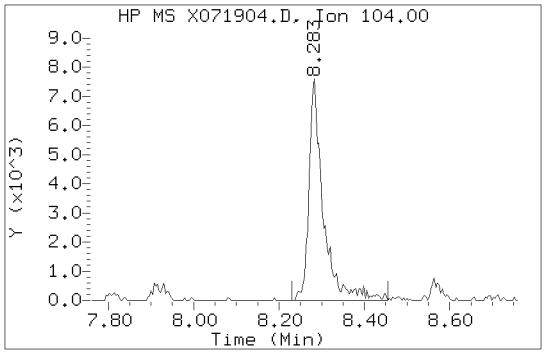
BEFORE

MASS
225
AREA
3610
HEIGHT
2711
25-Jul-2022
09:00
linh
pham



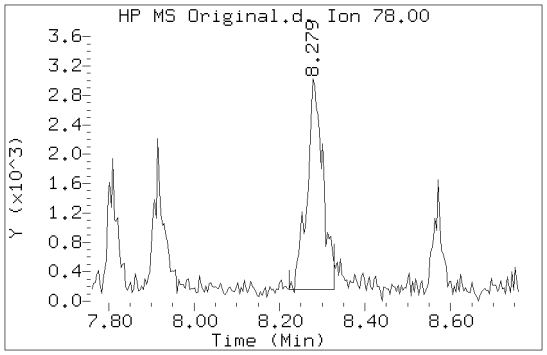
AFTER

MASS
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AREA
17705
HEIGHT
7602
19-Aug-2022
10:59
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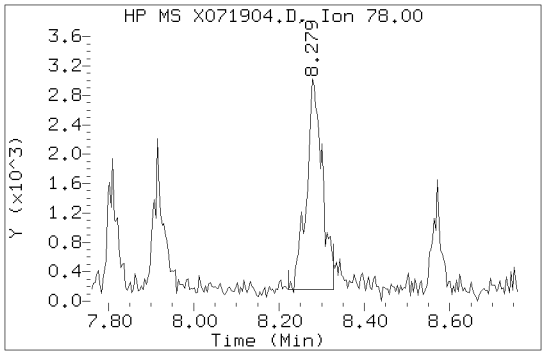
BEFORE

MASS
223
AREA
2686
HEIGHT
2055
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
7412
HEIGHT
2867
19-Aug-2022
10:59
linh
pham

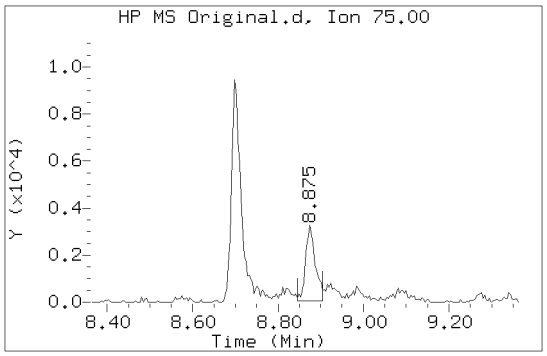


1,2,3-Trichloropropane (96-18-4)

Reason Code:

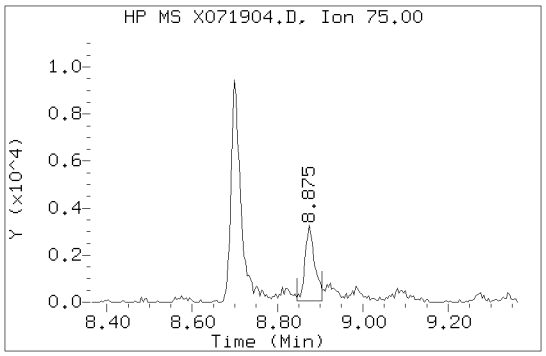
BEFORE

MASS
180
AREA
2063
HEIGHT
1112
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
5208
HEIGHT
3218
19-Aug-2022
10:59
linh
pham



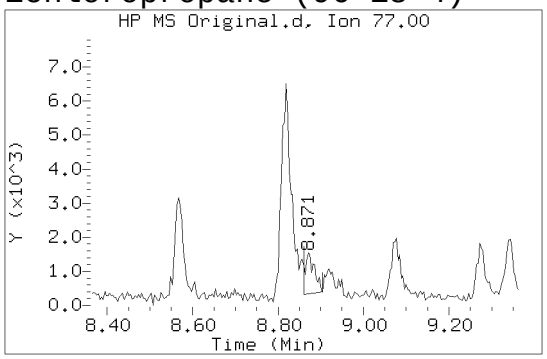
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Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2,3-Trichloropropane (96-18-4)

Reason Code:

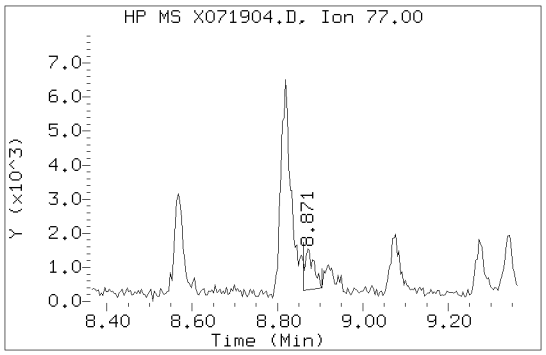
BEFORE

MASS
182
AREA
2188
HEIGHT
1051
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
1868
HEIGHT
1205
19-Aug-2022
10:59
linh
pham

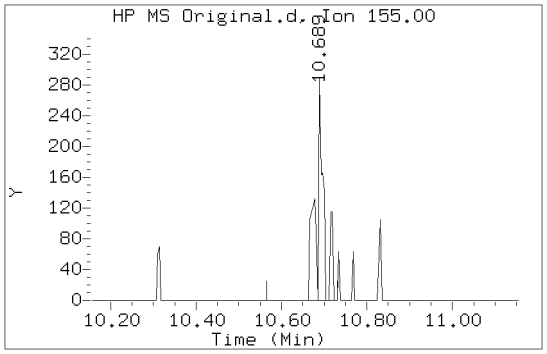


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

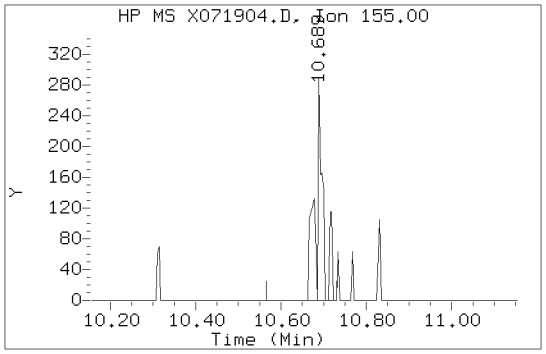
BEFORE

MASS
73
AREA
18285
HEIGHT
11966
25-Jul-2022
09:00
linh
pham



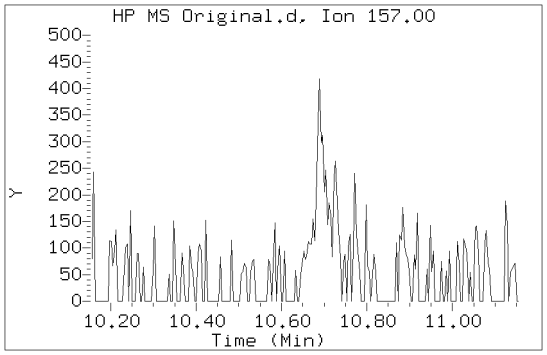
AFTER

MASS
155
AREA
348
HEIGHT
288
19-Aug-2022
10:59
linh
pham



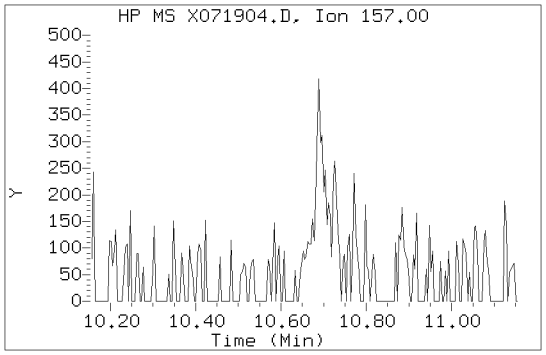
BEFORE

MASS
57
AREA
17060
HEIGHT
6448
25-Jul-2022
09:00
linh
pham



AFTER

MASS
157
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

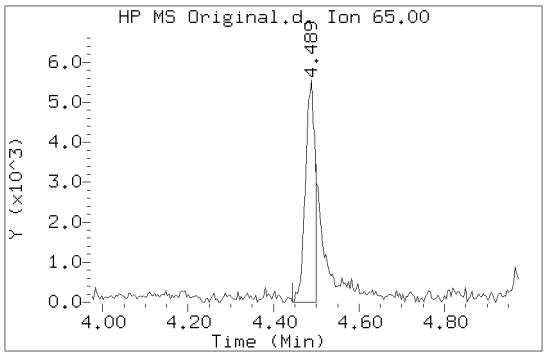


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

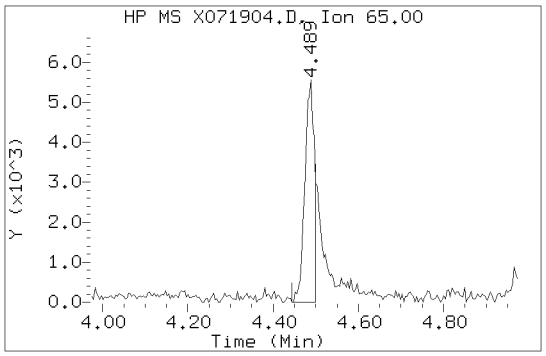
BEFORE

MASS
113
AREA
9308
HEIGHT
5059
25-Jul-2022
09:00
linh
pham



AFTER

MASS
65
AREA
8675
HEIGHT
5560
19-Aug-2022
10:59
linh
pham



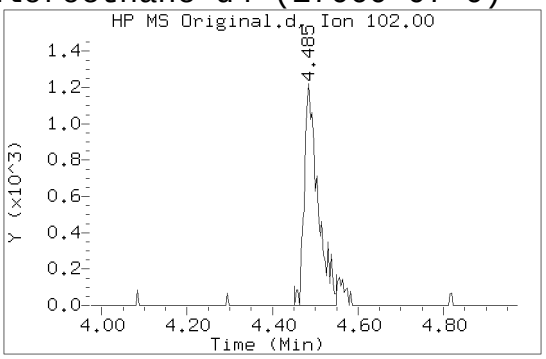
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Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

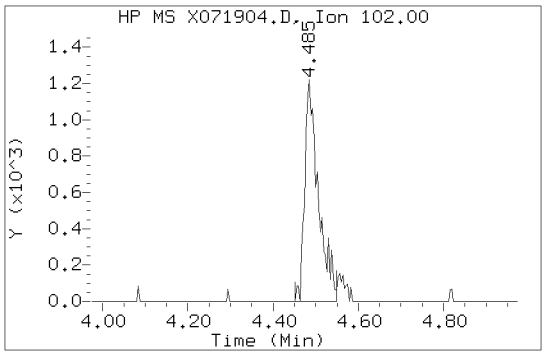
BEFORE

MASS
111
AREA
12165
HEIGHT
5300
25-Jul-2022
09:00
linh
pham



AFTER

MASS
102
AREA
2723
HEIGHT
1221
19-Aug-2022
10:59
linh
pham

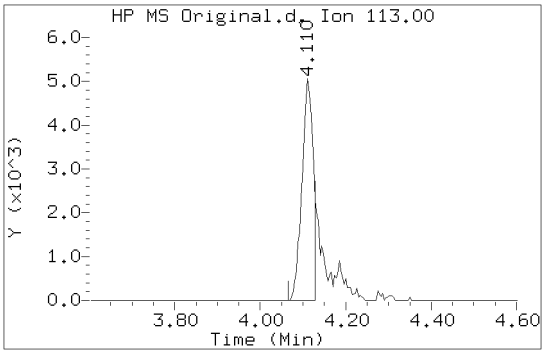


Dibromofluoromethane (1868-53-7)

Reason Code:

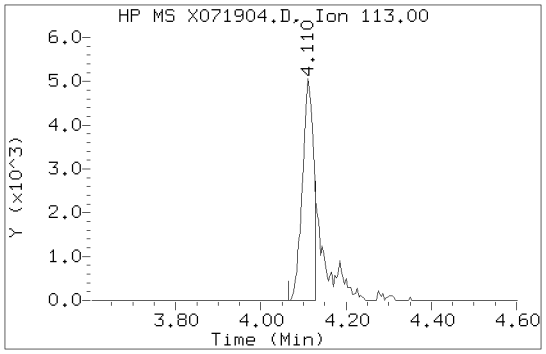
BEFORE

MASS
98
AREA
23913
HEIGHT
24224
25-Jul-2022
09:00
linh
pham



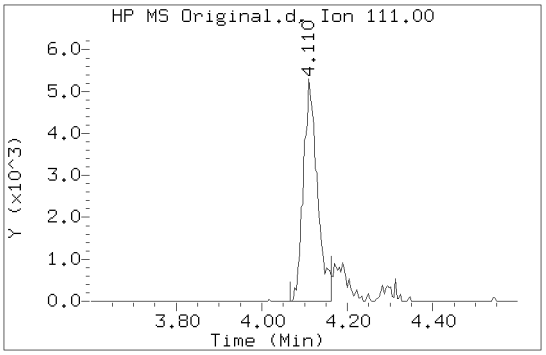
AFTER

MASS
113
AREA
9308
HEIGHT
5059
19-Aug-2022
10:59
linh
pham



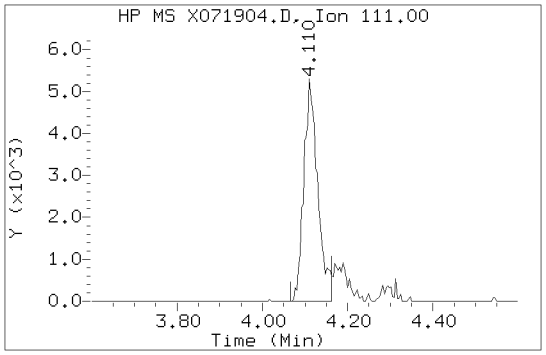
BEFORE

MASS
99
AREA
4207
HEIGHT
2158
25-Jul-2022
09:00
linh
pham



AFTER

MASS
111
AREA
12165
HEIGHT
5300
19-Aug-2022
10:59
linh
pham

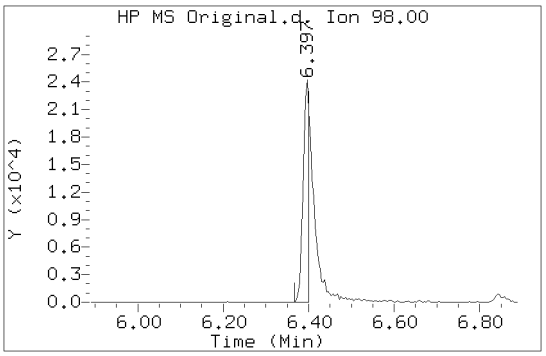


Toluene-d8 (2037-26-5)

Reason Code:

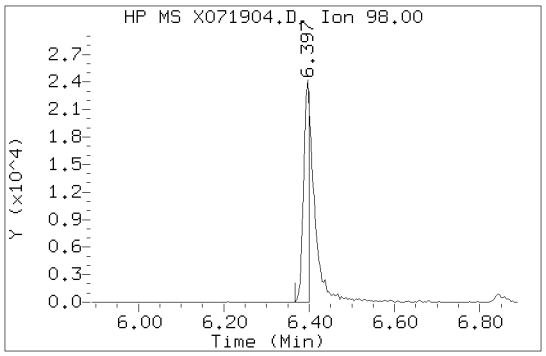
BEFORE

MASS
65
AREA
8675
HEIGHT
5560
25-Jul-2022
09:00
linh
pham



AFTER

MASS
98
AREA
23913
HEIGHT
24224
19-Aug-2022
10:59
linh
pham



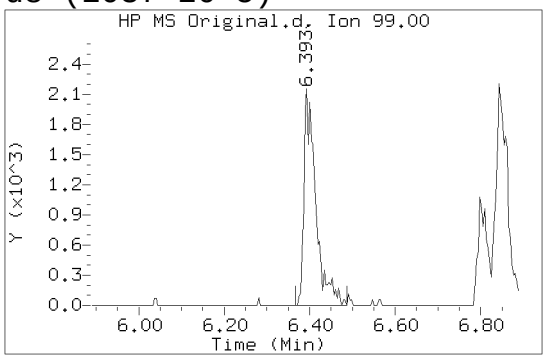
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Toluene-d8 (2037-26-5)

Reason Code:

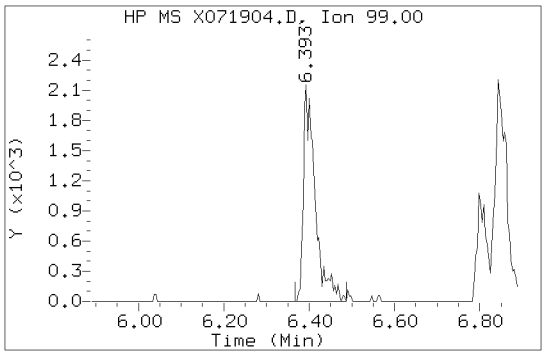
BEFORE

MASS
102
AREA
2723
HEIGHT
1221
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
4207
HEIGHT
2158
19-Aug-2022
10:59
linh
pham

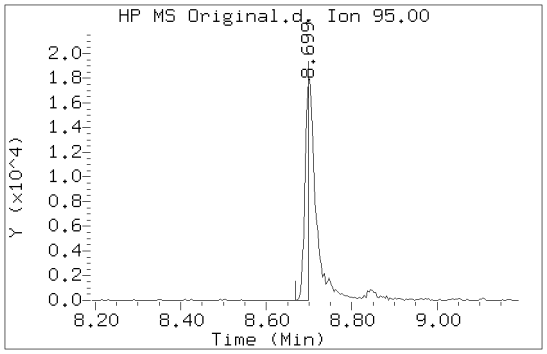


4-Bromofluorobenzene (460-00-4)

Reason Code:

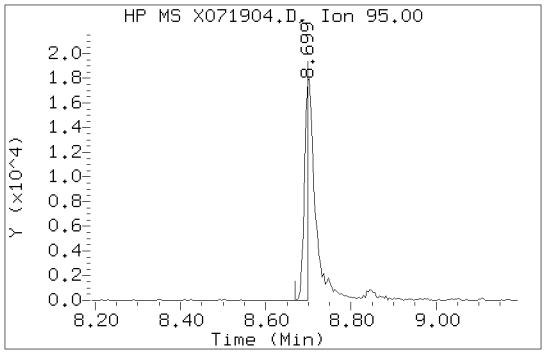
BEFORE

MASS
95
AREA
11894
HEIGHT
17792
25-Jul-2022
09:00
linh
pham



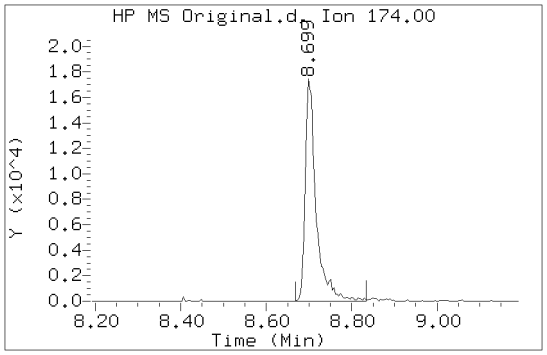
AFTER

MASS
95
AREA
11894
HEIGHT
17792
19-Aug-2022
10:59
linh
pham



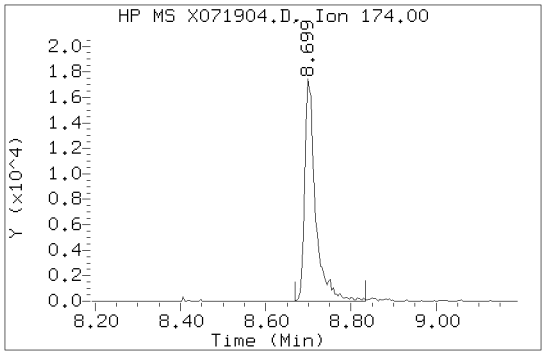
BEFORE

MASS
174
AREA
31362
HEIGHT
17448
25-Jul-2022
09:00
linh
pham



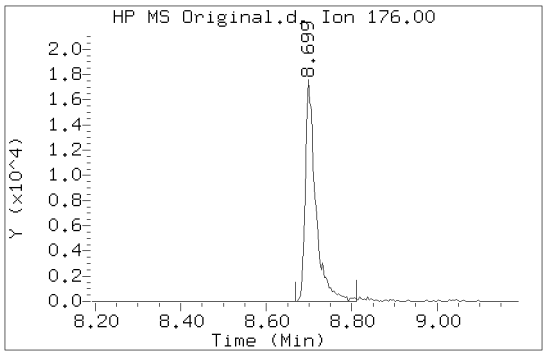
AFTER

MASS
174
AREA
31362
HEIGHT
17448
19-Aug-2022
10:59
linh
pham



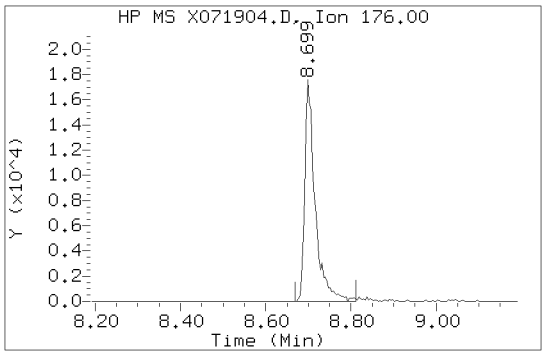
BEFORE

MASS
176
AREA
30039
HEIGHT
17592
25-Jul-2022
09:00
linh
pham



AFTER

MASS
176
AREA
30039
HEIGHT
17592
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
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Inj Date : 19-JUL-2022 12:50
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 12:29 Cal File: X071904.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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

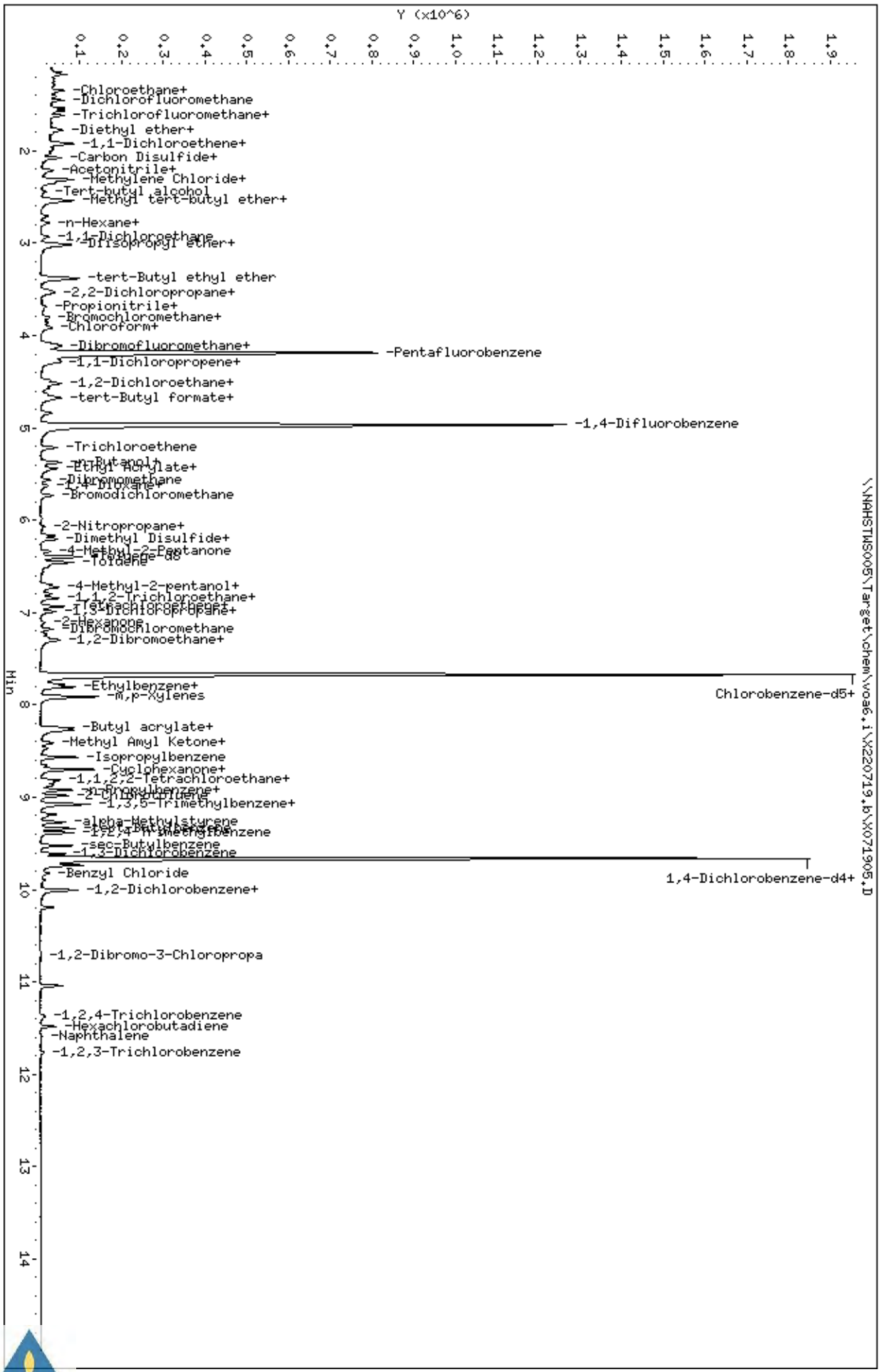
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.185	4.185	(1.000)	749096	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1092048	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	978384	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	454442	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	18364	2.00000	1.90(a)
$ 35 1,2-Dichloroethane-d4	65	4.481	4.481	(1.071)	15130	2.00000	1.63(aM)
$ 48 Toluene-d8	98	6.397	6.397	(0.834)	53011	2.00000	2.17(aM)
$ 69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	19061	2.00000	1.39(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	11843	2.00000	1.72(aM)
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.978)	18665	2.00000	1.75(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	11877	2.00000	1.86(a)
53 1,1,2-Trichloroethane	83	6.846	6.846	(0.893)	9847	2.00000	1.95(a)
22 1,1-Dichloroethane	63	2.937	2.937	(0.702)	21717	2.00000	1.88(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	11822	2.00000	1.89(a)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	15792	2.00000	1.79(a)
93 1,2,3-Trichlorobenzene	180	11.765	11.765	(1.217)	4350	2.00000	1.84(aM)
71 1,2,3-Trichloropropane	75	8.874	8.874	(0.918)	9920	2.00000	2.01(aM)
90 1,2,4-Trichlorobenzene	180	11.367	11.367	(1.176)	7590	2.00000	1.83(aM)
79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	39752	2.00000	1.82(a)
89 1,2-Dibromo-3-Chloropropane	155	10.719	10.719	(1.109)	994	2.00000	2.52(aM)

57 1,2-Dibromoethane	107	7.266	7.266 (0.947)	11493	2.00000	1.80(a)
88 1,2-Dichlorobenzene	146	10.003	10.003 (1.035)	21378	2.00000	1.88(a)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.571	4.571	(0.920)	18694	2.00000	1.95(a)
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	12652	2.00000	1.88(aM)
75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	40980	2.00000	1.85(a)
83	1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	23262	2.00000	1.84(a)
54	1,3-Dichloropropane	76	6.989	6.989	(0.911)	18638	2.00000	1.82(a)
84	1,4-Dichlorobenzene	146	9.688	9.688	(1.002)	27562	2.00000	2.05(a)
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	20343	2.00000	1.74(a)
24	2-Butanone	43	3.675	3.675	(0.878)	7321	4.00000	3.89(aM)
76	2-Chlorotoluene	91	8.979	8.979	(0.929)	37863	2.00000	1.94(aM)
52	2-Hexanone	43	7.105	7.105	(0.926)	11235	4.00000	3.65(aM)
77	4-Chlorotoluene	91	9.081	9.081	(0.940)	40205	2.00000	1.84(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	37293	2.00000	1.68(a)
45	4-Methyl-2-Pentanone	43	6.340	6.340	(0.827)	17683	4.00000	3.70(a)
10	Acetone	43	1.981	1.981	(0.473)	7337	4.00000	(aM)
37	Benzene	78	4.519	4.519	(0.909)	48445	2.00000	1.87(a)
74	Bromobenzene	156	8.815	8.815	(0.912)	14765	2.00000	1.90(a)
29	Bromochloromethane	128	3.799	3.799	(0.908)	7950	2.00000	1.88(a)
39	Bromodichloromethane	83	5.733	5.733	(1.154)	16875	2.00000	1.82(a)
66	Bromoform	173	8.417	8.417	(1.097)	7169	2.00000	2.70(TaM)
6	Bromomethane	94	1.347	1.347	(0.322)	13133	2.00000	1.26(aM)
19	Carbon Disulfide	76	2.078	2.078	(0.497)	59291	4.00000	3.58(a)
34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	17025	2.00000	1.80(aMH)
59	Chlorobenzene	112	7.697	7.697	(1.003)	35149	2.00000	1.89(a)
7	Chloroethane	64	1.411	1.411	(0.337)	9295	2.00000	1.93(a)
28	Chloroform	83	3.919	3.919	(0.936)	22862	2.00000	1.80(a)
3	Chloromethane	50	1.085	1.085	(0.259)	13594	2.00000	2.01(a)
27	cis-1,2-Dichloroethene	96	3.544	3.544	(0.847)	12905	2.00000	1.73(a)
46	cis-1,3-Dichloropropene	75	6.164	6.164	(1.241)	20286	2.00000	1.79(aM)
55	Dibromochloromethane	129	7.180	7.180	(0.936)	13652	2.00000	1.87(a)
44	Dibromomethane	93	5.564	5.564	(1.120)	8339	2.00000	1.84(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	12732	2.00000	1.61(a)
61	Ethylbenzene	106	7.806	7.806	(1.018)	16956	2.00000	1.80(a)
91	Hexachlorobutadiene	225	11.484	11.484	(1.188)	6994	2.00000	1.82(aM)
67	Isopropylbenzene	105	8.567	8.567	(1.117)	50981	2.00000	1.80(a)
62	m,p-Xylenes	106	7.911	7.911	(1.031)	44013	4.00000	3.77(aM)
17	Methylene Chloride	84	2.311	2.311	(0.552)	16740	2.00000	1.59(aM)
87	n-Butylbenzene	91	10.007	10.007	(1.035)	31547	2.00000	1.71(aM)
73	n-Propylbenzene	91	8.919	8.919	(0.923)	53786	2.00000	1.79(a)
92	Naphthalene	128	11.592	11.592	(1.199)	8600	2.00000	1.85(aM)
63	o-Xylene	106	8.248	8.248	(1.075)	20993	2.00000	1.85(aM)
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	46135	2.00000	1.80(a)
64	Styrene	104	8.271	8.271	(1.078)	32495	2.00000	1.74(aM)
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	33676	2.00000	1.80(a)
56	Tetrachloroethene	164	6.933	6.933	(0.904)	11817	2.00000	1.86(a)
50	Toluene	91	6.457	6.457	(0.842)	51658	2.00000	1.87(a)
20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	11820	2.00000	1.79(aM)
51	trans-1,3-Dichloropropene	75	6.697	6.697	(1.348)	17450	2.00000	1.85(aM)
38	Trichloroethene	130	5.216	5.216	(1.050)	14143	2.00000	1.84(a)
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	22137	2.00000	1.87(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	14813	2.00000	1.88(a)

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.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Date : 19-JUL-2022 12:50
Client ID: VSTD002
Sample Info: VSTD002;VSTD0021:1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

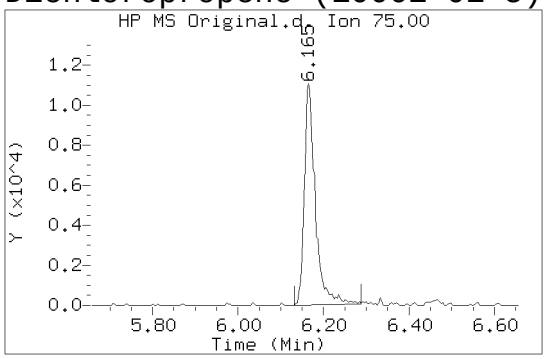
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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

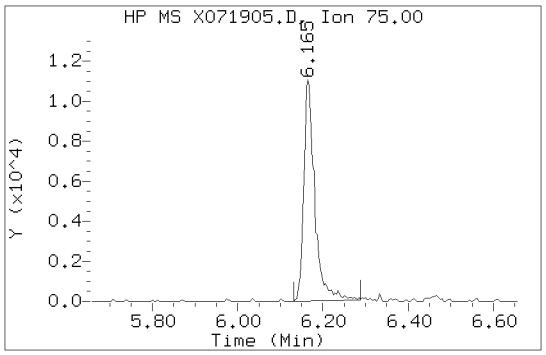
BEFORE

MASS
128
AREA
7950
HEIGHT
3264
25-Jul-2022
09:00
linh
pham



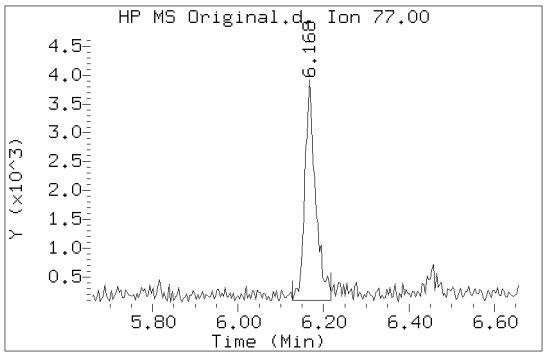
AFTER

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AREA
20286
HEIGHT
11063
19-Aug-2022
10:59
linh
pham



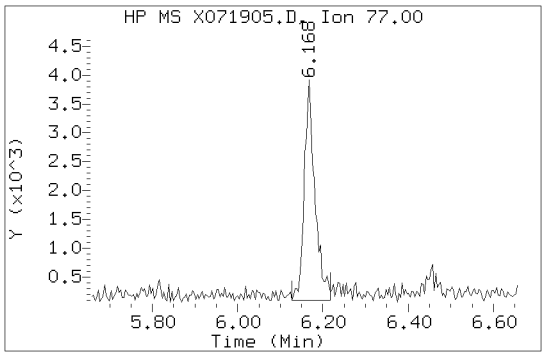
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49
AREA
10115
HEIGHT
4742
25-Jul-2022
09:00
linh
pham



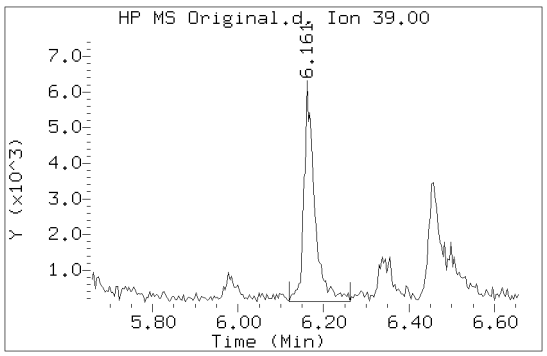
AFTER

MASS
77
AREA
6769
HEIGHT
3822
19-Aug-2022
10:59
linh
pham



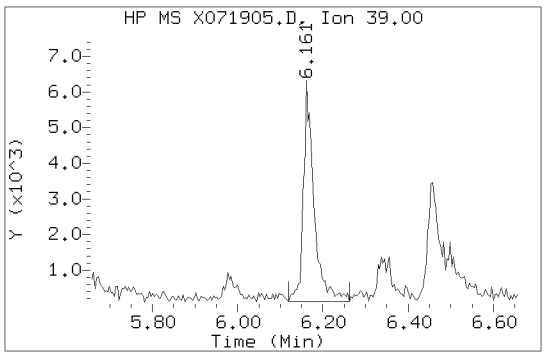
BEFORE

MASS
130
AREA
9849
HEIGHT
3928
25-Jul-2022
09:00
linh
pham



AFTER

MASS
39
AREA
10962
HEIGHT
6193
19-Aug-2022
10:59
linh
pham

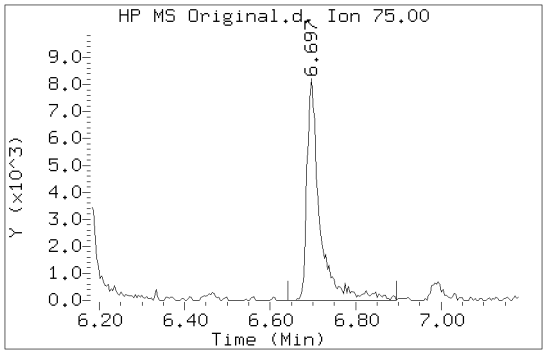


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

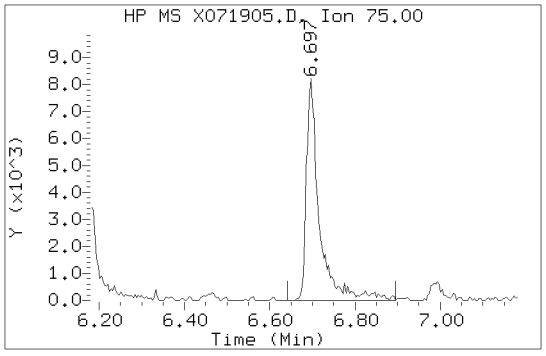
BEFORE

MASS
43
AREA
7321
HEIGHT
2938
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
17450
HEIGHT
8215
19-Aug-2022
10:59
linh
pham

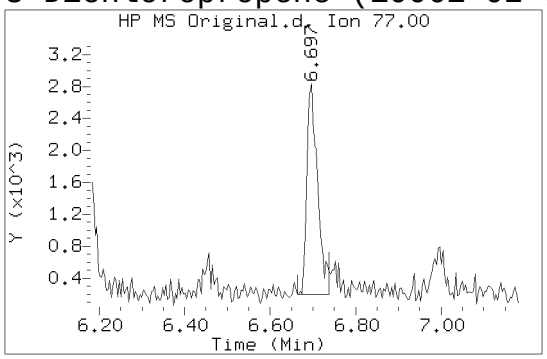


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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

trans-1,3-Dichloropropene (10061-02-6)

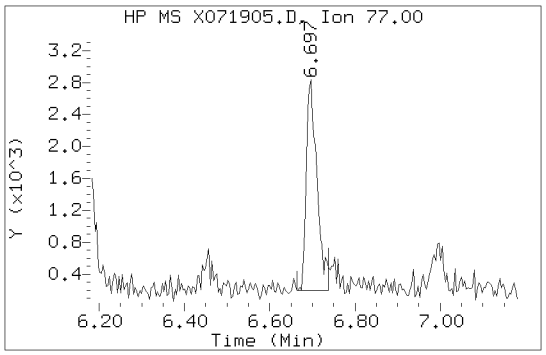
Reason Code:

BEFORE



MASS
72
AREA
1160
HEIGHT
768
25-Jul-2022
09:00
linh
pham

AFTER

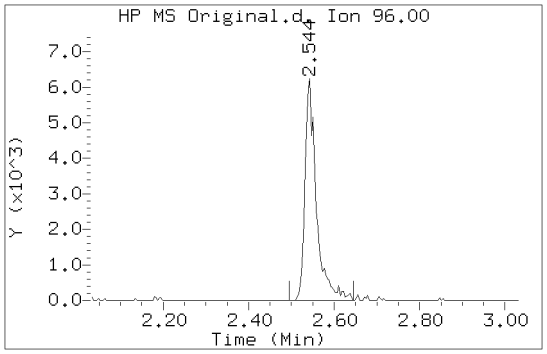


MASS
77
AREA
4630
HEIGHT
2637
19-Aug-2022
10:59
linh
pham

trans-1,2-Dichloroethene (156-60-5)

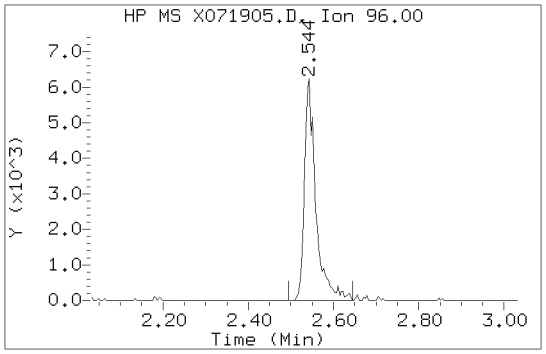
Reason Code:

BEFORE



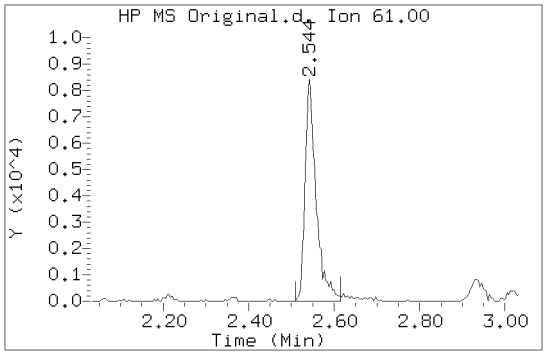
MASS
129
AREA
13652
HEIGHT
8676
25-Jul-2022
09:00
linh
pham

AFTER



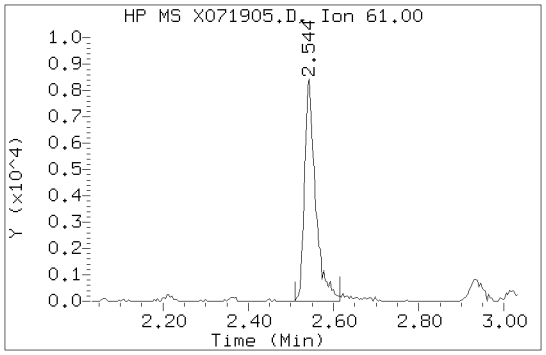
MASS
96
AREA
11820
HEIGHT
6241
19-Aug-2022
10:59
linh
pham

BEFORE



MASS
127
AREA
9867
HEIGHT
6422
25-Jul-2022
09:00
linh
pham

AFTER

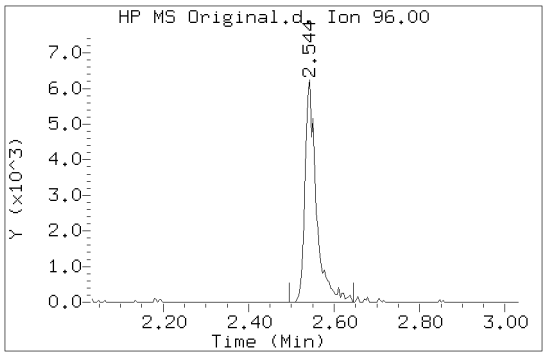


MASS
61
AREA
15499
HEIGHT
8443
19-Aug-2022
10:59
linh
pham

1,1,1,2-Tetrachloroethane (630-20-6)

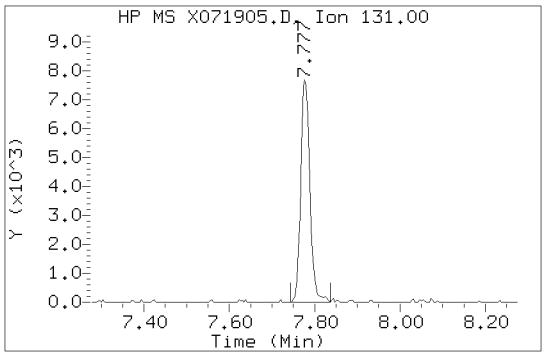
Reason Code:

BEFORE



MASS
43
AREA
17683
HEIGHT
8385
25-Jul-2022
09:00
linh
pham

AFTER



MASS
131
AREA
11843
HEIGHT
7685
19-Aug-2022
10:59
linh
pham

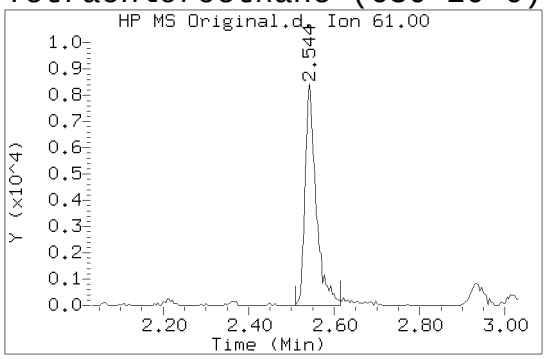
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

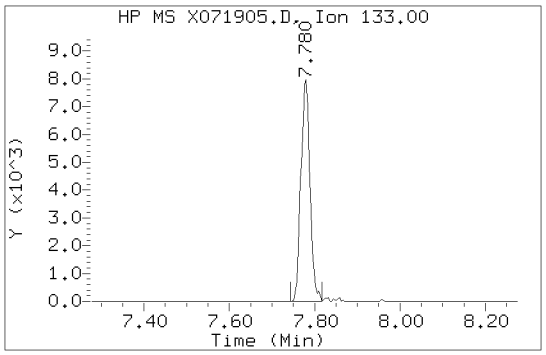
BEFORE

MASS
58
AREA
6197
HEIGHT
3721
25-Jul-2022
09:00
linh
pham



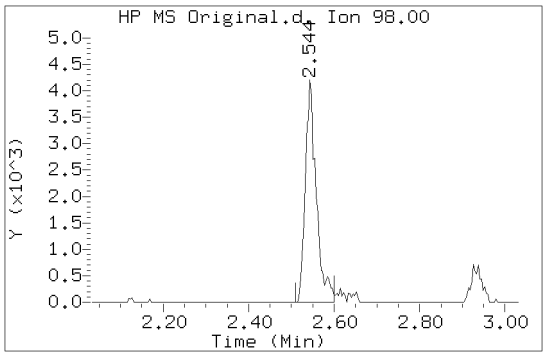
AFTER

MASS
133
AREA
12135
HEIGHT
7970
19-Aug-2022
10:59
linh
pham



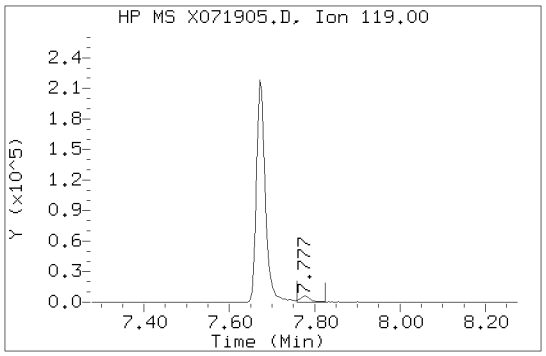
BEFORE

MASS
100
AREA
2577
HEIGHT
1669
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
9417
HEIGHT
5791
19-Aug-2022
10:59
linh
pham

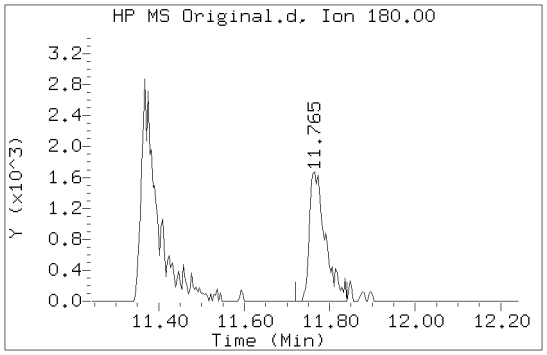


1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

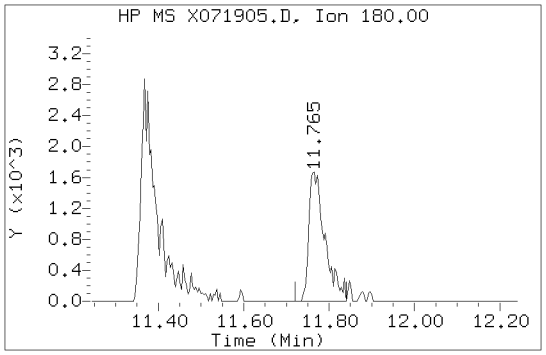
BEFORE

MASS
77
AREA
20343
HEIGHT
7624
25-Jul-2022
09:00
linh
pham



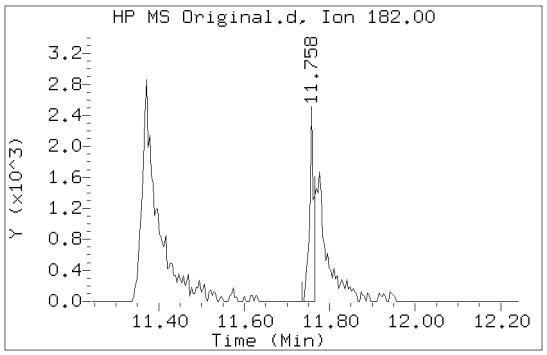
AFTER

MASS
180
AREA
4350
HEIGHT
1674
19-Aug-2022
10:59
linh
pham



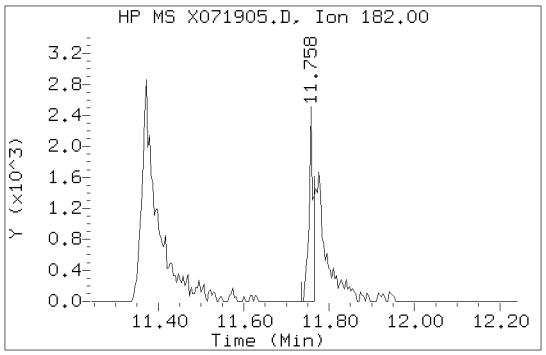
BEFORE

MASS
97
AREA
4262
HEIGHT
1855
25-Jul-2022
09:00
linh
pham



AFTER

MASS
182
AREA
1686
HEIGHT
2516
19-Aug-2022
10:59
linh
pham

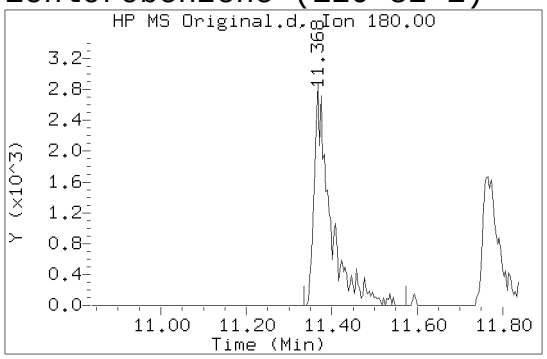


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

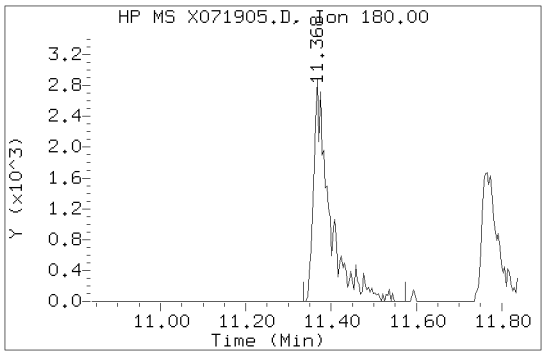
1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

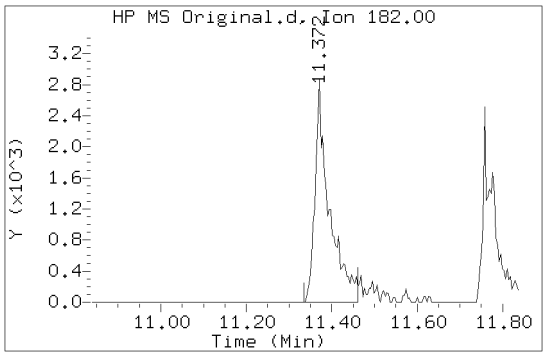
BEFORE
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HEIGHT
4545
25-Jul-2022
09:00
linh
pham



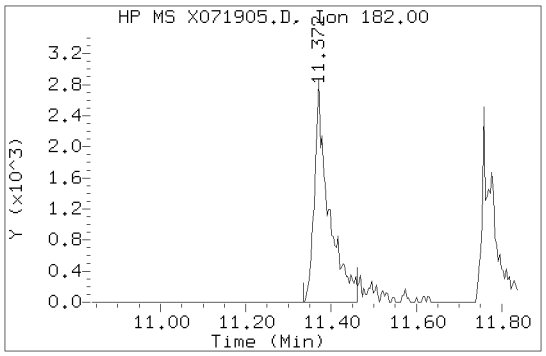
AFTER
MASS
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AREA
7590
HEIGHT
2875
19-Aug-2022
10:59
linh
pham



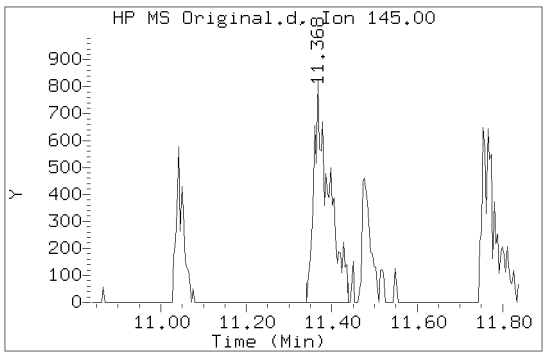
BEFORE
MASS
95
AREA
6507
HEIGHT
3494
25-Jul-2022
09:00
linh
pham



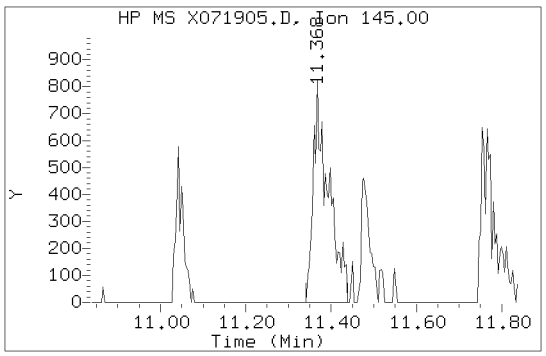
AFTER
MASS
182
AREA
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HEIGHT
2861
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
174
AREA
9376
HEIGHT
4902
25-Jul-2022
09:00
linh
pham



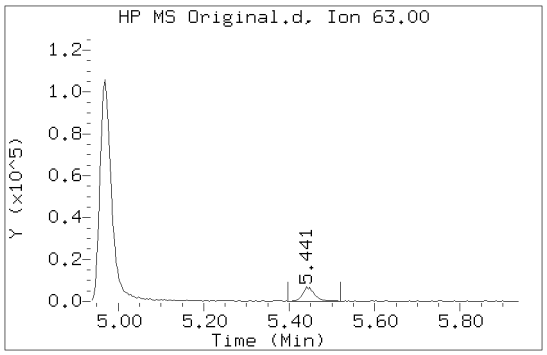
AFTER
MASS
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1993
HEIGHT
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19-Aug-2022
10:59
linh
pham



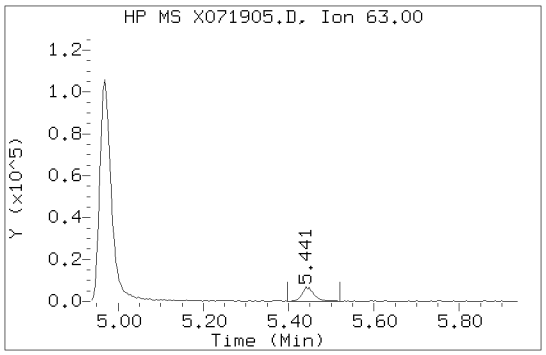
1,2-Dichloropropane (78-87-5)

Reason Code:

BEFORE
MASS
96
AREA
11820
HEIGHT
6241
25-Jul-2022
09:00
linh
pham



AFTER
MASS
63
AREA
12652
HEIGHT
7049
19-Aug-2022
10:59
linh
pham



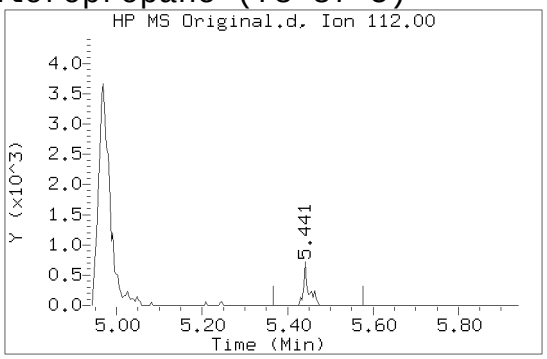
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloropropane (78-87-5)

Reason Code:

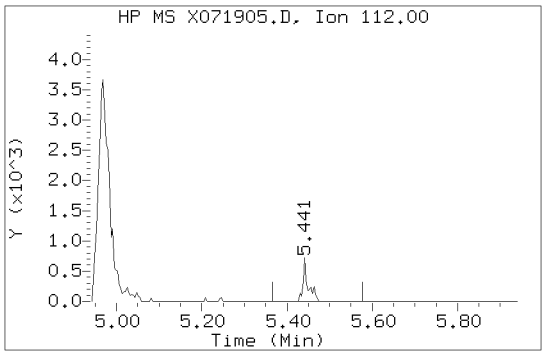
BEFORE

MASS
61
AREA
15499
HEIGHT
8443
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
621
HEIGHT
722
19-Aug-2022
10:59
linh
pham

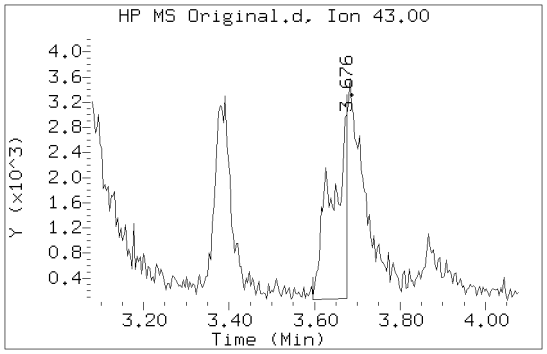


2-Butanone (78-93-3)

Reason Code:

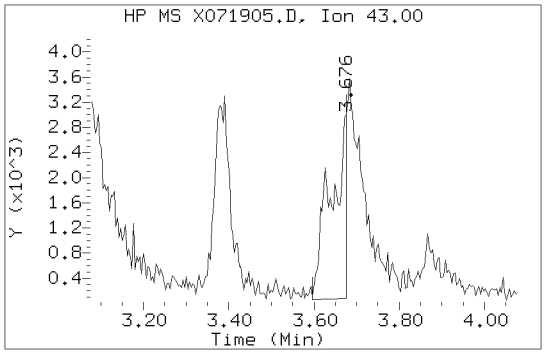
BEFORE

MASS
83
AREA
11877
HEIGHT
7406
25-Jul-2022
09:00
linh
pham



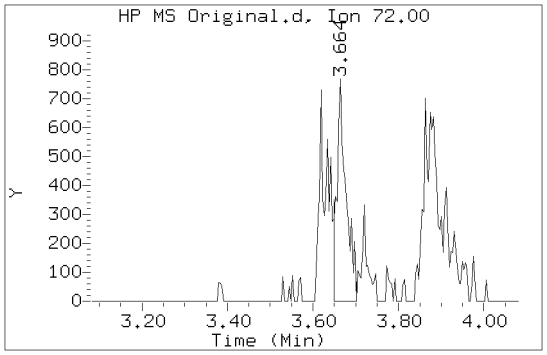
AFTER

MASS
43
AREA
7321
HEIGHT
2938
19-Aug-2022
10:59
linh
pham



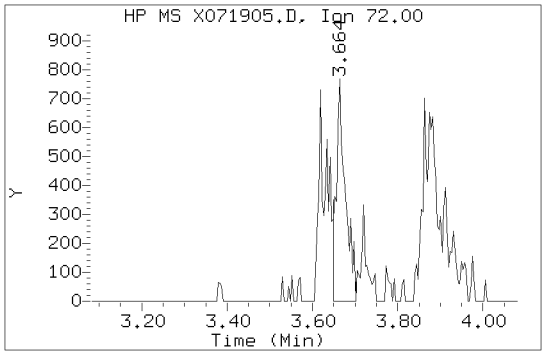
BEFORE

MASS
131
AREA
1518
HEIGHT
1092
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
1160
HEIGHT
768
19-Aug-2022
10:59
linh
pham

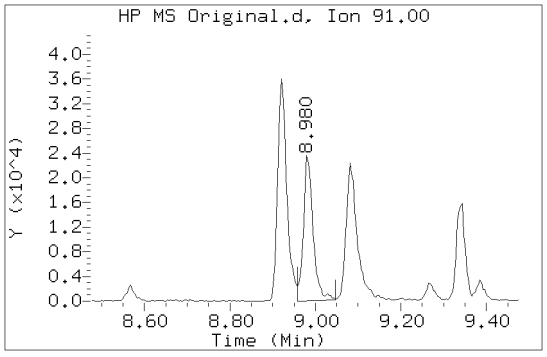


2-Chlorotoluene (95-49-8)

Reason Code:

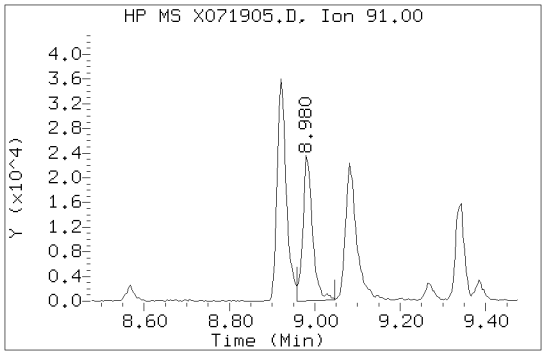
BEFORE

MASS
164
AREA
11817
HEIGHT
8696
25-Jul-2022
09:00
linh
pham



AFTER

MASS
91
AREA
37863
HEIGHT
23522
19-Aug-2022
10:59
linh
pham



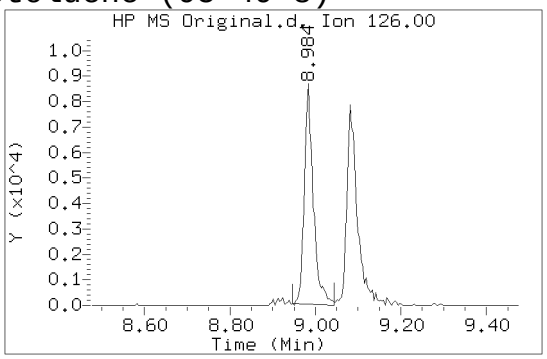
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

2-Chlorotoluene (95-49-8)

Reason Code:

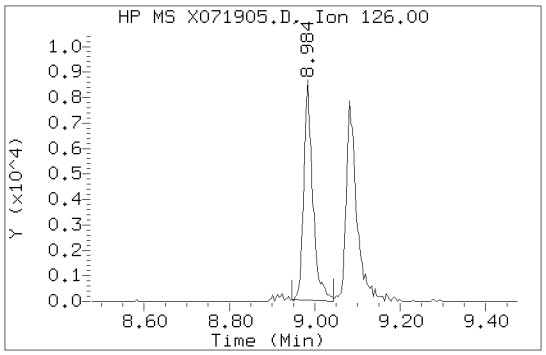
BEFORE

MASS
129
AREA
10743
HEIGHT
6687
25-Jul-2022
09:00
linh
pham



AFTER

MASS
126
AREA
12835
HEIGHT
8653
19-Aug-2022
10:59
linh
pham

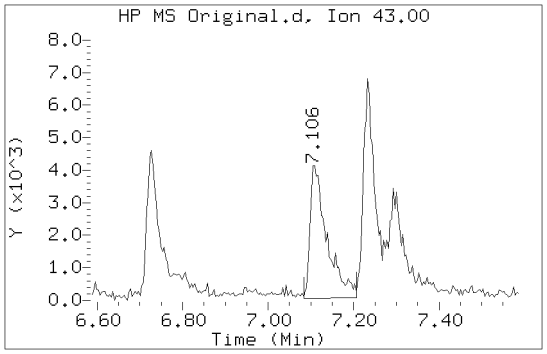


2-Hexanone (591-78-6)

Reason Code:

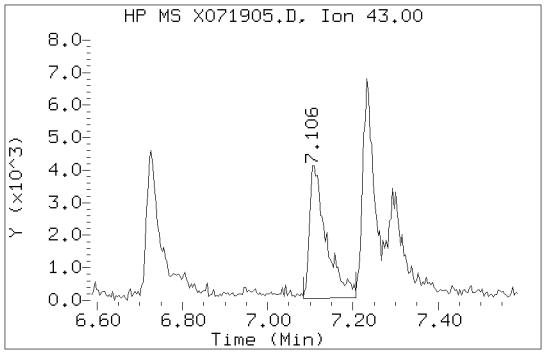
BEFORE

MASS
97
AREA
18665
HEIGHT
7822
25-Jul-2022
09:00
linh
pham



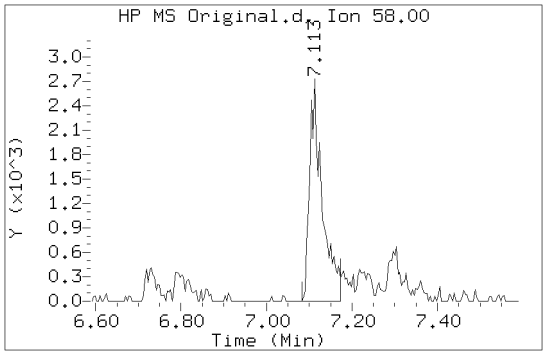
AFTER

MASS
43
AREA
11235
HEIGHT
4065
19-Aug-2022
10:59
linh
pham



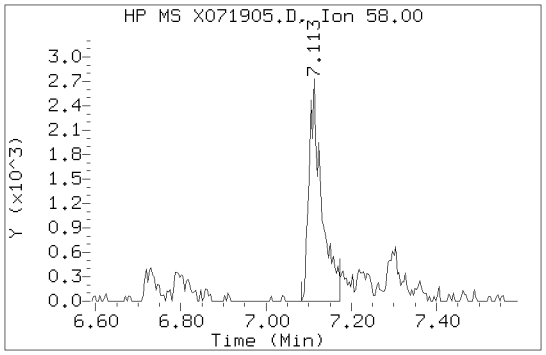
BEFORE

MASS
99
AREA
11761
HEIGHT
5110
25-Jul-2022
09:00
linh
pham



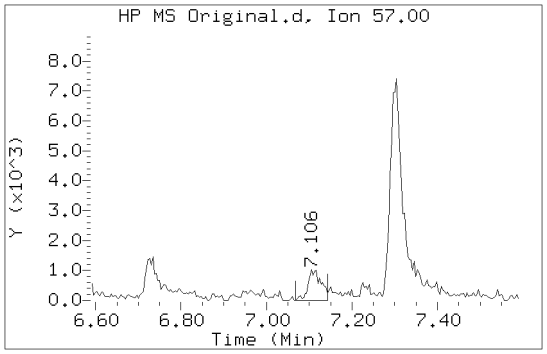
AFTER

MASS
58
AREA
5567
HEIGHT
2731
19-Aug-2022
10:59
linh
pham



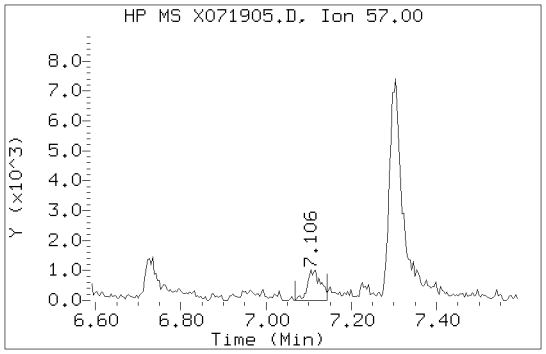
BEFORE

MASS
61
AREA
8134
HEIGHT
3813
25-Jul-2022
09:00
linh
pham



AFTER

MASS
57
AREA
2199
HEIGHT
1027
19-Aug-2022
10:59
linh
pham

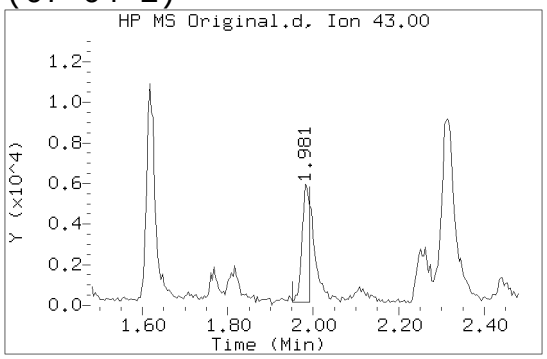


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

Acetone (67-64-1)

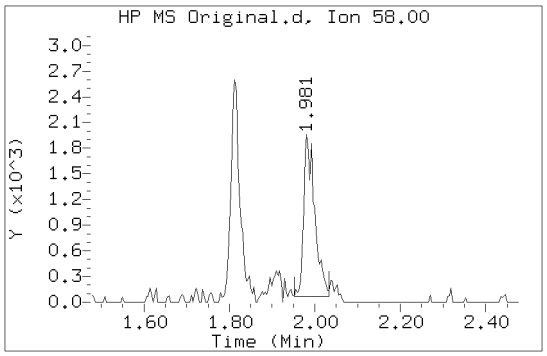
BEFORE

MASS
62
AREA
14813
HEIGHT
12919
25-Jul-2022
09:00
linh
pham



BEFORE

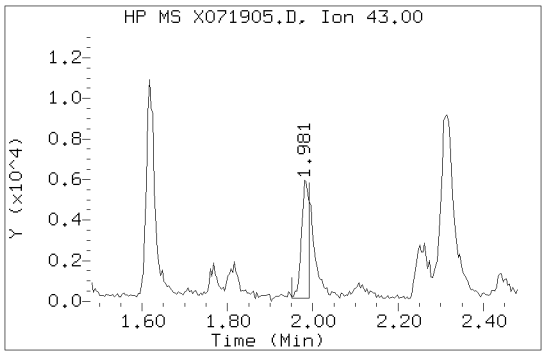
MASS
64
AREA
4927
HEIGHT
4173
25-Jul-2022
09:00
linh
pham



Reason Code:

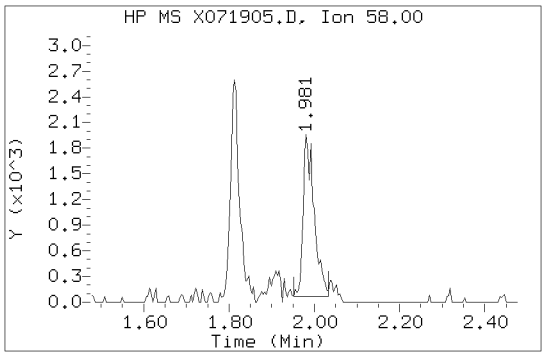
AFTER

MASS
43
AREA
7337
HEIGHT
5791
19-Aug-2022
10:59
linh
pham



AFTER

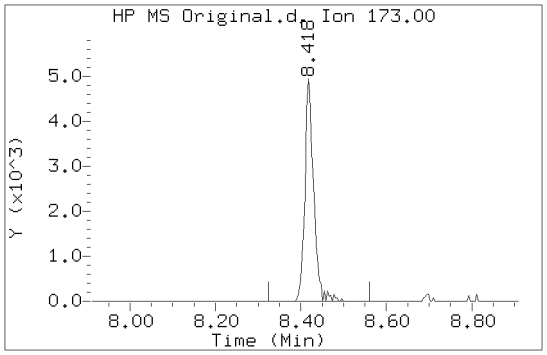
MASS
58
AREA
3464
HEIGHT
1894
19-Aug-2022
10:59
linh
pham



Bromoform (75-25-2)

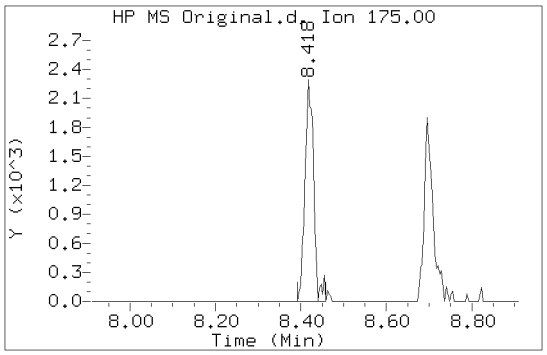
BEFORE

MASS
64
AREA
9295
HEIGHT
7022
25-Jul-2022
09:00
linh
pham



BEFORE

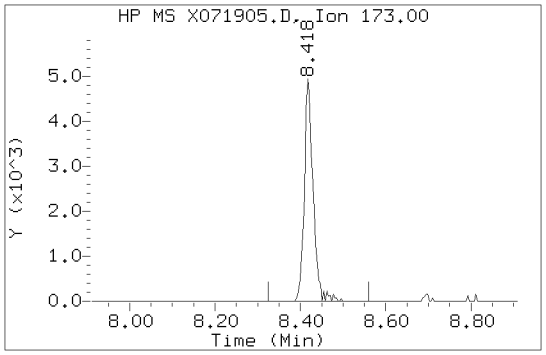
MASS
66
AREA
2894
HEIGHT
2425
25-Jul-2022
09:00
linh
pham



Reason Code:

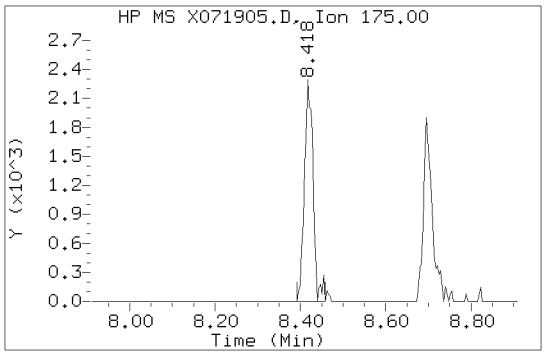
AFTER

MASS
173
AREA
7169
HEIGHT
4944
19-Aug-2022
10:59
linh
pham



AFTER

MASS
175
AREA
3299
HEIGHT
2294
19-Aug-2022
10:59
linh
pham

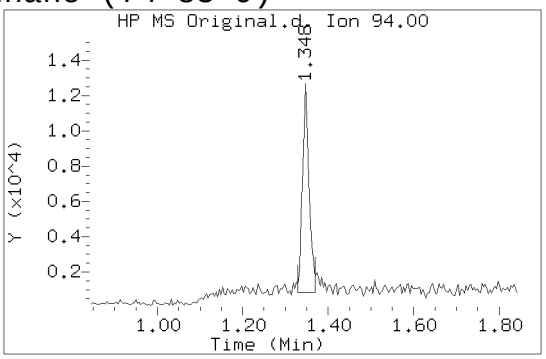


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

Bromomethane (74-83-9)

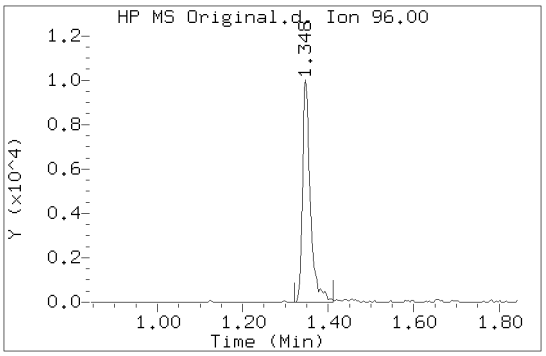
BEFORE

MASS
83
AREA
22862
HEIGHT
9582
25-Jul-2022
09:00
linh
pham



BEFORE

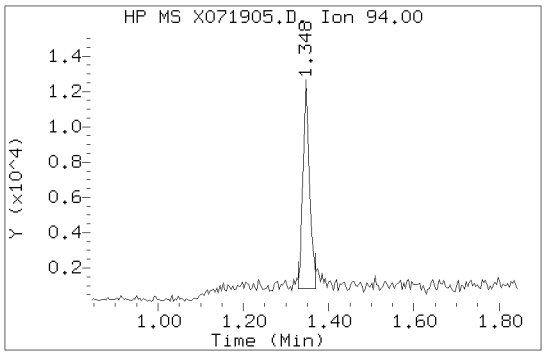
MASS
85
AREA
13889
HEIGHT
5732
25-Jul-2022
09:00
linh
pham



Reason Code:

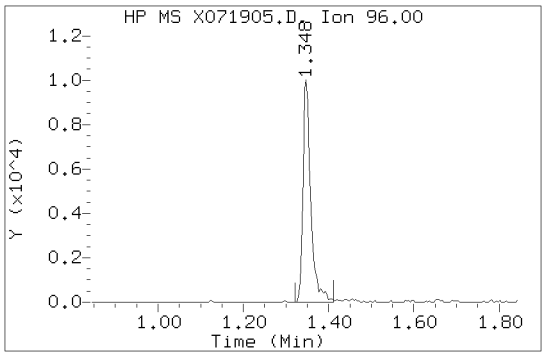
AFTER

MASS
94
AREA
13133
HEIGHT
11831
19-Aug-2022
10:59
linh
pham



AFTER

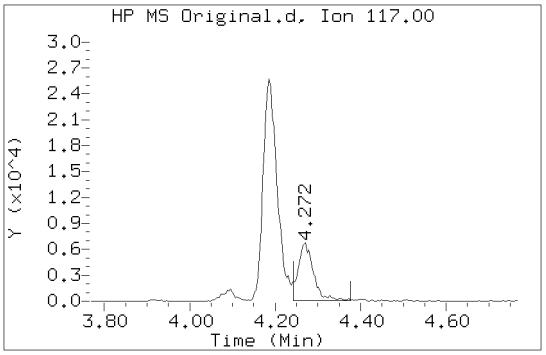
MASS
96
AREA
13187
HEIGHT
10014
19-Aug-2022
10:59
linh
pham



Carbon Tetrachloride (56-23-5)

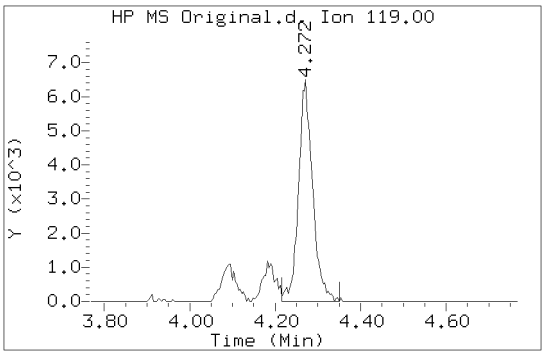
BEFORE

MASS
96
AREA
12905
HEIGHT
5109
25-Jul-2022
09:00
linh
pham



BEFORE

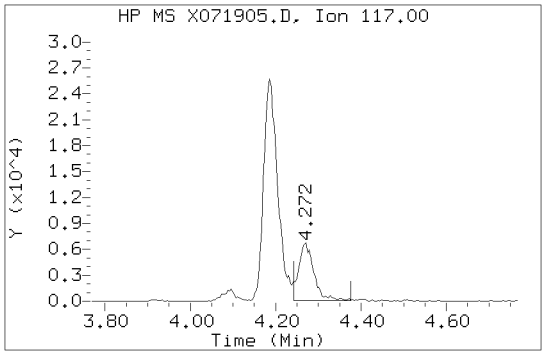
MASS
61
AREA
18838
HEIGHT
7221
25-Jul-2022
09:00
linh
pham



Reason Code:

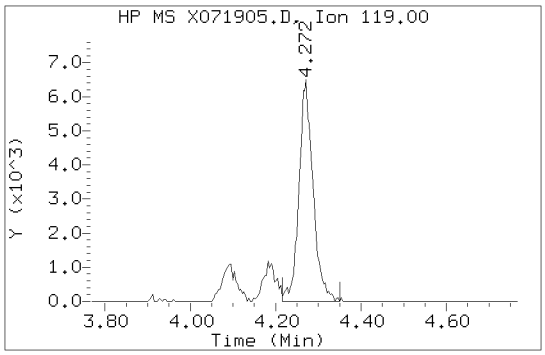
AFTER

MASS
117
AREA
17025
HEIGHT
6726
19-Aug-2022
10:59
linh
pham



AFTER

MASS
119
AREA
15166
HEIGHT
6498
19-Aug-2022
10:59
linh
pham



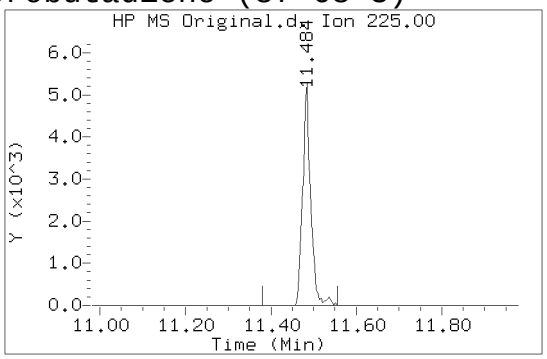
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

Hexachlorobutadiene (87-68-3)

Reason Code:

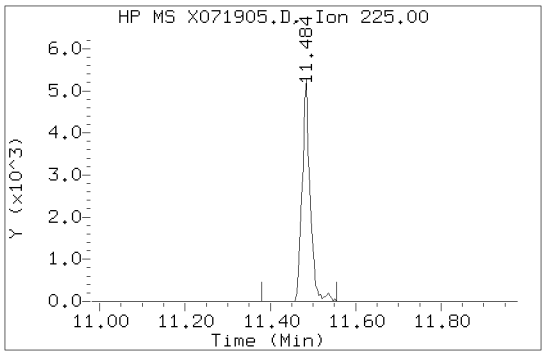
BEFORE

MASS
91
AREA
53786
HEIGHT
35911
25-Jul-2022
09:00
linh
pham



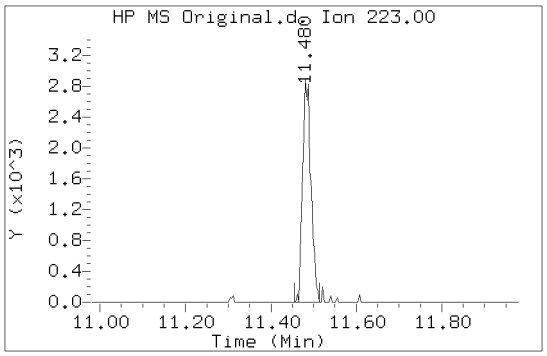
AFTER

MASS
225
AREA
6994
HEIGHT
5264
19-Aug-2022
10:59
linh
pham



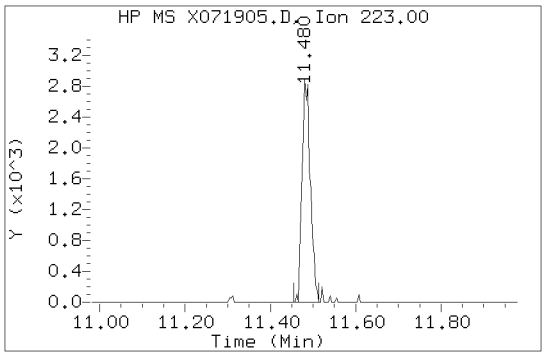
BEFORE

MASS
120
AREA
13286
HEIGHT
8412
25-Jul-2022
09:00
linh
pham



AFTER

MASS
223
AREA
4036
HEIGHT
2879
19-Aug-2022
10:59
linh
pham

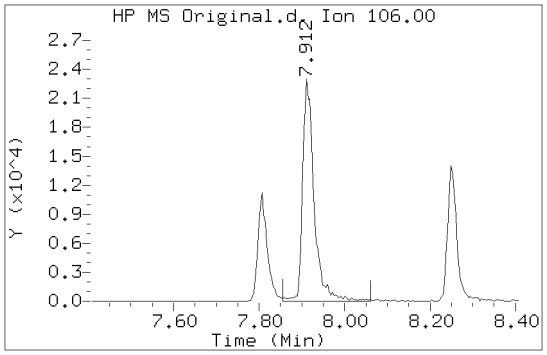


m,p-Xylenes ()

Reason Code:

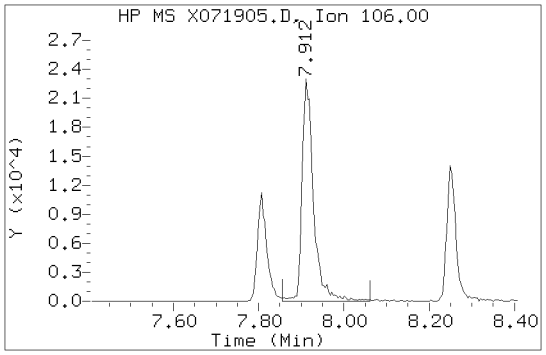
BEFORE

MASS
105
AREA
40980
HEIGHT
28240
25-Jul-2022
09:00
linh
pham



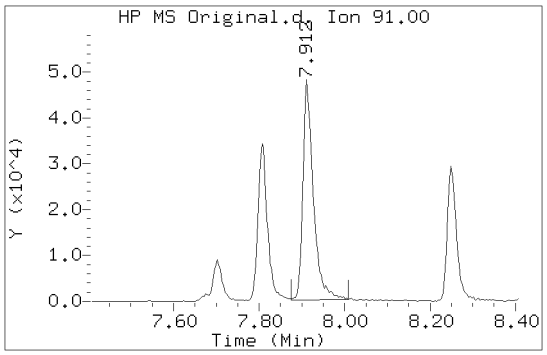
AFTER

MASS
106
AREA
44013
HEIGHT
23003
19-Aug-2022
10:59
linh
pham



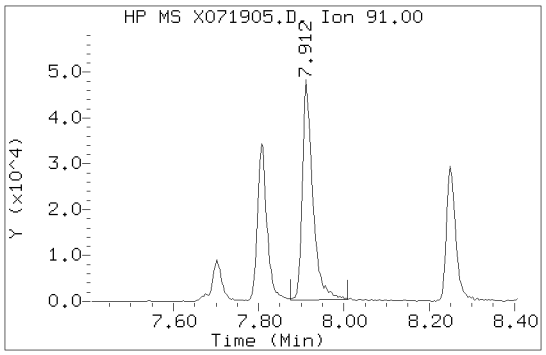
BEFORE

MASS
120
AREA
20601
HEIGHT
14139
25-Jul-2022
09:00
linh
pham



AFTER

MASS
91
AREA
83080
HEIGHT
48028
19-Aug-2022
10:59
linh
pham

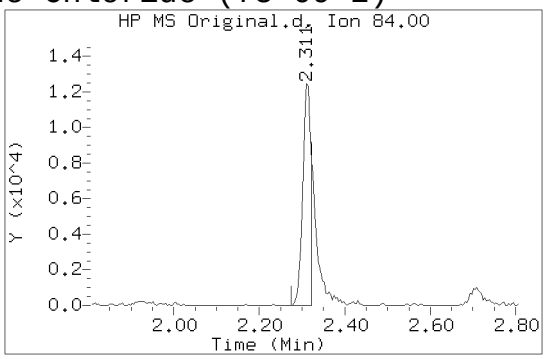


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

Methylene Chloride (75-09-2)

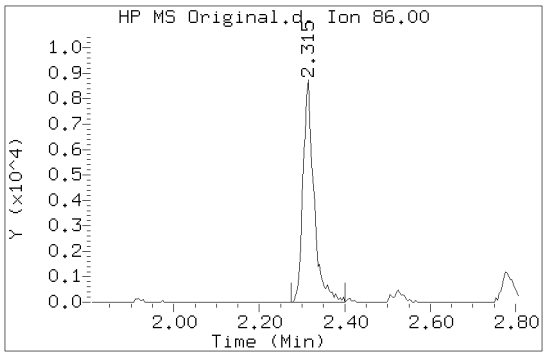
BEFORE

MASS
91
AREA
40205
HEIGHT
22168
25-Jul-2022
09:00
linh
pham



BEFORE

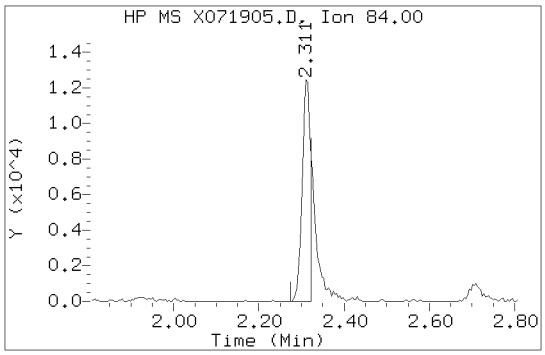
MASS
126
AREA
12421
HEIGHT
7742
25-Jul-2022
09:00
linh
pham



Reason Code:

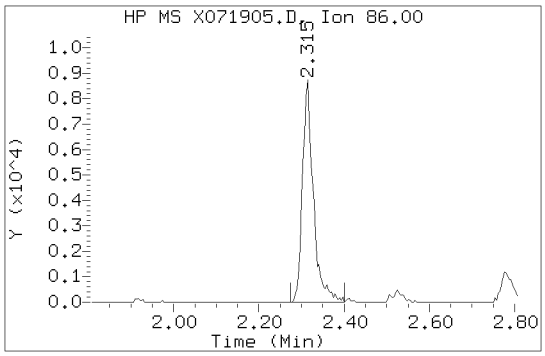
AFTER

MASS
84
AREA
16740
HEIGHT
12461
19-Aug-2022
10:59
linh
pham



AFTER

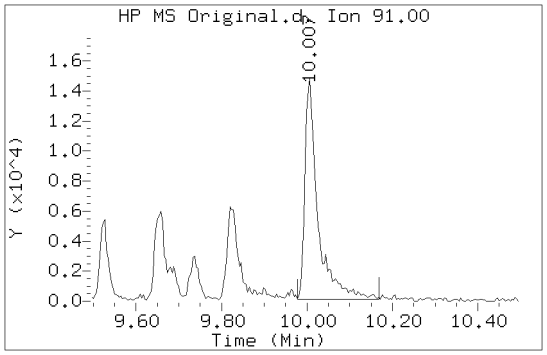
MASS
86
AREA
15829
HEIGHT
8738
19-Aug-2022
10:59
linh
pham



n-Butylbenzene (104-51-8)

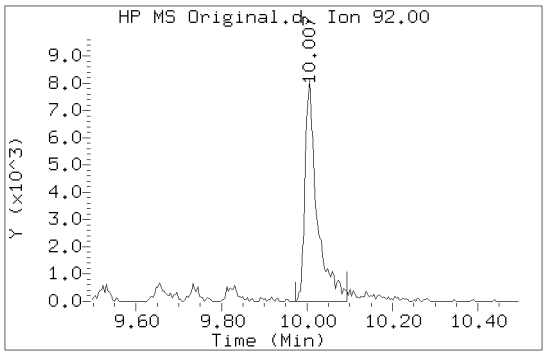
BEFORE

MASS
119
AREA
33676
HEIGHT
24527
25-Jul-2022
09:00
linh
pham



BEFORE

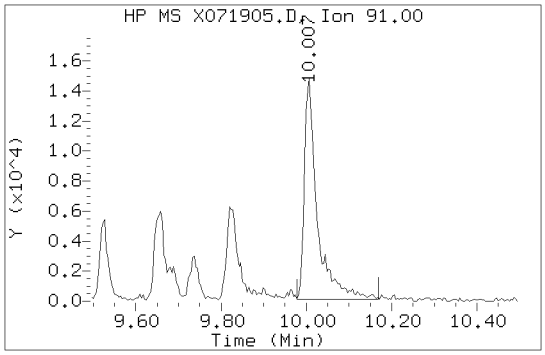
MASS
91
AREA
22780
HEIGHT
15724
25-Jul-2022
09:00
linh
pham



Reason Code:

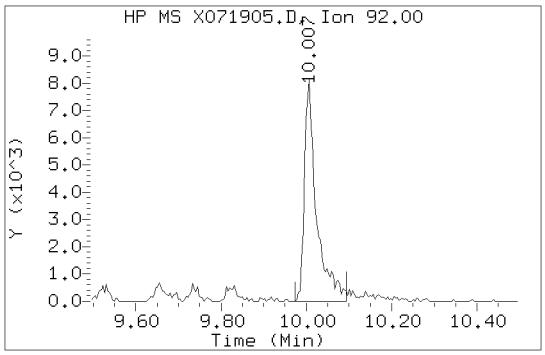
AFTER

MASS
91
AREA
31547
HEIGHT
14685
19-Aug-2022
10:59
linh
pham



AFTER

MASS
92
AREA
16277
HEIGHT
8132
19-Aug-2022
10:59
linh
pham



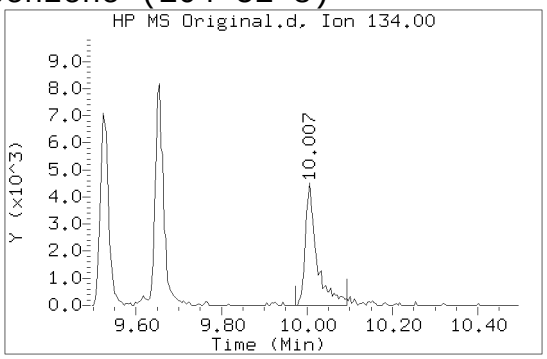
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

n-Butylbenzene (104-51-8)

Reason Code:

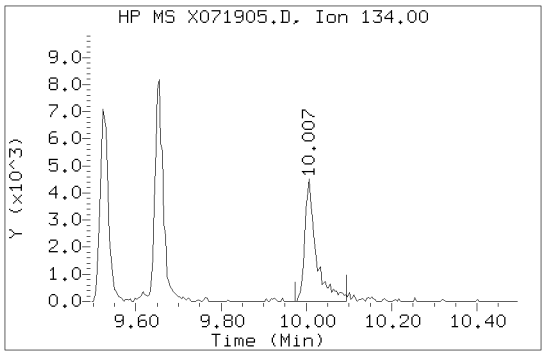
BEFORE

MASS
134
AREA
8589
HEIGHT
6039
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
8536
HEIGHT
4525
19-Aug-2022
10:59
linh
pham

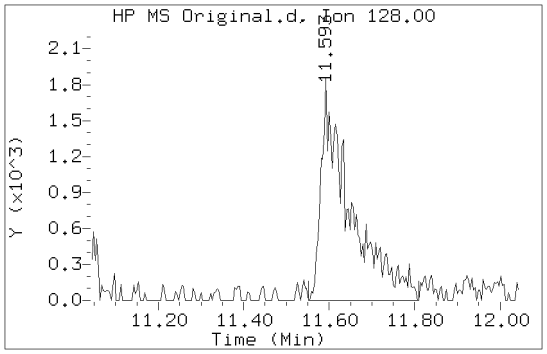


Naphthalene (91-20-3)

Reason Code:

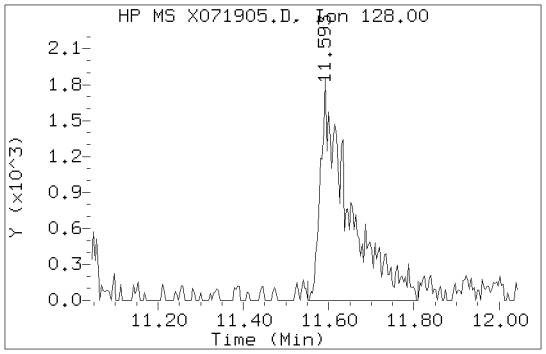
BEFORE

MASS
105
AREA
46135
HEIGHT
33982
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
8600
HEIGHT
1850
19-Aug-2022
10:59
linh
pham

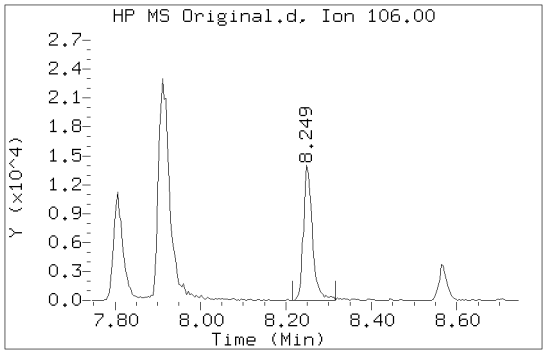


o-Xylene (95-47-6)

Reason Code:

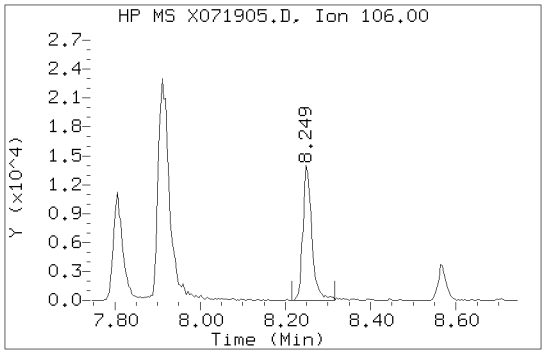
BEFORE

MASS
119
AREA
37293
HEIGHT
26906
25-Jul-2022
09:00
linh
pham



AFTER

MASS
106
AREA
20993
HEIGHT
14051
19-Aug-2022
10:59
linh
pham



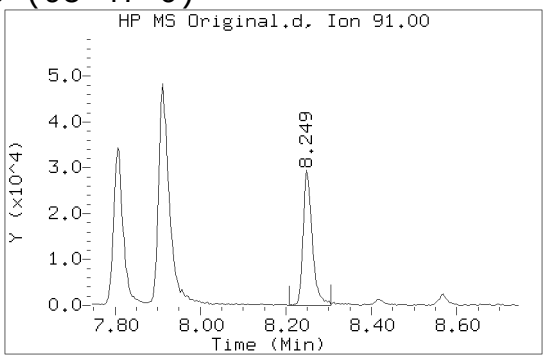
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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

o-Xylene (95-47-6)

Reason Code:

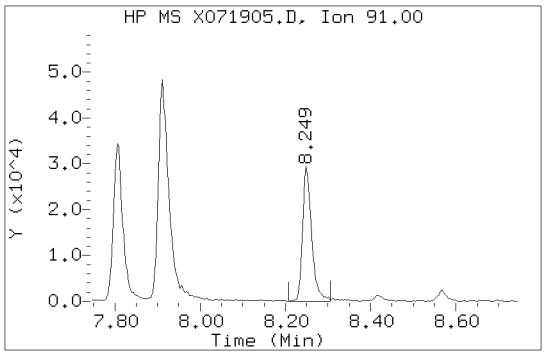
BEFORE

MASS
134
AREA
11044
HEIGHT
8181
25-Jul-2022
09:00
linh
pham



AFTER

MASS
91
AREA
44875
HEIGHT
29536
19-Aug-2022
10:59
linh
pham

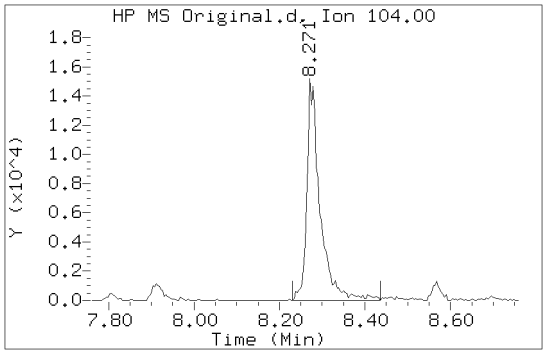


Styrene (100-42-5)

Reason Code:

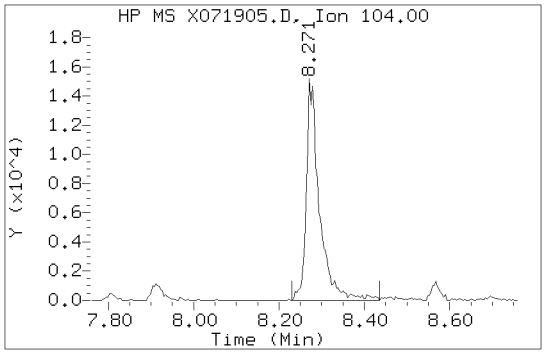
BEFORE

MASS
225
AREA
6994
HEIGHT
5264
25-Jul-2022
09:00
linh
pham



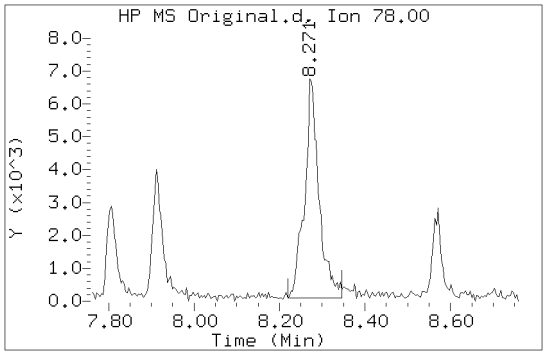
AFTER

MASS
104
AREA
32495
HEIGHT
15189
19-Aug-2022
10:59
linh
pham



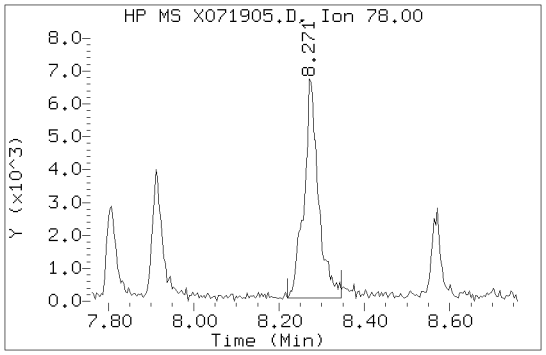
BEFORE

MASS
223
AREA
4036
HEIGHT
2879
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
15931
HEIGHT
6670
19-Aug-2022
10:59
linh
pham

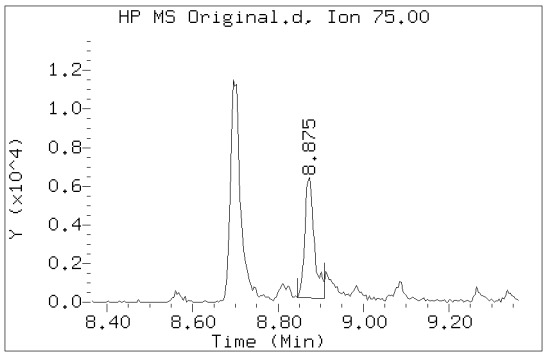


1,2,3-Trichloropropane (96-18-4)

Reason Code:

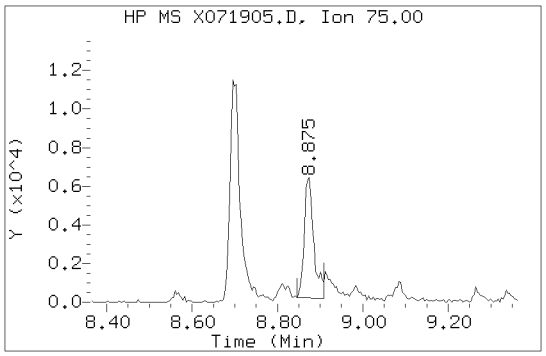
BEFORE

MASS
180
AREA
4350
HEIGHT
1674
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
9920
HEIGHT
6237
19-Aug-2022
10:59
linh
pham



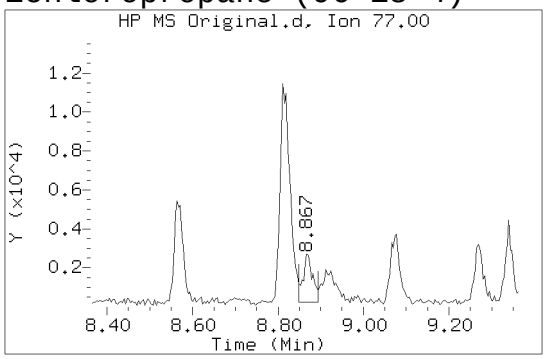
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,2,3-Trichloropropane (96-18-4)

Reason Code:

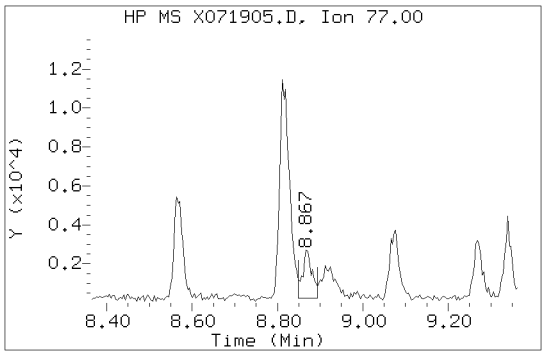
BEFORE

MASS
182
AREA
1686
HEIGHT
2516
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
4022
HEIGHT
2476
19-Aug-2022
10:59
linh
pham

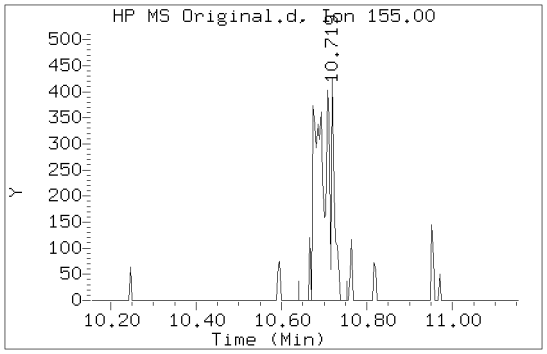


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

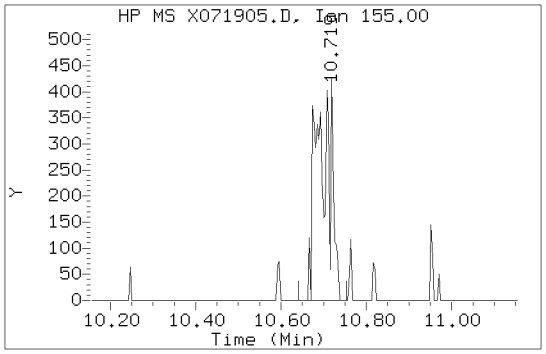
BEFORE

MASS
73
AREA
36818
HEIGHT
16808
25-Jul-2022
09:00
linh
pham



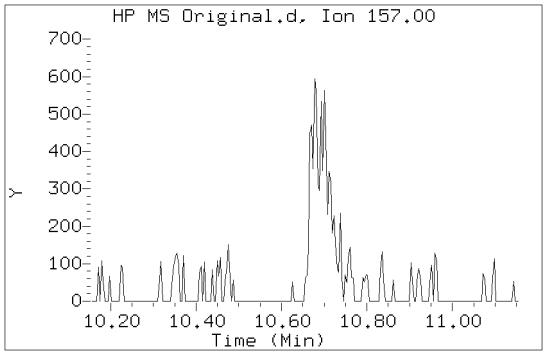
AFTER

MASS
155
AREA
994
HEIGHT
425
19-Aug-2022
10:59
linh
pham



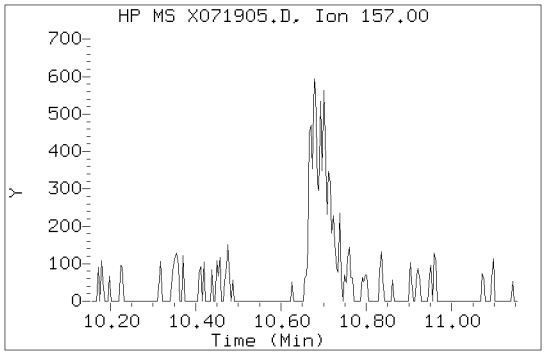
BEFORE

MASS
57
AREA
25396
HEIGHT
9800
25-Jul-2022
09:00
linh
pham



AFTER

MASS
157
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

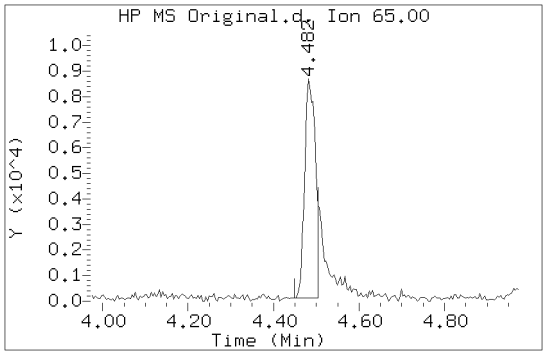


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

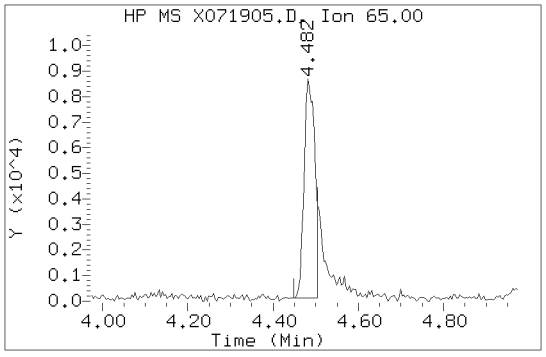
BEFORE

MASS
113
AREA
18364
HEIGHT
8101
25-Jul-2022
09:00
linh
pham



AFTER

MASS
65
AREA
15130
HEIGHT
8575
19-Aug-2022
10:59
linh
pham

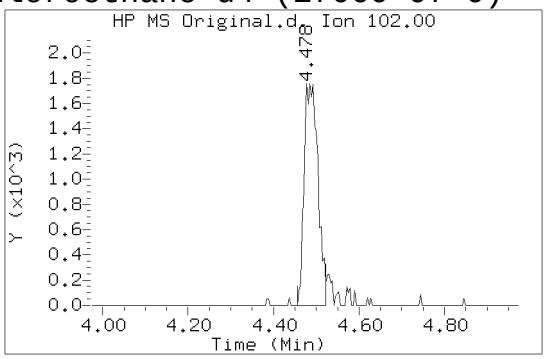


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloroethane-d4 (17060-07-0)

BEFORE

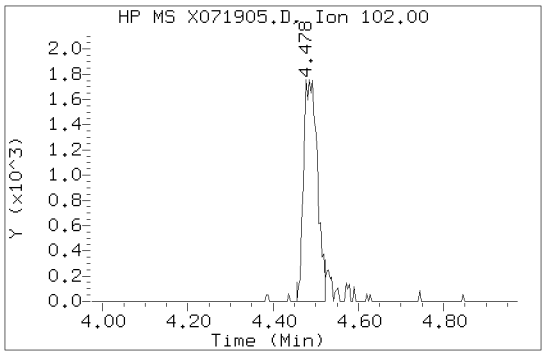
MASS
111
AREA
18785
HEIGHT
8137
25-Jul-2022
09:00
linh
pham



Reason Code:

AFTER

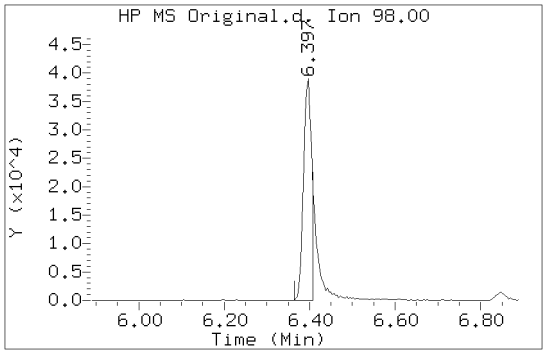
MASS
102
AREA
4011
HEIGHT
1757
19-Aug-2022
10:59
linh
pham



Toluene-d8 (2037-26-5)

BEFORE

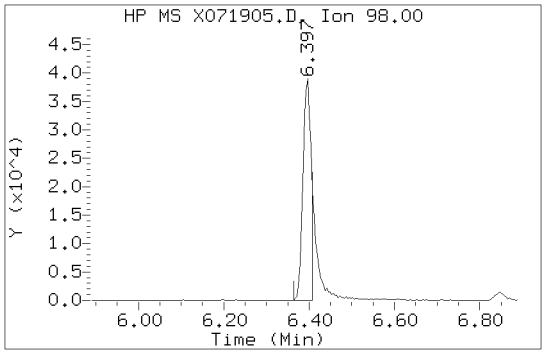
MASS
65
AREA
15130
HEIGHT
8575
25-Jul-2022
09:00
linh
pham



Reason Code:

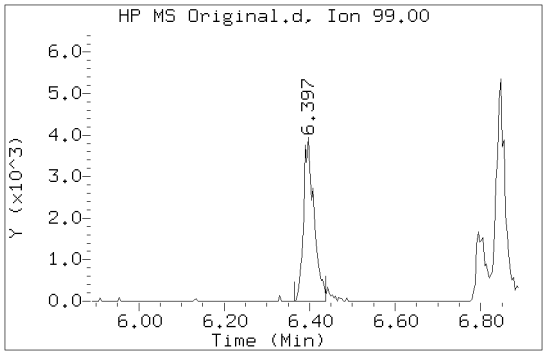
AFTER

MASS
98
AREA
53011
HEIGHT
39000
19-Aug-2022
10:59
linh
pham



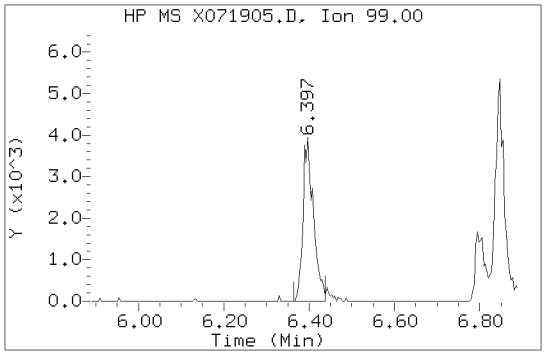
BEFORE

MASS
102
AREA
4011
HEIGHT
1757
25-Jul-2022
09:00
linh
pham



AFTER

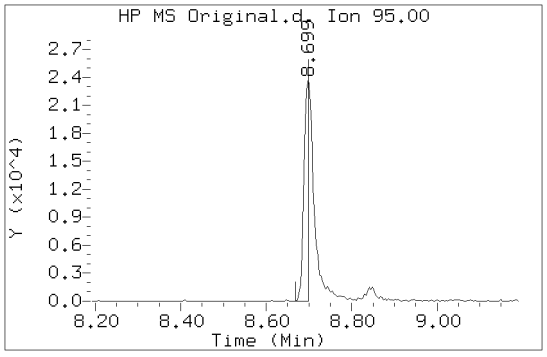
MASS
99
AREA
6827
HEIGHT
3949
19-Aug-2022
10:59
linh
pham



4-Bromofluorobenzene (460-00-4)

BEFORE

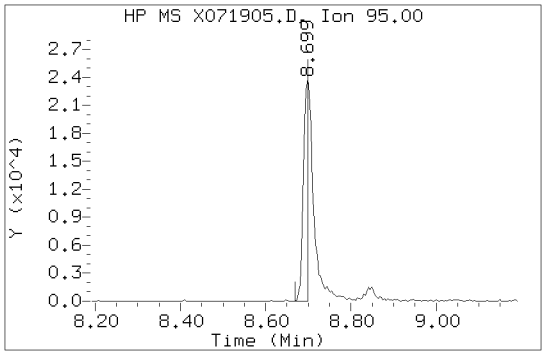
MASS
95
AREA
19061
HEIGHT
23832
25-Jul-2022
09:00
linh
pham



Reason Code:

AFTER

MASS
95
AREA
19061
HEIGHT
23832
19-Aug-2022
10:59
linh
pham



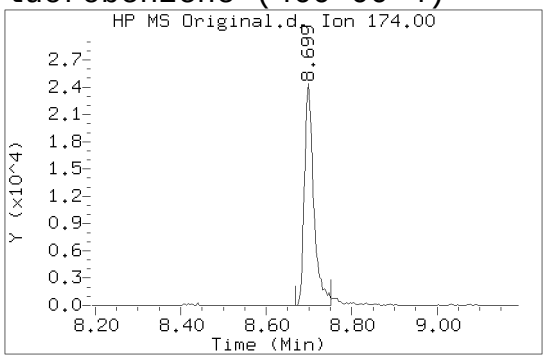
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

4-Bromofluorobenzene (460-00-4)

Reason Code:

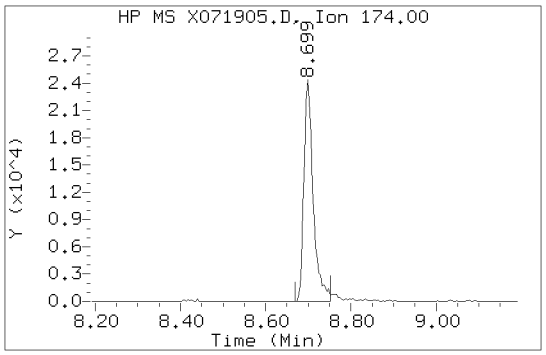
BEFORE

MASS
174
AREA
37206
HEIGHT
24384
25-Jul-2022
09:00
linh
pham



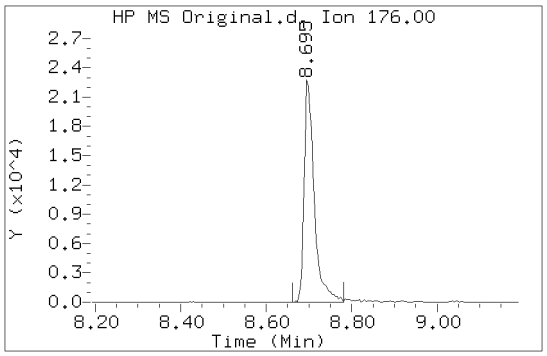
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19-Aug-2022
10:59
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pham



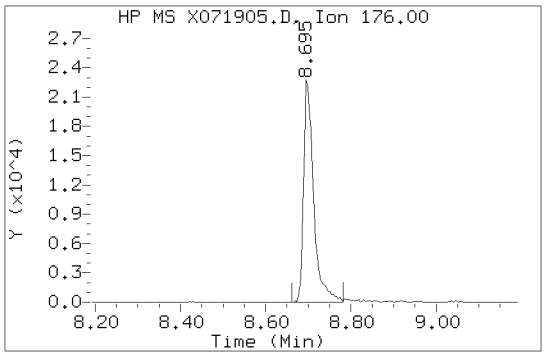
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25-Jul-2022
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AFTER

MASS
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37461
HEIGHT
22760
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071906.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071906.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 19-JUL-2022 13:11
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 12:50 Cal File: X071905.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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)	701809	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1041373	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	950052	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	449830	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.980)	40606	5.00000	5.49
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.069)	40441	5.00000	5.28(M)
$ 48 Toluene-d8	98	6.393	6.393	(0.833)	110927	5.00000	4.67(aM)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.133)	56818	5.00000	5.98
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	34241	5.00000	5.12
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.977)	54582	5.00000	5.48
68 1,1,2,2-Tetrachloroethane	83	8.844	8.844	(0.915)	31785	5.00000	5.03
53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	25929	5.00000	5.30
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	57114	5.00000	5.28
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	31142	5.00000	5.31
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	43023	5.00000	5.11
93 1,2,3-Trichlorobenzene	180	11.757	11.757	(1.216)	10995	5.00000	4.70(aM)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	24185	5.00000	4.96(aM)
90 1,2,4-Trichlorobenzene	180	11.352	11.352	(1.175)	19881	5.00000	4.85(aM)
79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	113753	5.00000	5.27
89 1,2-Dibromo-3-Chloropropane	155	10.670	10.670	(1.104)	2347	5.00000	5.47

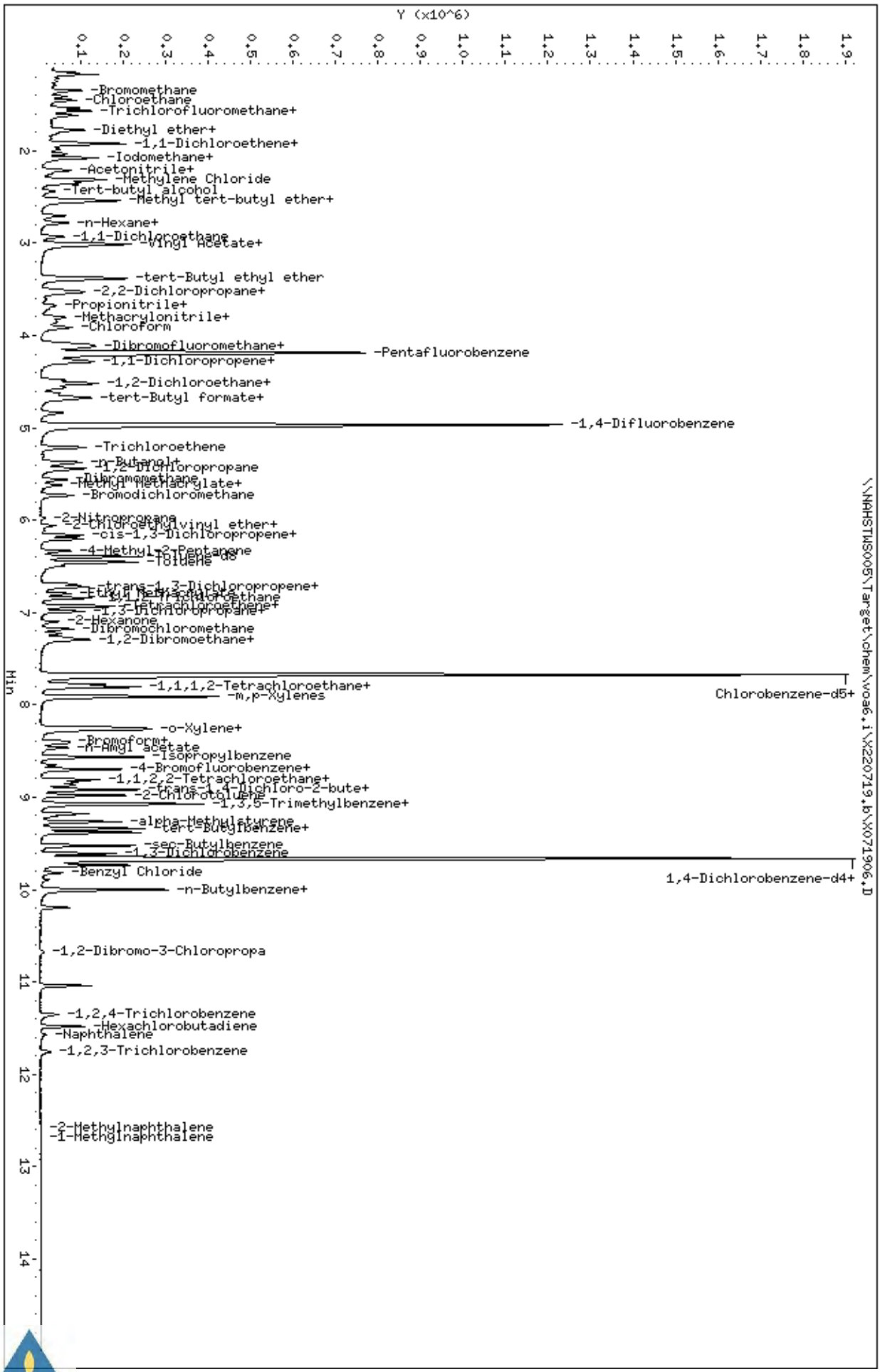
57	1,2-Dibromoethane	107	7.266	7.266 (0.947)	32305	5.00000	5.21
88	1,2-Dichlorobenzene	146	10.003	10.003 (1.035)	59846	5.00000	5.31

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071906.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.567	4.567	(0.919)	49225	5.00000	5.38
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	33483	5.00000	5.22
75	1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	116506	5.00000	5.33
83	1,3-Dichlorobenzene	146	9.609	9.609	(0.994)	66139	5.00000	5.29
54	1,3-Dichloropropane	76	6.985	6.985	(0.911)	52966	5.00000	5.33
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	66130	5.00000	4.99(a)
26	2,2-Dichloropropane	77	3.518	3.518	(0.840)	53750	5.00000	5.38
24	2-Butanone	43	3.604	3.604	(0.860)	16349	10.0000	9.28(M)
76	2-Chlorotoluene	91	8.979	8.979	(0.929)	103950	5.00000	5.39
52	2-Hexanone	43	7.098	7.098	(0.925)	28998	10.0000	9.70
77	4-Chlorotoluene	91	9.077	9.077	(0.939)	111787	5.00000	5.19
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	113315	5.00000	5.16
45	4-Methyl-2-Pentanone	43	6.333	6.333	(0.826)	47780	10.0000	10.32
10	Acetone	43	1.984	1.984	(0.474)	20021	10.0000	8.35(M)
37	Benzene	78	4.519	4.519	(0.909)	129783	5.00000	5.25
74	Bromobenzene	156	8.811	8.811	(0.912)	41026	5.00000	5.34
29	Bromochloromethane	128	3.799	3.799	(0.907)	20367	5.00000	5.14
39	Bromodichloromethane	83	5.729	5.729	(1.153)	45668	5.00000	5.19
66	Bromoform	173	8.417	8.417	(1.097)	20344	5.00000	5.54
6	Bromomethane	94	1.347	1.347	(0.322)	30861	5.00000	5.24(M)
19	Carbon Disulfide	76	2.078	2.078	(0.496)	165186	10.0000	10.65
34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	46328	5.00000	5.15(H)
59	Chlorobenzene	112	7.697	7.697	(1.003)	95602	5.00000	5.30
7	Chloroethane	64	1.411	1.411	(0.337)	25153	5.00000	5.58
28	Chloroform	83	3.915	3.915	(0.935)	63536	5.00000	5.36
3	Chloromethane	50	1.085	1.085	(0.259)	37005	5.00000	5.74
27	cis-1,2-Dichloroethene	96	3.536	3.536	(0.844)	36563	5.00000	5.24
46	cis-1,3-Dichloropropene	75	6.164	6.164	(1.241)	54926	5.00000	5.08
55	Dibromochloromethane	129	7.180	7.180	(0.936)	33754	5.00000	4.78(a)
44	Dibromomethane	93	5.557	5.557	(1.118)	22085	5.00000	5.13
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	38222	5.00000	5.56
61	Ethylbenzene	106	7.806	7.806	(1.018)	49041	5.00000	5.38
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	18025	5.00000	4.76(a)
67	Isopropylbenzene	105	8.563	8.563	(1.116)	146541	5.00000	5.35
62	m,p-Xylenes	106	7.911	7.911	(1.031)	120491	10.0000	10.64
17	Methylene Chloride	84	2.311	2.311	(0.552)	40888	5.00000	5.57(M)
87	n-Butylbenzene	91	9.999	9.999	(1.035)	89804	5.00000	4.92(a)
73	n-Propylbenzene	91	8.916	8.916	(0.922)	160743	5.00000	5.41
92	Naphthalene	128	11.570	11.570	(1.197)	21849	5.00000	4.76(aM)
63	o-Xylene	106	8.248	8.248	(1.075)	57923	5.00000	5.26
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	133745	5.00000	5.27
64	Styrene	104	8.271	8.271	(1.078)	92709	5.00000	5.11
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	102197	5.00000	5.51
56	Tetrachloroethene	164	6.929	6.929	(0.903)	33865	5.00000	5.49
50	Toluene	91	6.453	6.453	(0.841)	142561	5.00000	5.33
20	trans-1,2-Dichloroethene	96	2.539	2.539	(0.606)	33550	5.00000	5.43
51	trans-1,3-Dichloropropene	75	6.689	6.689	(1.346)	42573	5.00000	4.75(a)
38	Trichloroethene	130	5.216	5.216	(1.050)	38945	5.00000	5.32
8	Trichlorofluoromethane	101	1.568	1.568	(0.375)	59958	5.00000	5.42
5	Vinyl Chloride	62	1.149	1.149	(0.274)	39892	5.00000	5.42

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.



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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

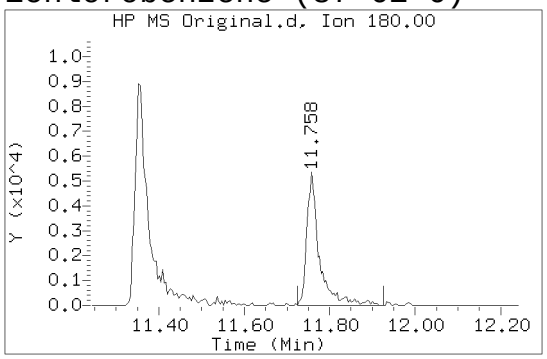
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

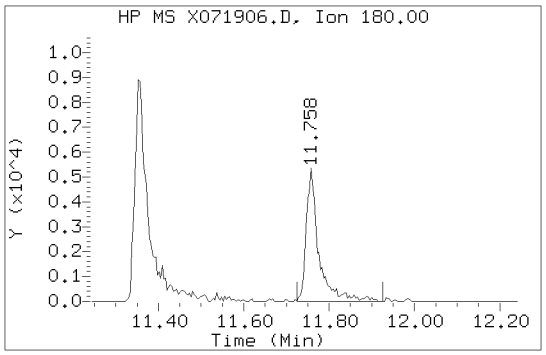
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09:00
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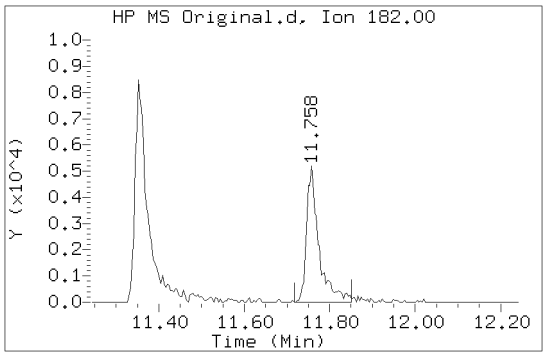
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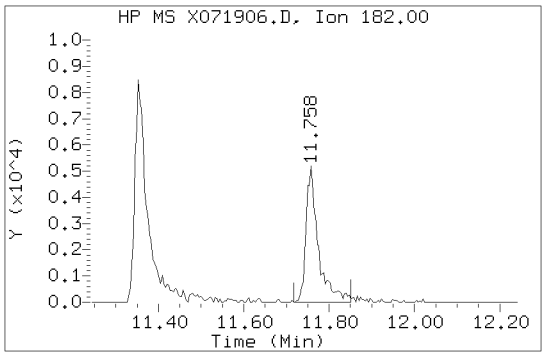
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AFTER

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19-Aug-2022
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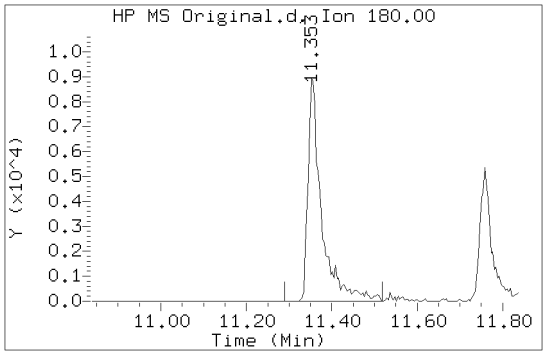


1,2,4-Trichlorobenzene (120-82-1)

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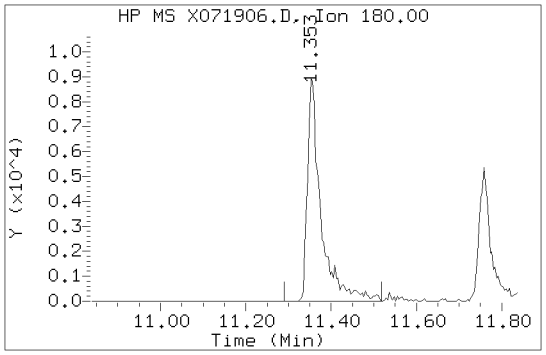
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pham



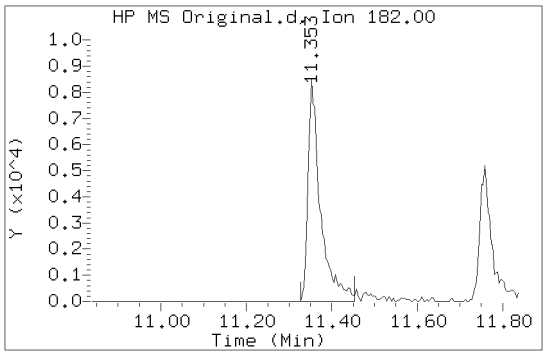
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8916
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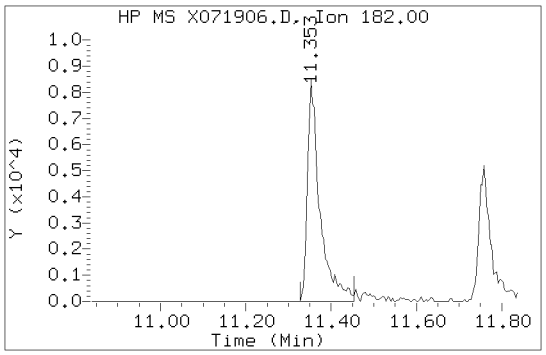
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25-Jul-2022
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AFTER

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19-Aug-2022
10:59
linh
pham



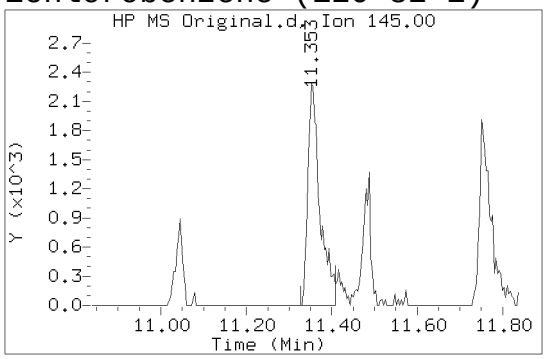
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

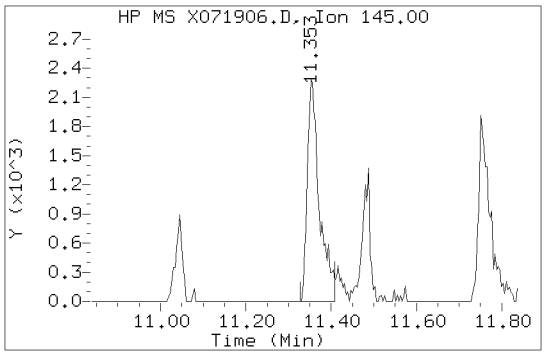
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25-Jul-2022
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AFTER

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4517
HEIGHT
2282
19-Aug-2022
10:59
linh
pham

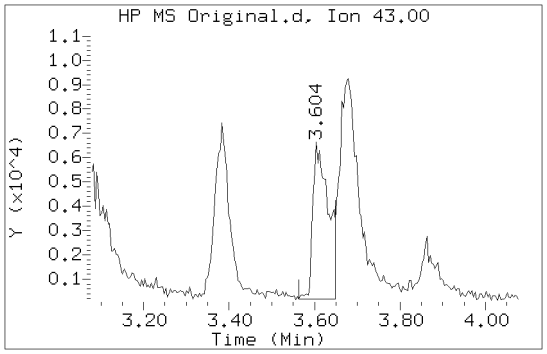


2-Butanone (78-93-3)

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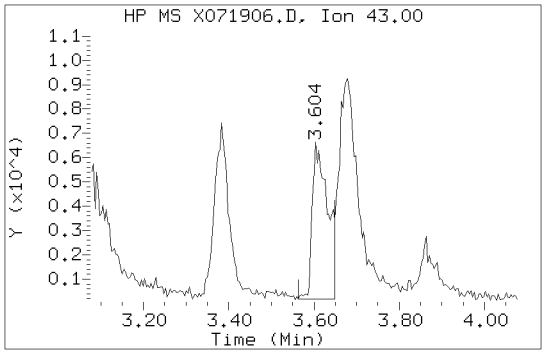
BEFORE

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HEIGHT
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25-Jul-2022
09:00
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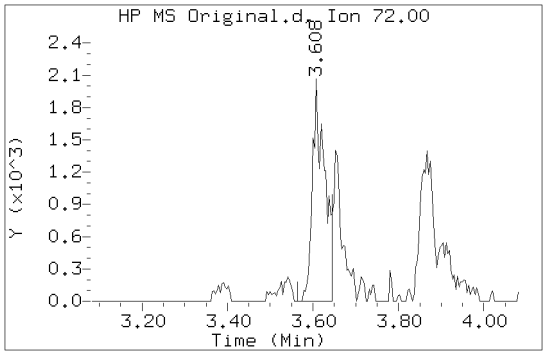
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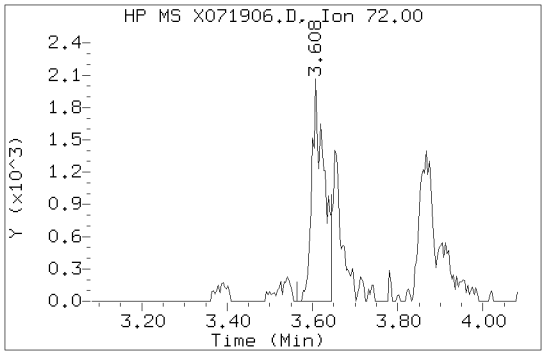
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AFTER

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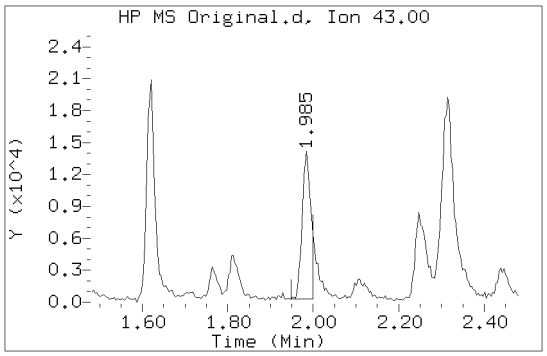


Acetone (67-64-1)

Reason Code:

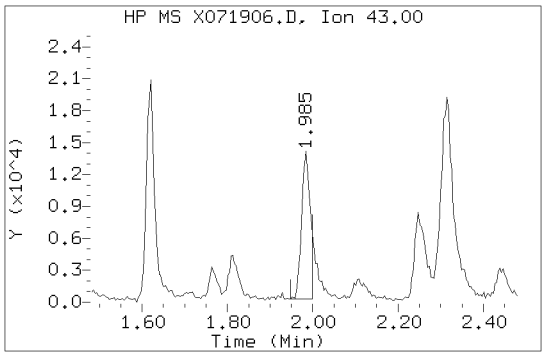
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25-Jul-2022
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AFTER

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19-Aug-2022
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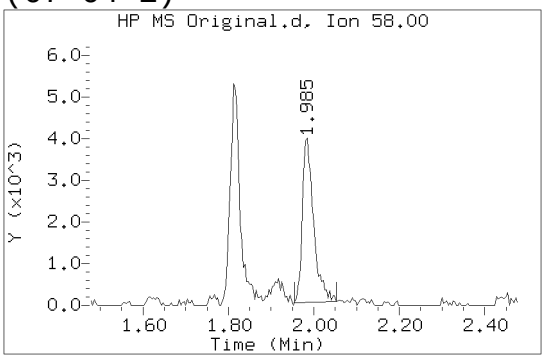
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

Acetone (67-64-1)

Reason Code:

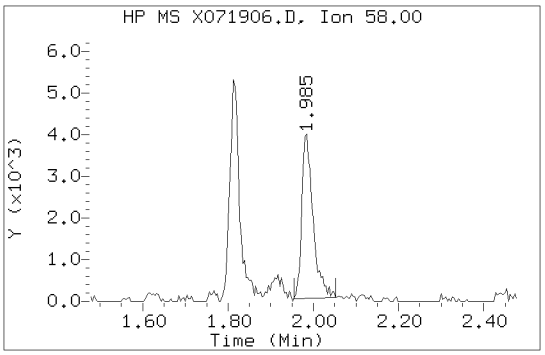
BEFORE

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AFTER

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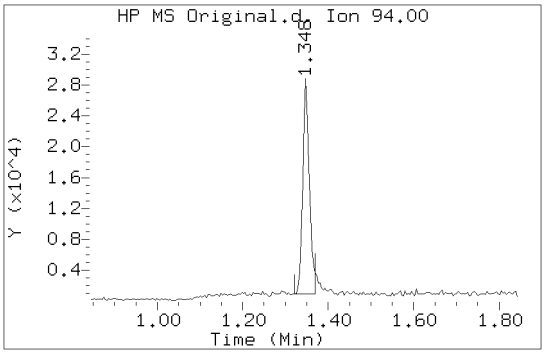


Bromomethane (74-83-9)

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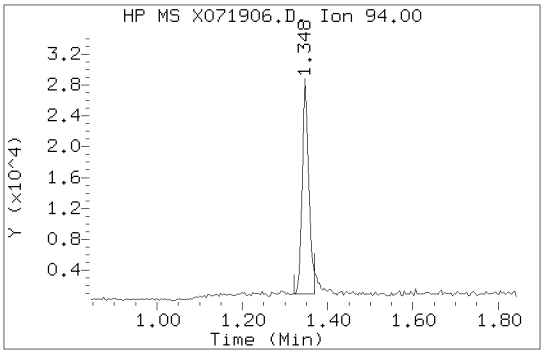
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25-Jul-2022
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linh
pham



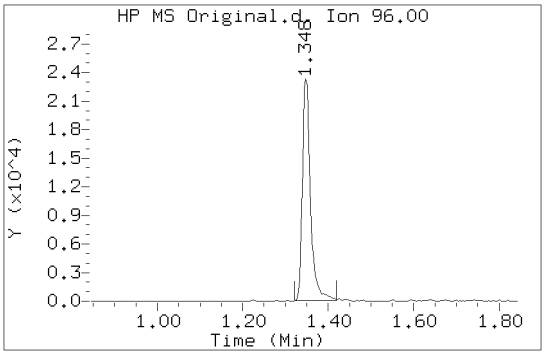
AFTER

MASS
94
AREA
30861
HEIGHT
27868
19-Aug-2022
10:59
linh
pham



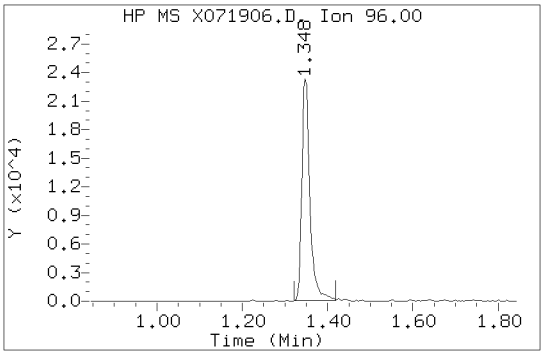
BEFORE

MASS
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16538
25-Jul-2022
09:00
linh
pham



AFTER

MASS
96
AREA
31710
HEIGHT
23276
19-Aug-2022
10:59
linh
pham

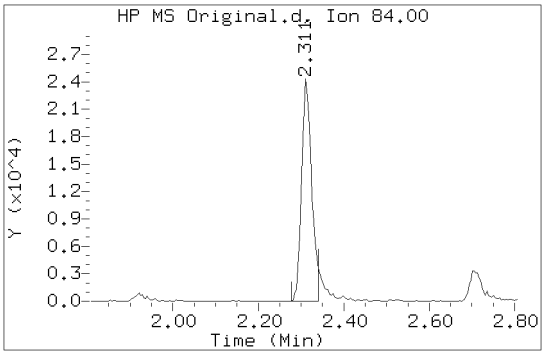


Methylene Chloride (75-09-2)

Reason Code:

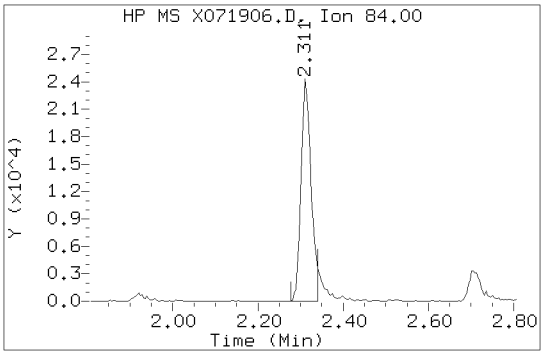
BEFORE

MASS
91
AREA
111787
HEIGHT
72323
25-Jul-2022
09:00
linh
pham



AFTER

MASS
84
AREA
40888
HEIGHT
24320
19-Aug-2022
10:59
linh
pham



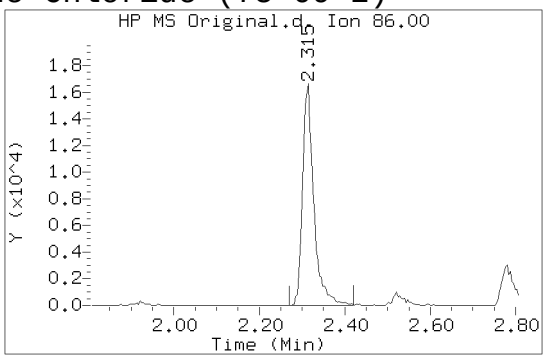
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

Methylene Chloride (75-09-2)

Reason Code:

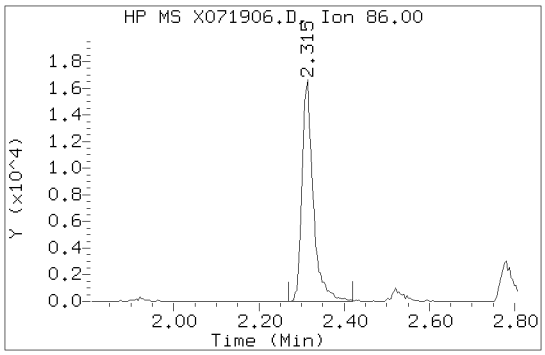
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HEIGHT
23180
25-Jul-2022
09:00
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AFTER

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31050
HEIGHT
16648
19-Aug-2022
10:59
linh
pham

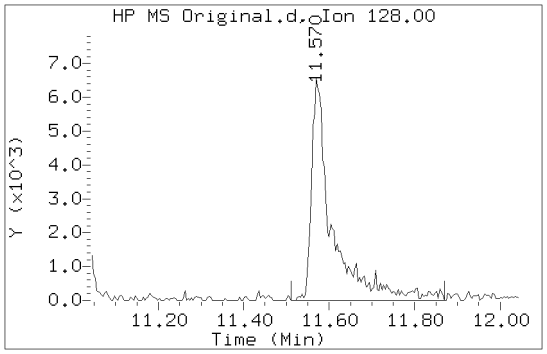


Naphthalene (91-20-3)

Reason Code:

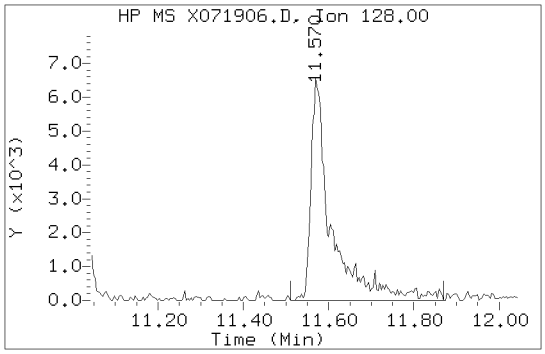
BEFORE

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AREA
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HEIGHT
99939
25-Jul-2022
09:00
linh
pham



AFTER

MASS
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AREA
21849
HEIGHT
6546
19-Aug-2022
10:59
linh
pham

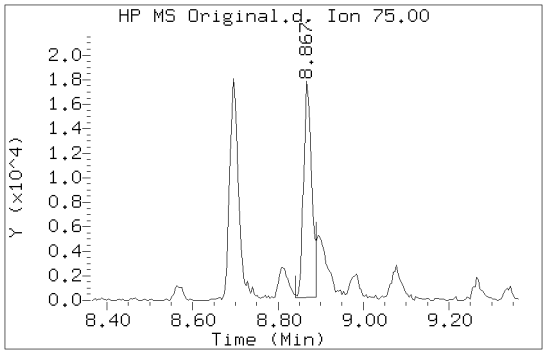


1,2,3-Trichloropropane (96-18-4)

Reason Code:

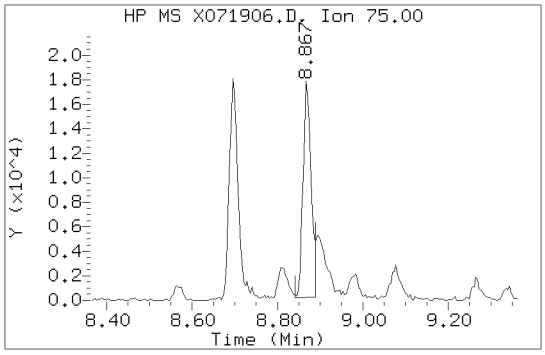
BEFORE

MASS
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AREA
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HEIGHT
5351
25-Jul-2022
09:00
linh
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AFTER

MASS
75
AREA
24185
HEIGHT
17647
19-Aug-2022
10:59
linh
pham



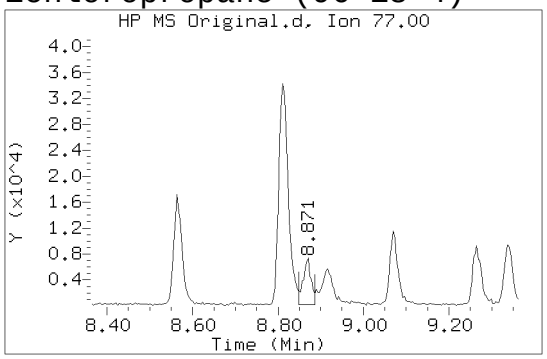
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

1,2,3-Trichloropropane (96-18-4)

Reason Code:

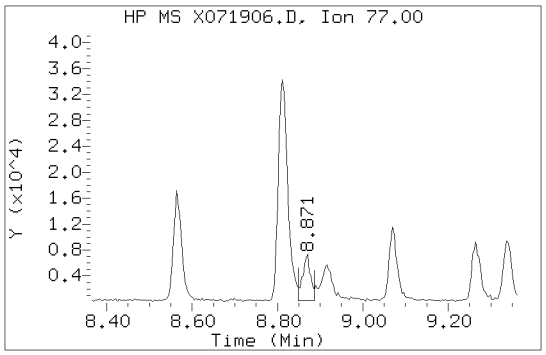
BEFORE

MASS
182
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5207
25-Jul-2022
09:00
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AFTER

MASS
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9709
HEIGHT
7172
19-Aug-2022
10:59
linh
pham

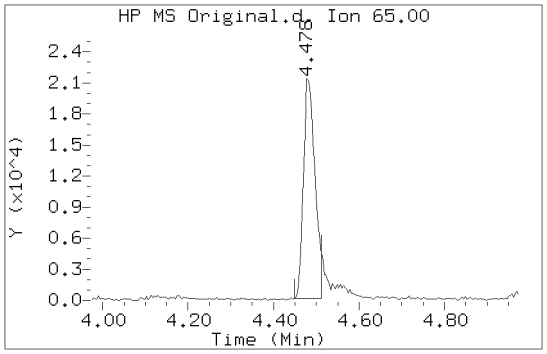


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

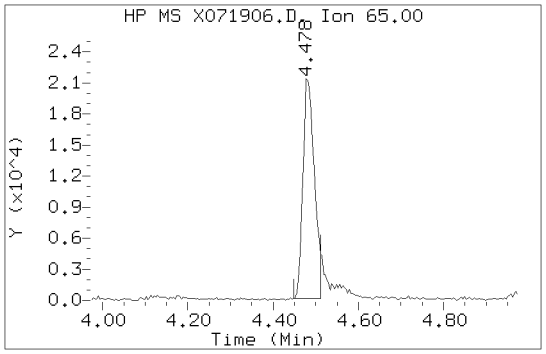
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HEIGHT
18160
25-Jul-2022
09:00
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pham



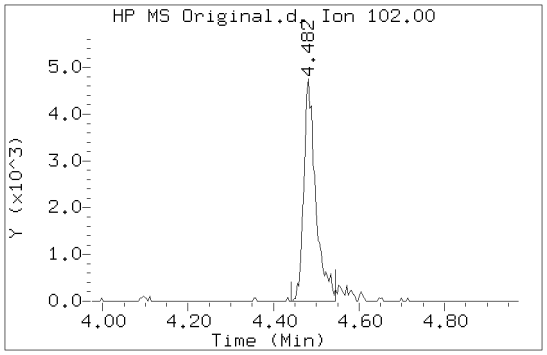
AFTER

MASS
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HEIGHT
21216
19-Aug-2022
10:59
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pham



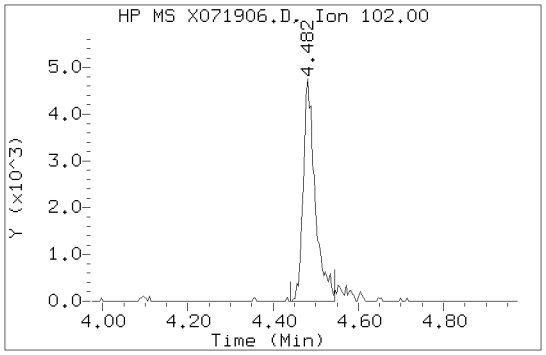
BEFORE

MASS
111
AREA
43698
HEIGHT
16952
25-Jul-2022
09:00
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AFTER

MASS
102
AREA
9413
HEIGHT
4753
19-Aug-2022
10:59
linh
pham

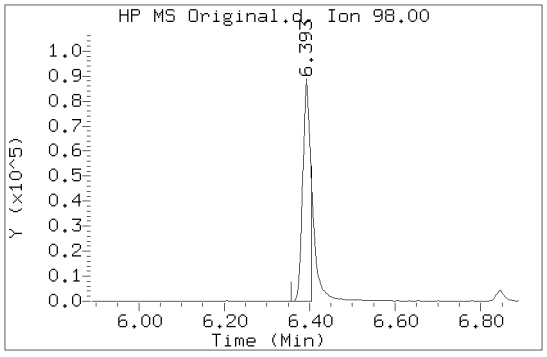


Toluene-d8 (2037-26-5)

Reason Code:

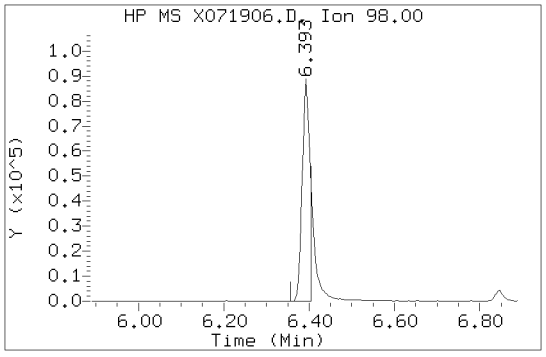
BEFORE

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AREA
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HEIGHT
21216
25-Jul-2022
09:00
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AFTER

MASS
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110927
HEIGHT
88856
19-Aug-2022
10:59
linh
pham



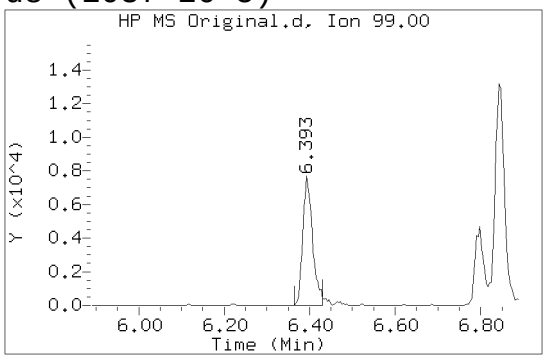
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Inj Date : 19-JUL-2022 13:11
InstruID : voa6.i
LabSampID : VSTD005

Toluene-d8 (2037-26-5)

Reason Code:

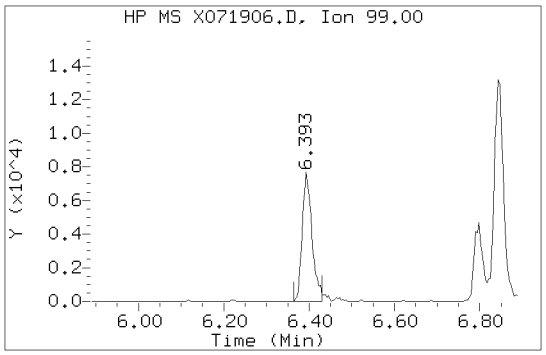
BEFORE

MASS
102
AREA
9413
HEIGHT
4753
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
12492
HEIGHT
7694
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071907.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071907.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 19-JUL-2022 13:32
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:11 Cal File: X071906.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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

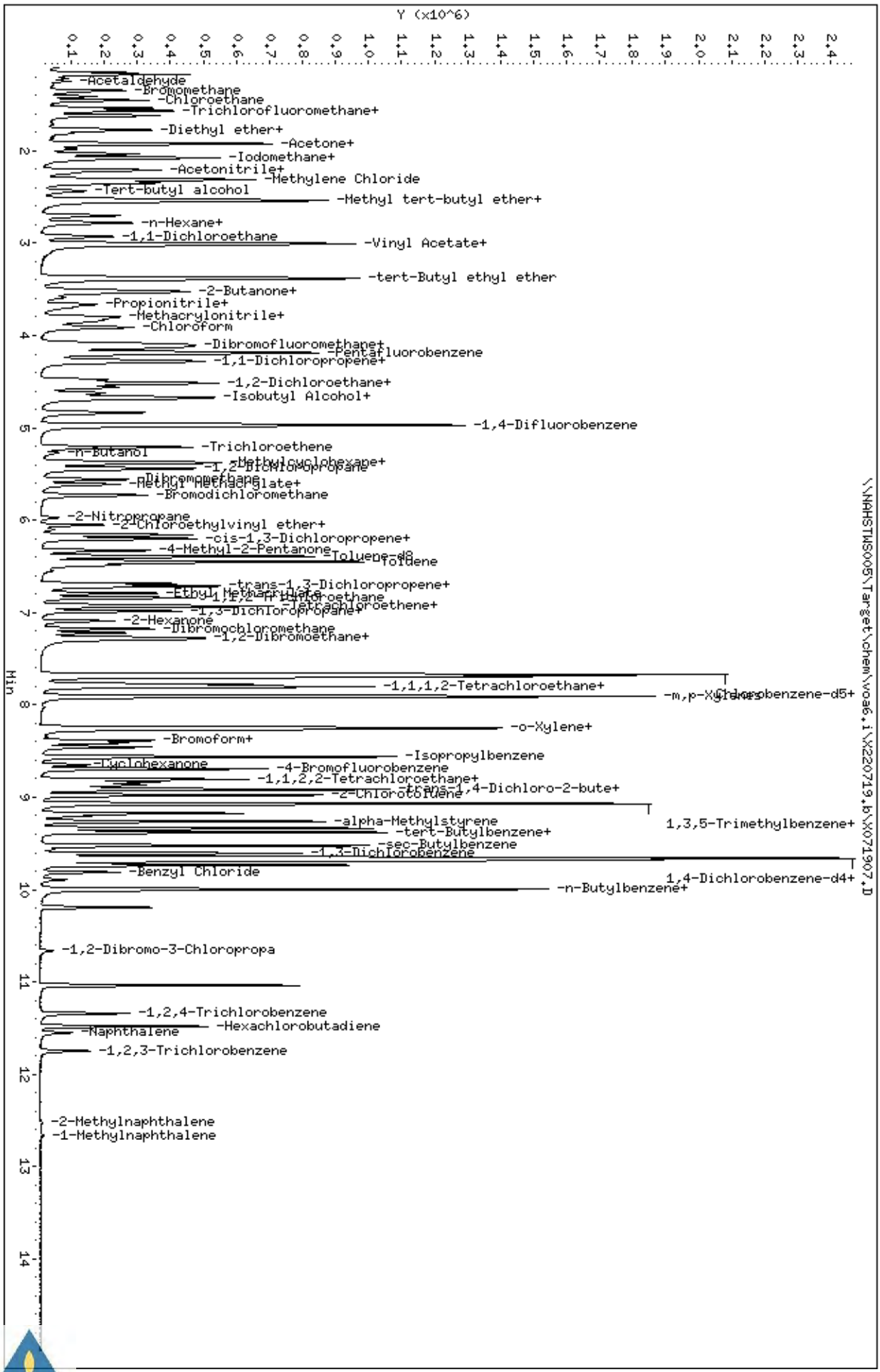
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.185	4.185	(1.000)	739593	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.969	(1.000)	1081697	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	997162	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	485715	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.980)	142500	20.0000	19.98
$ 35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	154444	20.0000	20.00
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	500293	20.0000	20.10
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	180100	20.0000	19.74
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	141960	20.0000	20.26
31 1,1,1-Trichloroethane	97	4.084	4.084	(0.976)	214055	20.0000	20.40
68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	134536	20.0000	19.72
53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	101856	20.0000	19.86
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	227348	20.0000	19.96
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	125514	20.0000	20.33
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	176949	20.0000	20.26
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	47433	20.0000	18.78
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	102755	20.0000	19.53(M)
90 1,2,4-Trichlorobenzene	180	11.341	11.341	(1.173)	87805	20.0000	19.84
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	483222	20.0000	20.74
89 1,2-Dibromo-3-Chloropropane	155	10.663	10.663	(1.103)	9850	20.0000	19.90

57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	131728	20.0000	20.26
88 1,2-Dichlorobenzene	146	9.995	9.995 (1.034)	246991	20.0000	20.32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	196212	20.0000	20.68
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	132233	20.0000	19.86
75	1,3,5-Trimethylbenzene	105	9.070	9.070	(0.938)	493153	20.0000	20.90
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	276344	20.0000	20.50
54	1,3-Dichloropropane	76	6.985	6.985	(0.911)	210322	20.0000	20.16
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	290428	20.0000	20.29
26	2,2-Dichloropropane	77	3.518	3.518	(0.841)	205808	20.0000	20.20
24	2-Butanone	43	3.589	3.589	(0.858)	70958	40.0000	38.24
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	415686	20.0000	19.96
52	2-Hexanone	43	7.090	7.090	(0.924)	128291	40.0000	40.91
77	4-Chlorotoluene	91	9.073	9.073	(0.939)	475945	20.0000	20.48
82	p-Isopropyltoluene	119	9.651	9.651	(0.998)	506622	20.0000	21.38
45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	195937	40.0000	40.32
10	Acetone	43	1.981	1.981	(0.473)	78540	40.0000	47.44
37	Benzene	78	4.519	4.519	(0.909)	513182	20.0000	20.02
74	Bromobenzene	156	8.807	8.807	(0.911)	169138	20.0000	20.39
29	Bromochloromethane	128	3.799	3.799	(0.908)	81206	20.0000	19.47
39	Bromodichloromethane	83	5.730	5.730	(1.153)	185723	20.0000	20.33
66	Bromoform	173	8.414	8.414	(1.097)	88254	20.0000	19.03
6	Bromomethane	94	1.347	1.347	(0.322)	109055	20.0000	20.80
19	Carbon Disulfide	76	2.078	2.078	(0.497)	658312	40.0000	40.27
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	185192	20.0000	19.84(H)
59	Chlorobenzene	112	7.698	7.698	(1.003)	385649	20.0000	20.39
7	Chloroethane	64	1.411	1.411	(0.337)	95266	20.0000	20.08
28	Chloroform	83	3.911	3.911	(0.935)	248749	20.0000	19.93
3	Chloromethane	50	1.085	1.085	(0.259)	141389	20.0000	20.67
27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.844)	147915	20.0000	20.11
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	227076	20.0000	20.23
55	Dibromochloromethane	129	7.176	7.176	(0.935)	148385	20.0000	20.04
44	Dibromomethane	93	5.557	5.557	(1.118)	88603	20.0000	19.83
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	148427	20.0000	20.96
61	Ethylbenzene	106	7.803	7.803	(1.017)	200036	20.0000	20.94
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	83822	20.0000	20.51
67	Isopropylbenzene	105	8.563	8.563	(1.116)	604478	20.0000	21.04
62	m,p-Xylenes	106	7.907	7.907	(1.031)	502559	40.0000	42.30
17	Methylene Chloride	84	2.311	2.311	(0.552)	145583	20.0000	20.90
87	n-Butylbenzene	91	9.995	9.995	(1.034)	421870	20.0000	21.42
73	n-Propylbenzene	91	8.912	8.912	(0.922)	692792	20.0000	21.62
92	Naphthalene	128	11.551	11.551	(1.195)	88822	20.0000	17.94
63	o-Xylene	106	8.245	8.245	(1.075)	237188	20.0000	20.53
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	579666	20.0000	21.17
64	Styrene	104	8.264	8.264	(1.077)	394677	20.0000	20.75
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	424647	20.0000	21.23
56	Tetrachloroethene	164	6.929	6.929	(0.903)	136299	20.0000	21.07
50	Toluene	91	6.449	6.449	(0.841)	569133	20.0000	20.30
20	trans-1,2-Dichloroethene	96	2.536	2.536	(0.606)	127901	20.0000	19.65
51	trans-1,3-Dichloropropene	75	6.685	6.685	(1.346)	187591	20.0000	20.18
38	Trichloroethene	130	5.212	5.212	(1.049)	156440	20.0000	20.60
8	Trichlorofluoromethane	101	1.569	1.569	(0.375)	242471	20.0000	20.81
5	Vinyl Chloride	62	1.149	1.149	(0.275)	156334	20.0000	20.15

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



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Date : 19-JUL-2022 13:32
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

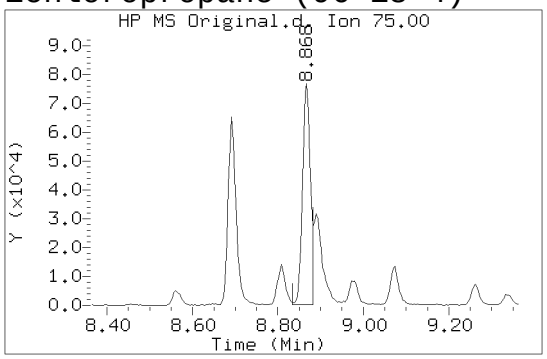
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Inj Date : 19-JUL-2022 13:32
InstruID : voa6.i
LabSampID : VSTD020

1,2,3-Trichloropropane (96-18-4)

Reason Code:

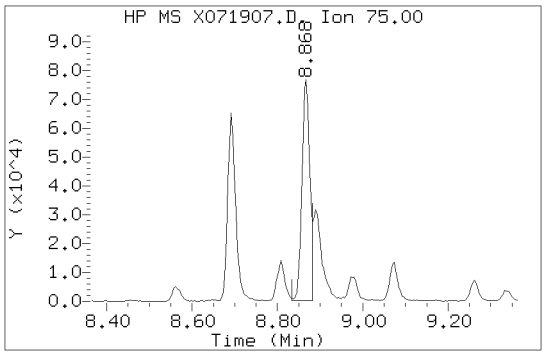
BEFORE

MASS
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47433
HEIGHT
30757
25-Jul-2022
09:00
linh
pham



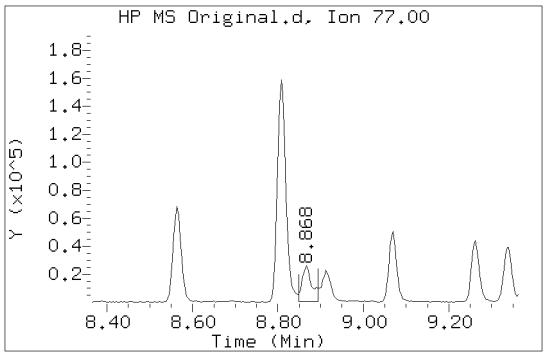
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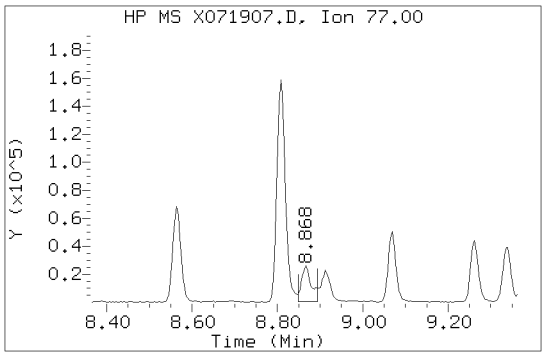
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25-Jul-2022
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AFTER

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HEIGHT
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19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071908.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071908.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 19-JUL-2022 13:53
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:32 Cal File: X071907.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	734958	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.969	(1.000)	1085873	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	1019317	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	512315	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.980)	346983	50.0000	50.03
$ 35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	382235	50.0000	50.32
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1240134	50.0000	48.76
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	453323	50.0000	49.83
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	355310	50.0000	49.61
31 1,1,1-Trichloroethane	97	4.088	4.088	(0.977)	502522	50.0000	48.19
68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	341695	50.0000	47.48
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	257236	50.0000	49.08
22 1,1-Dichloroethane	63	2.926	2.926	(0.699)	554513	50.0000	49.00
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	288416	50.0000	47.01
32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	414434	50.0000	47.28
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	121908	50.0000	45.77
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	253459	50.0000	45.68
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	221394	50.0000	47.44
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1162230	50.0000	47.29
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	25520	50.0000	47.15

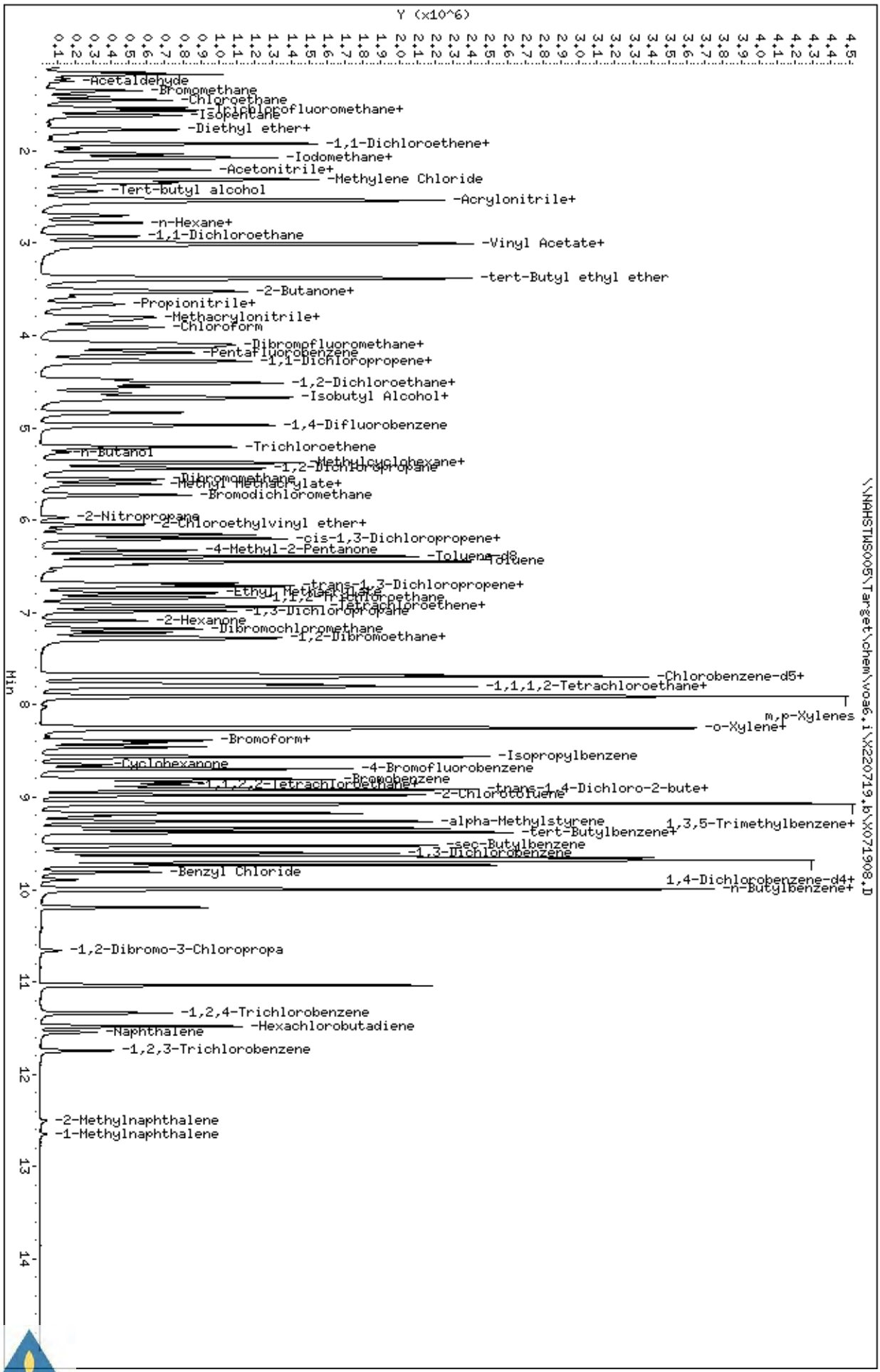
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	334944	50.0000	50.40
88 1,2-Dichlorobenzene	146	9.996	9.996 (1.035)	617625	50.0000	48.17

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071908.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	468638	50.0000	49.20
42	1,2-Dichloropropane	63	5.437	5.437	(1.094)	329416	50.0000	49.28
75	1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	1153705	50.0000	46.36
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	684242	50.0000	48.13
54	1,3-Dichloropropane	76	6.982	6.982	(0.910)	527266	50.0000	49.45
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	709045	50.0000	46.98
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	492680	50.0000	49.02
24	2-Butanone	43	3.585	3.585	(0.857)	193554	100.000	104.97
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	990675	50.0000	45.11
52	2-Hexanone	43	7.090	7.090	(0.924)	323452	100.000	100.91
77	4-Chlorotoluene	91	9.070	9.070	(0.939)	1144586	50.0000	46.69
82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	1165718	50.0000	46.64
45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	498897	100.000	100.44
10	Acetone	43	1.977	1.977	(0.472)	169593	100.000	110.14(M)
37	Benzene	78	4.515	4.515	(0.909)	1259556	50.0000	48.95
74	Bromobenzene	156	8.807	8.807	(0.912)	418666	50.0000	47.85
29	Bromochloromethane	128	3.799	3.799	(0.908)	201063	50.0000	48.52
39	Bromodichloromethane	83	5.730	5.730	(1.153)	463273	50.0000	50.51
66	Bromoform	173	8.410	8.410	(1.096)	238426	50.0000	48.29
6	Bromomethane	94	1.347	1.347	(0.322)	257164	50.0000	51.25
19	Carbon Disulfide	76	2.075	2.075	(0.496)	1581472	100.000	97.36
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	424773	50.0000	45.34(H)
59	Chlorobenzene	112	7.698	7.698	(1.003)	943881	50.0000	48.83
7	Chloroethane	64	1.407	1.407	(0.336)	230467	50.0000	48.88
28	Chloroform	83	3.908	3.908	(0.934)	615600	50.0000	49.65
3	Chloromethane	50	1.085	1.085	(0.259)	337031	50.0000	49.52
27	cis-1,2-Dichloroethene	96	3.529	3.529	(0.843)	373987	50.0000	51.18
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	580323	50.0000	51.51
55	Dibromochloromethane	129	7.177	7.177	(0.936)	378662	50.0000	50.05
44	Dibromomethane	93	5.557	5.557	(1.118)	223928	50.0000	49.93
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	341283	50.0000	48.73
61	Ethylbenzene	106	7.803	7.803	(1.017)	467536	50.0000	47.88
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	184987	50.0000	42.92
67	Isopropylbenzene	105	8.564	8.564	(1.116)	1383160	50.0000	47.10
62	m,p-Xylenes	106	7.908	7.908	(1.031)	1179120	100.000	97.09
17	Methylene Chloride	84	2.311	2.311	(0.552)	346955	50.0000	51.36
87	n-Butylbenzene	91	9.996	9.996	(1.035)	990308	50.0000	47.69
73	n-Propylbenzene	91	8.916	8.916	(0.923)	1583552	50.0000	46.85
92	Naphthalene	128	11.548	11.548	(1.195)	238116	50.0000	45.61
63	o-Xylene	106	8.241	8.241	(1.074)	567732	50.0000	48.08
81	sec-Butylbenzene	105	9.523	9.523	(0.986)	1311547	50.0000	45.41
64	Styrene	104	8.264	8.264	(1.077)	976088	50.0000	50.20
78	tert-Butylbenzene	119	9.340	9.340	(0.967)	962419	50.0000	45.63
56	Tetrachloroethene	164	6.929	6.929	(0.903)	305207	50.0000	46.17
50	Toluene	91	6.449	6.449	(0.841)	1377205	50.0000	48.06
20	trans-1,2-Dichloroethene	96	2.536	2.536	(0.606)	319350	50.0000	49.39
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	493101	50.0000	52.85
38	Trichloroethene	130	5.209	5.209	(1.048)	369860	50.0000	48.52
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	545635	50.0000	47.14
5	Vinyl Chloride	62	1.149	1.149	(0.275)	370791	50.0000	48.11

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071908.D
Date : 19-JUL-2022 13:53
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

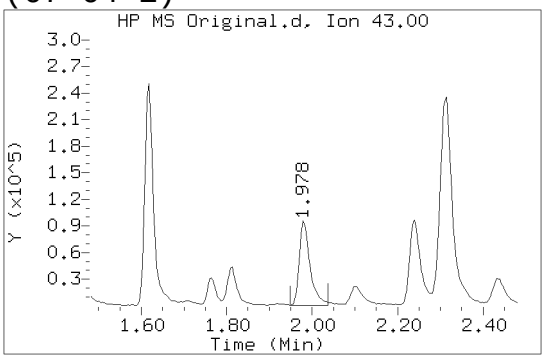
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Inj Date : 19-JUL-2022 13:53
InstruID : voa6.i
LabSampID : VSTD050

Acetone (67-64-1)

Reason Code:

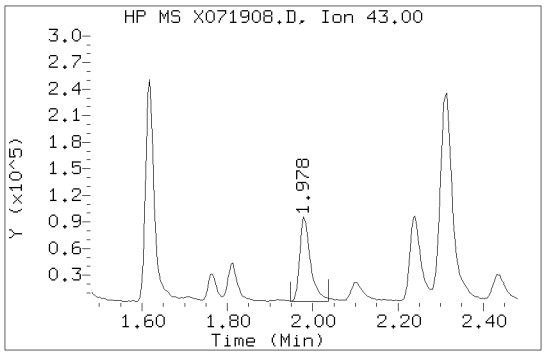
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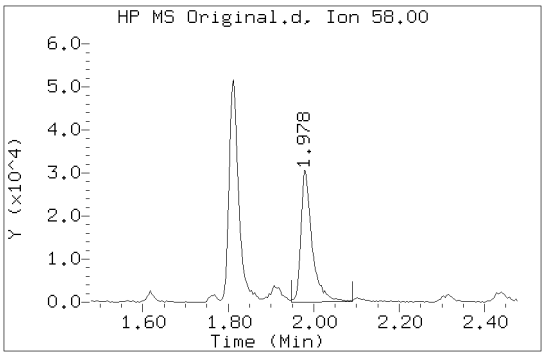
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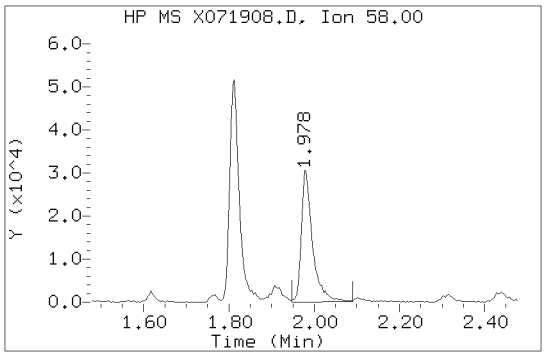
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25-Jul-2022
09:00
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pham



AFTER

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HEIGHT
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19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071909.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071909.D
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Inj Date : 19-JUL-2022 14:14
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	776308	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1154877	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	1081115	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	547857	50.0000	
$ 30 Dibromofluoromethane	113	4.102	4.102	(0.980)	746005	100.000	102.58
$ 35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	809230	100.000	101.19
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	2649228	100.000	98.21
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	977060	100.000	102.12
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	765283	100.000	100.75
31 1,1,1-Trichloroethane	97	4.087	4.087	(0.977)	1106771	100.000	100.49
68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	730488	100.000	94.93
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	543440	100.000	97.76
22 1,1-Dichloroethane	63	2.925	2.925	(0.699)	1163915	100.000	97.38
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	624202	100.000	96.32
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	942439	100.000	101.11
93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	284991	100.000	100.06
71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	543511	100.000	91.61
90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	522833	100.000	104.77
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	2572257	100.000	97.88
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	61674	100.000	100.54

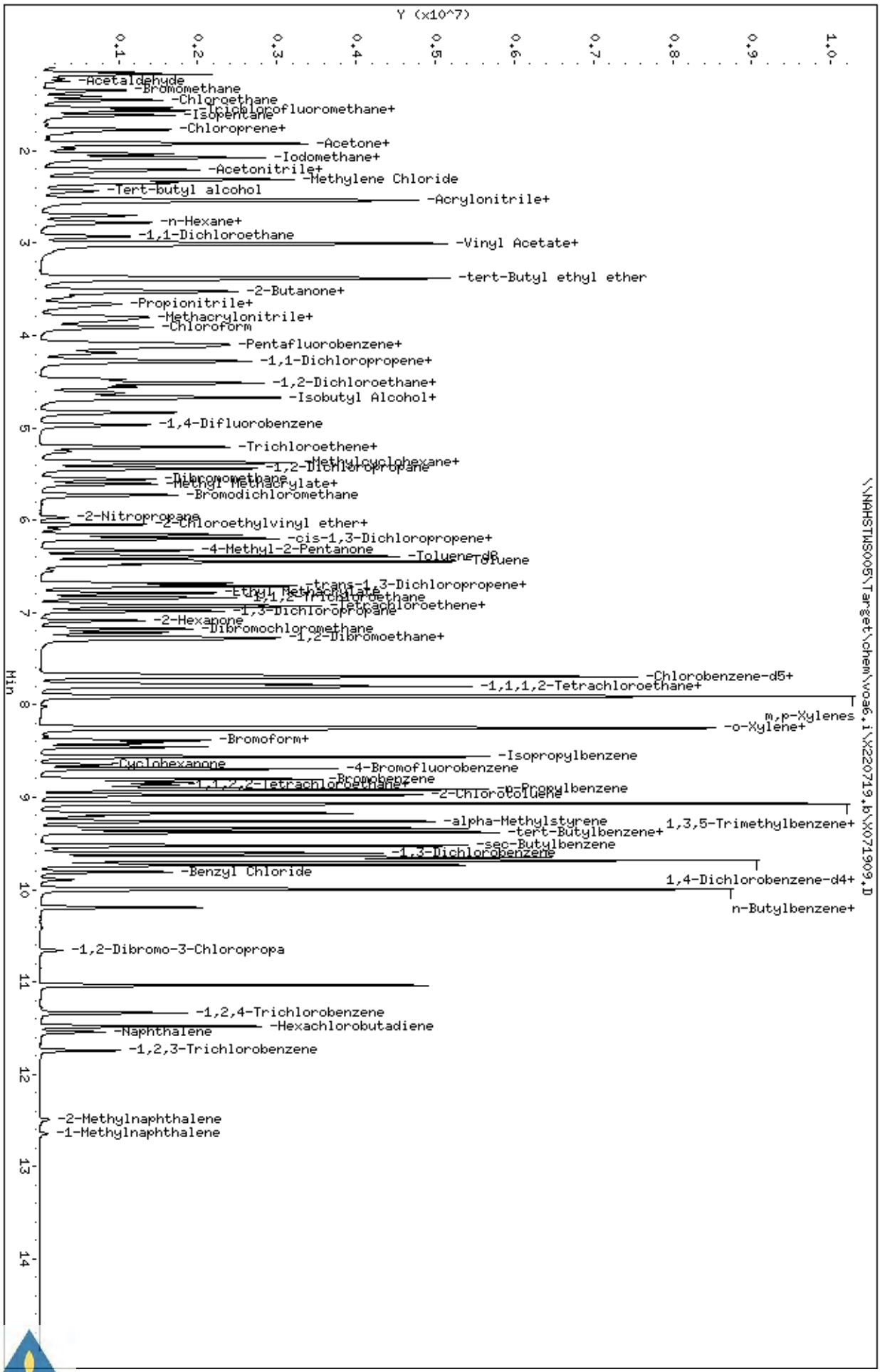
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	703523	100.000	99.81
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	1339459	100.000	97.71

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071909.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	980664	100.000	96.82
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	691249	100.000	97.24
75	1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	2590896	100.000	97.36
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	1499323	100.000	98.63
54	1,3-Dichloropropane	76	6.981	6.981	(0.910)	1108876	100.000	98.07
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	1533271	100.000	95.01
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	1068902	100.000	100.95
24	2-Butanone	43	3.581	3.581	(0.856)	410442	200.000	210.75(A)
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	2164299	100.000	92.16
52	2-Hexanone	43	7.086	7.086	(0.924)	701293	200.000	206.29(A)
77	4-Chlorotoluene	91	9.069	9.069	(0.938)	2500348	100.000	95.39
82	p-Isopropyltoluene	119	9.650	9.650	(0.998)	2680829	100.000	100.31
45	4-Methyl-2-Pentanone	43	6.325	6.325	(0.825)	1056968	200.000	200.64(A)
10	Acetone	43	1.977	1.977	(0.472)	331360	200.000	208.83(A)
37	Benzene	78	4.515	4.515	(0.909)	2647487	100.000	96.74
74	Bromobenzene	156	8.807	8.807	(0.911)	908365	100.000	97.08
29	Bromochloromethane	128	3.799	3.799	(0.908)	418744	100.000	95.66
39	Bromodichloromethane	83	5.726	5.726	(1.152)	974443	100.000	99.90
66	Bromoform	173	8.410	8.410	(1.096)	516716	100.000	97.39
6	Bromomethane	94	1.343	1.343	(0.321)	532992	100.000	101.88
19	Carbon Disulfide	76	2.074	2.074	(0.496)	3384413	200.000	197.27
34	Carbon Tetrachloride	117	4.267	4.267	(0.859)	960811	100.000	96.44(H)
59	Chlorobenzene	112	7.694	7.694	(1.003)	2022869	100.000	98.68
7	Chloroethane	64	1.407	1.407	(0.336)	481997	100.000	96.80
28	Chloroform	83	3.911	3.911	(0.935)	1279887	100.000	97.74
3	Chloromethane	50	1.085	1.085	(0.259)	703134	100.000	97.77
27	cis-1,2-Dichloroethene	96	3.529	3.529	(0.843)	776558	100.000	100.61
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	1219777	100.000	101.81
55	Dibromochloromethane	129	7.176	7.176	(0.936)	810497	100.000	101.00
44	Dibromomethane	93	5.553	5.553	(1.118)	469656	100.000	98.47
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	739202	100.000	100.12
61	Ethylbenzene	106	7.802	7.802	(1.017)	1028416	100.000	99.31
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	461667	100.000	100.18
67	Isopropylbenzene	105	8.563	8.563	(1.116)	3131111	100.000	100.54
62	m,p-Xylenes	106	7.907	7.907	(1.031)	2582956	200.000	200.53(A)
17	Methylene Chloride	84	2.311	2.311	(0.552)	702932	100.000	99.32
87	n-Butylbenzene	91	9.995	9.995	(1.034)	2308605	100.000	103.96
73	n-Propylbenzene	91	8.916	8.916	(0.922)	3608465	100.000	99.84
92	Naphthalene	128	11.543	11.543	(1.194)	569028	100.000	101.93
63	o-Xylene	106	8.245	8.245	(1.075)	1248477	100.000	99.70
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	3060744	100.000	99.10
64	Styrene	104	8.260	8.260	(1.077)	2141037	100.000	103.83
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	2210374	100.000	98.00
56	Tetrachloroethene	164	6.929	6.929	(0.903)	678866	100.000	96.83
50	Toluene	91	6.449	6.449	(0.841)	2931075	100.000	96.44
20	trans-1,2-Dichloroethene	96	2.536	2.536	(0.606)	677550	100.000	99.21
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	1049314	100.000	105.75
38	Trichloroethene	130	5.208	5.208	(1.048)	803862	100.000	99.16
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	1203433	100.000	98.44
5	Vinyl Chloride	62	1.149	1.149	(0.275)	778484	100.000	95.63

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071909.D
Date : 19-JUL-2022 14:14
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\X220719.b\X071909.D
Inj Date : 19-JUL-2022 14:14
InstruID : voa6.i
LabSampID : VSTD100

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071910.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071910.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 19-JUL-2022 14:35
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 14:14 Cal File: X071909.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	796235	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.969	(1.000)	1171801	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	1091116	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	549184	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.980)	1092576	150.000	146.79
$ 35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	1212903	150.000	148.03
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	3736951	150.000	137.26
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	1441404	150.000	149.65
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	1195482	150.000	155.95
31 1,1,1-Trichloroethane	97	4.084	4.084	(0.976)	1707773	150.000	151.19
68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	1135034	150.000	147.15
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	835768	150.000	148.97
22 1,1-Dichloroethane	63	2.926	2.926	(0.699)	1791548	150.000	146.15
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	943462	150.000	141.94
32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	1444196	150.000	152.70
93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	478272	150.000	167.52
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	931744	150.000	156.67(M)
90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	848085	150.000	169.54
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	3955329	150.000	150.14
89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.102)	99187	150.000	151.45

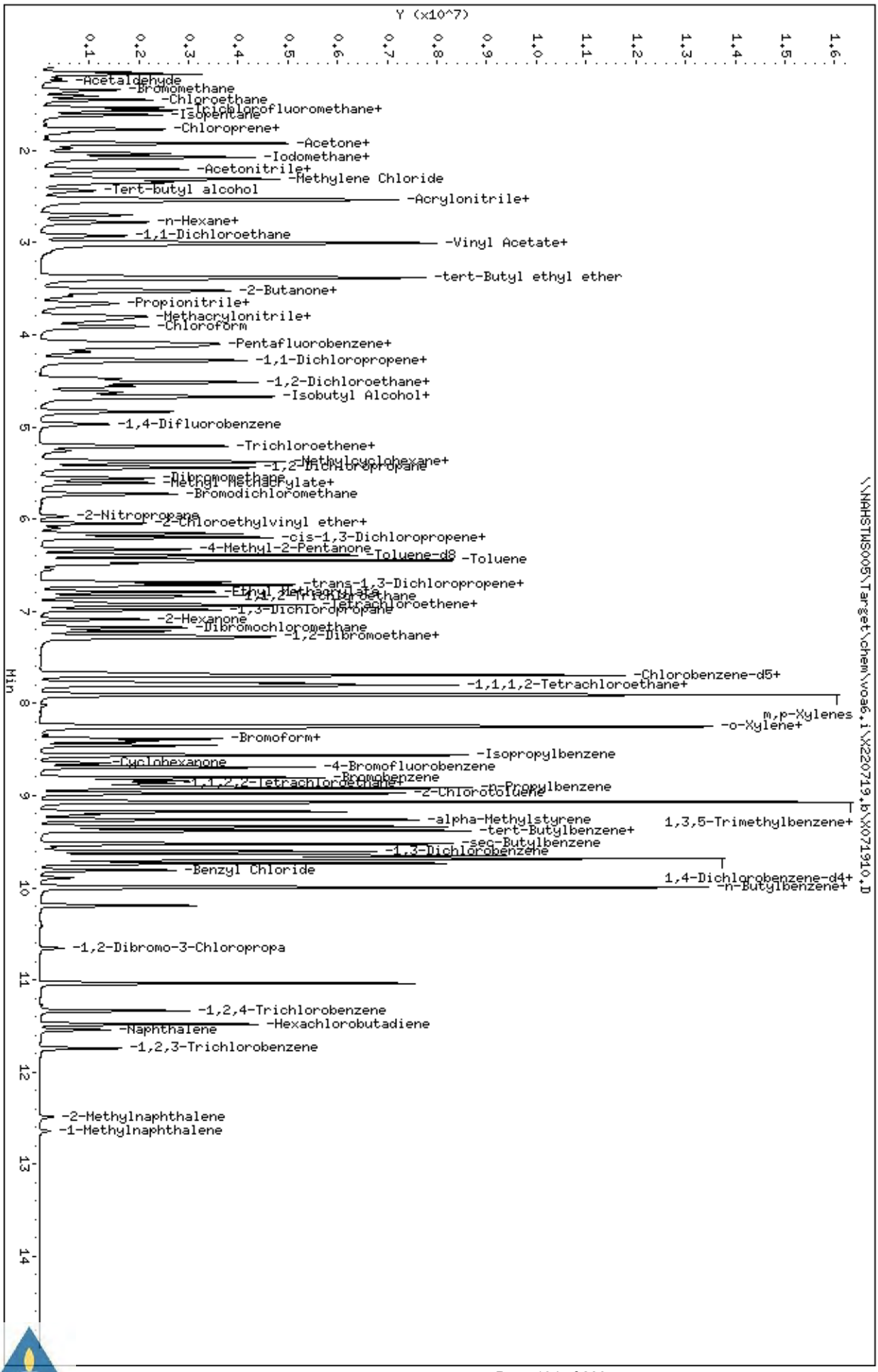
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	1092479	150.000	153.58
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	2079140	150.000	151.30

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071910.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	1482391	150.000	144.24
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	1070151	150.000	148.37
75	1,3,5-Trimethylbenzene	105	9.070	9.070	(0.938)	4008964	150.000	150.28
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	2311073	150.000	151.67
54	1,3-Dichloropropane	76	6.982	6.982	(0.910)	1715864	150.000	150.36
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	2360078	150.000	145.89
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	1641201	150.000	151.24
24	2-Butanone	43	3.582	3.582	(0.856)	642842	300.000	321.82(A)
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	3314698	150.000	140.81
52	2-Hexanone	43	7.087	7.087	(0.924)	1103937	300.000	321.75(A)
77	4-Chlorotoluene	91	9.070	9.070	(0.938)	3879627	150.000	147.65
82	p-Isopropyltoluene	119	9.651	9.651	(0.998)	4157908	150.000	155.21
45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	1655136	300.000	311.31(A)
10	Acetone	43	1.977	1.977	(0.472)	485174	300.000	300.69(A)
37	Benzene	78	4.515	4.515	(0.909)	4062135	150.000	146.29
74	Bromobenzene	156	8.807	8.807	(0.911)	1415416	150.000	150.91
29	Bromochloromethane	128	3.799	3.799	(0.908)	653335	150.000	145.52
39	Bromodichloromethane	83	5.726	5.726	(1.152)	1524319	150.000	154.02
66	Bromoform	173	8.410	8.410	(1.096)	810870	150.000	150.74
6	Bromomethane	94	1.344	1.344	(0.321)	802069	150.000	150.12
19	Carbon Disulfide	76	2.075	2.075	(0.496)	5174750	300.000	294.08(A)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	1493025	150.000	147.70(H)
59	Chlorobenzene	112	7.694	7.694	(1.003)	3132676	150.000	151.41
7	Chloroethane	64	1.407	1.407	(0.336)	733919	150.000	143.70
28	Chloroform	83	3.911	3.911	(0.935)	1980101	150.000	147.43
3	Chloromethane	50	1.085	1.085	(0.259)	1102492	150.000	149.44
27	cis-1,2-Dichloroethene	96	3.529	3.529	(0.843)	1206122	150.000	152.36
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	1917971	150.000	157.77
55	Dibromochloromethane	129	7.176	7.176	(0.935)	1278087	150.000	157.81
44	Dibromomethane	93	5.553	5.553	(1.118)	729812	150.000	150.81
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	1136547	150.000	150.17
61	Ethylbenzene	106	7.803	7.803	(1.017)	1591049	150.000	152.23
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	720247	150.000	155.91
67	Isopropylbenzene	105	8.563	8.563	(1.116)	4840536	150.000	154.01
62	m,p-Xylenes	106	7.907	7.907	(1.031)	4020049	300.000	309.24(A)
17	Methylene Chloride	84	2.307	2.307	(0.551)	1078247	150.000	148.97
87	n-Butylbenzene	91	9.995	9.995	(1.034)	3614158	150.000	162.36
73	n-Propylbenzene	91	8.916	8.916	(0.922)	5561718	150.000	153.51
92	Naphthalene	128	11.544	11.544	(1.194)	950153	150.000	169.80
63	o-Xylene	106	8.245	8.245	(1.075)	1929311	150.000	152.66
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	4735185	150.000	152.94
64	Styrene	104	8.260	8.260	(1.077)	3307549	150.000	158.93
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	3394260	150.000	150.12
56	Tetrachloroethene	164	6.929	6.929	(0.903)	1047361	150.000	148.02
50	Toluene	91	6.449	6.449	(0.841)	4550354	150.000	148.35
20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.605)	1045463	150.000	149.25
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	1642003	150.000	163.10
38	Trichloroethene	130	5.208	5.208	(1.048)	1236555	150.000	150.33
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	1807152	150.000	144.12
5	Vinyl Chloride	62	1.149	1.149	(0.275)	1188248	150.000	142.31

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071910.D
Date : 19-JUL-2022 14:35
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

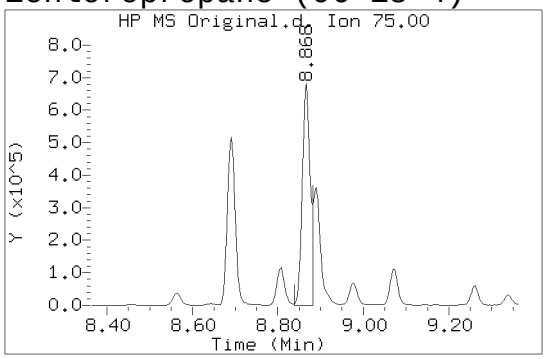
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Inj Date : 19-JUL-2022 14:35
InstruID : voa6.i
LabSampID : VSTD150

1,2,3-Trichloropropane (96-18-4)

Reason Code:

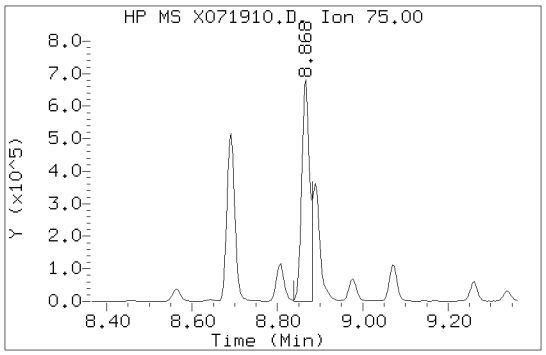
BEFORE

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09:00
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pham



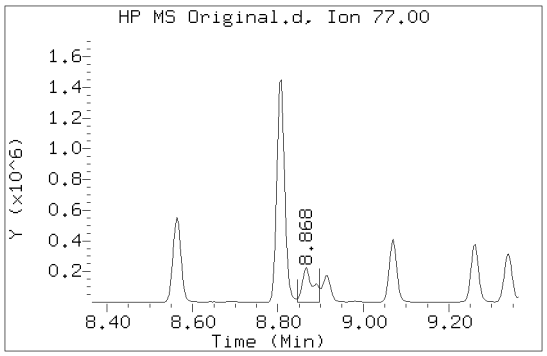
AFTER

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HEIGHT
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19-Aug-2022
10:59
linh
pham



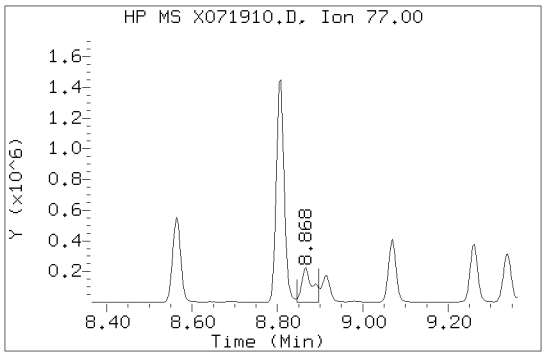
BEFORE

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HEIGHT
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25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
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HEIGHT
224343
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 19-JUL-2022 14:56
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 14:35 Cal File: X071910.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	803738	50.0000	
*	36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1205073	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	1124346	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	554221	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.980)	1508056	200.000	200.99(A)
$	35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	1659515	200.000	200.76(A)
$	48 Toluene-d8	98	6.389	6.389	(0.833)	5194877	200.000	185.18
$	69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	1974506	200.000	199.21
	60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	1612294	200.000	204.10(A)
	31 1,1,1-Trichloroethane	97	4.088	4.088	(0.977)	2254143	200.000	197.69
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	1542895	200.000	198.21
	53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	1135727	200.000	196.46
	22 1,1-Dichloroethane	63	2.925	2.925	(0.699)	2426731	200.000	196.12
	11 1,1-Dichloroethene	96	1.917	1.917	(0.458)	1236595	200.000	184.31
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	1896946	200.000	195.04
	93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	666695	200.000	231.39(A)
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	1167458	200.000	194.52
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	1148206	200.000	227.46(A)
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	5244947	200.000	197.29
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.102)	141749	200.000	199.27

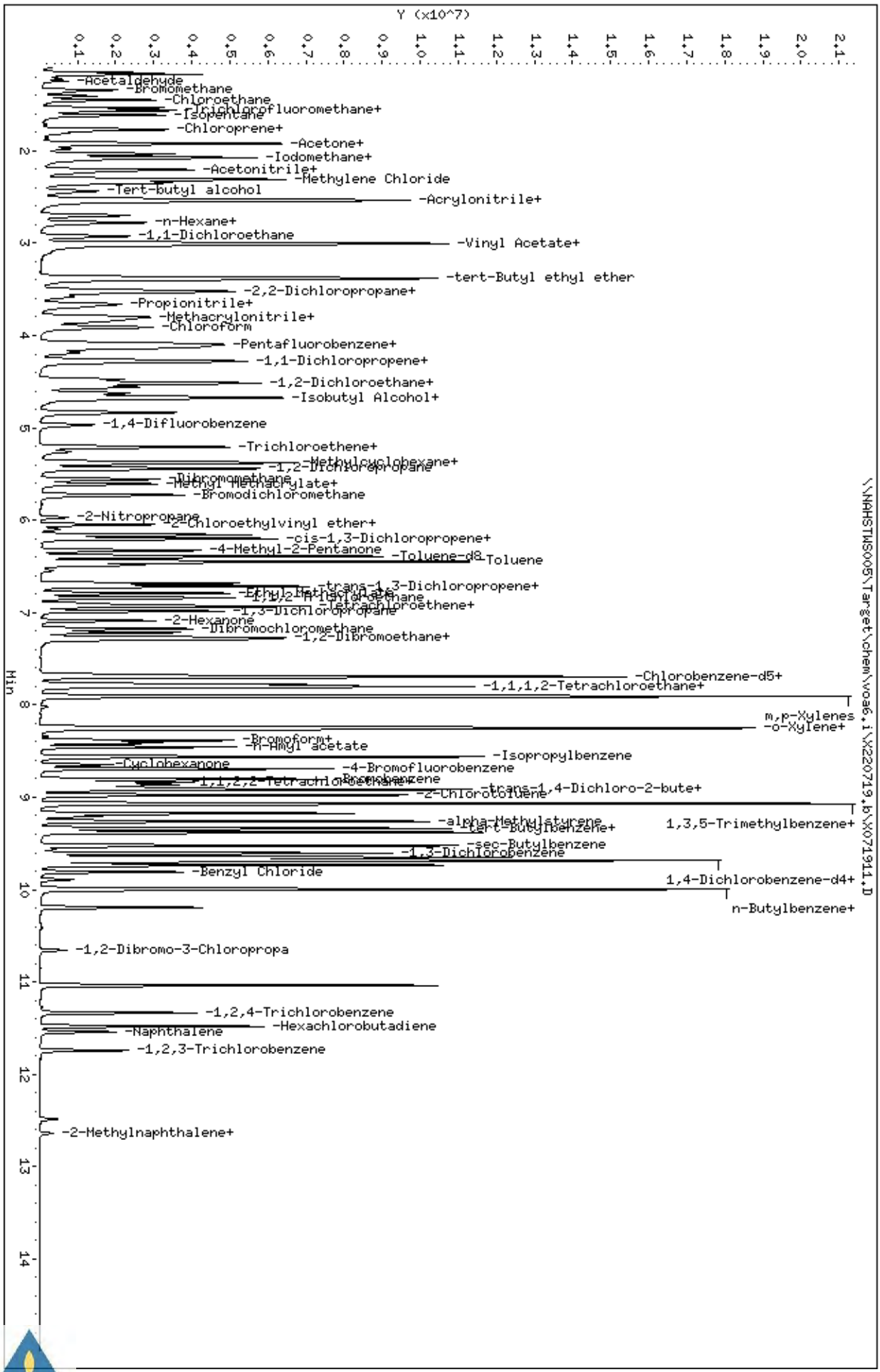
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	1496052	200.000	204.10(A)
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	2799420	200.000	201.86(A)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	2012582	200.000	190.42
42	1,2-Dichloropropane	63	5.437	5.437	(1.094)	1450727	200.000	195.58
75	1,3,5-Trimethylbenzene	105	9.070	9.070	(0.938)	5246350	200.000	194.88
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	3095537	200.000	201.30(A)
54	1,3-Dichloropropane	76	6.985	6.985	(0.911)	2324887	200.000	197.71
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	3163641	200.000	193.79
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	2176392	200.000	198.77
24	2-Butanone	43	3.578	3.578	(0.855)	881176	400.000	437.02(AH)
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	4456010	200.000	187.57
52	2-Hexanone	43	7.086	7.086	(0.924)	1516523	400.000	428.94(A)
77	4-Chlorotoluene	91	9.070	9.070	(0.938)	5189116	200.000	195.69
82	p-Isopropyltoluene	119	9.651	9.651	(0.998)	5441966	200.000	201.30(A)
45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	2269263	400.000	414.21(A)
10	Acetone	43	1.981	1.981	(0.473)	633758	400.000	390.88(A)
37	Benzene	78	4.515	4.515	(0.909)	5472288	200.000	191.63
74	Bromobenzene	156	8.807	8.807	(0.911)	1893902	200.000	200.09(A)
29	Bromochloromethane	128	3.795	3.795	(0.907)	892720	200.000	196.99
39	Bromodichloromethane	83	5.729	5.729	(1.153)	2073168	200.000	203.70(A)
66	Bromoform	173	8.410	8.410	(1.096)	1117306	200.000	201.16(A)
6	Bromomethane	94	1.344	1.344	(0.321)	1068317	200.000	198.52
19	Carbon Disulfide	76	2.075	2.075	(0.496)	6899401	400.000	388.43(A)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	1968804	200.000	189.40(H)
59	Chlorobenzene	112	7.694	7.694	(1.003)	4198880	200.000	196.95
7	Chloroethane	64	1.407	1.407	(0.336)	975969	200.000	189.31
28	Chloroform	83	3.911	3.911	(0.935)	2672684	200.000	197.14
3	Chloromethane	50	1.085	1.085	(0.259)	1500734	200.000	201.51(A)
27	cis-1,2-Dichloroethene	96	3.529	3.529	(0.843)	1625068	200.000	203.37(A)
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	2613041	200.000	209.02(A)
55	Dibromochloromethane	129	7.176	7.176	(0.935)	1744246	200.000	209.01(A)
44	Dibromomethane	93	5.553	5.553	(1.118)	992325	200.000	199.39
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	1493067	200.000	195.49
61	Ethylbenzene	106	7.802	7.802	(1.017)	2112026	200.000	196.11
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	962444	200.000	206.45(A)
67	Isopropylbenzene	105	8.563	8.563	(1.116)	6316064	200.000	195.02
62	m,p-Xylenes	106	7.907	7.907	(1.031)	5292303	400.000	395.08(A)
17	Methylene Chloride	84	2.307	2.307	(0.551)	1463710	200.000	200.64(A)
87	n-Butylbenzene	91	9.995	9.995	(1.034)	4708202	200.000	209.59(A)
73	n-Propylbenzene	91	8.916	8.916	(0.922)	7282081	200.000	199.17
92	Naphthalene	128	11.544	11.544	(1.194)	1361878	200.000	241.16(A)
63	o-Xylene	106	8.245	8.245	(1.075)	2579739	200.000	198.10
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	6146815	200.000	196.74
64	Styrene	104	8.260	8.260	(1.077)	4441868	200.000	207.13(A)
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	4414774	200.000	193.49
56	Tetrachloroethene	164	6.929	6.929	(0.903)	1363627	200.000	187.03
50	Toluene	91	6.449	6.449	(0.841)	6032619	200.000	190.87
20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.605)	1400331	200.000	198.05
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	2241759	200.000	216.52(A)
38	Trichloroethene	130	5.208	5.208	(1.048)	1647543	200.000	194.77
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	2331731	200.000	184.23
5	Vinyl Chloride	62	1.149	1.149	(0.275)	1561762	200.000	185.30

QC Flag Legend

A - Target compound detected but, quantitated amount
exceeded maximum amount.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D
Date : 19-JUL-2022 14:56
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

\\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071911.D
Inj Date : 19-JUL-2022 14:56
InstruID : voa6.i
LabSampID : VSTD200

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071915.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071915.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 19-JUL-2022 16:20
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;ICV
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 14:56 Cal File: X071911.D
Als bottle: 16 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	803279	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.968	(1.000)	1177898	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	1099931	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.666	(1.000)	554211	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.980)	393451	51.9327	51.93
$ 35 1,2-Dichloroethane-d4	65	4.478	4.474	(1.070)	422461	50.8929	50.89
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1372695	50.0189	50.01
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	511712	52.1682	52.16
60 1,1,1,2-Tetrachloroethane	131	7.773	7.776	(1.013)	375568	48.6005	48.60
31 1,1,1-Trichloroethane	97	4.088	4.088	(0.977)	538729	47.2761	47.27
68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	372935	47.9121	47.91
53 1,1,2-Trichloroethane	83	6.839	6.843	(0.892)	269933	47.7307	47.73
22 1,1-Dichloroethane	63	2.929	2.925	(0.700)	575772	46.5590	46.55
11 1,1-Dichloroethene	96	1.921	1.917	(0.459)	306381	45.6913	45.69
32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	455600	47.9253	47.92
93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	168688	58.5498	58.54
71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	277578	46.2518	46.25
90 1,2,4-Trichlorobenzene	180	11.338	11.337	(1.173)	285078	56.4761	56.47
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1296372	48.7653	48.76
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.655	(1.103)	32044	54.3117	54.31

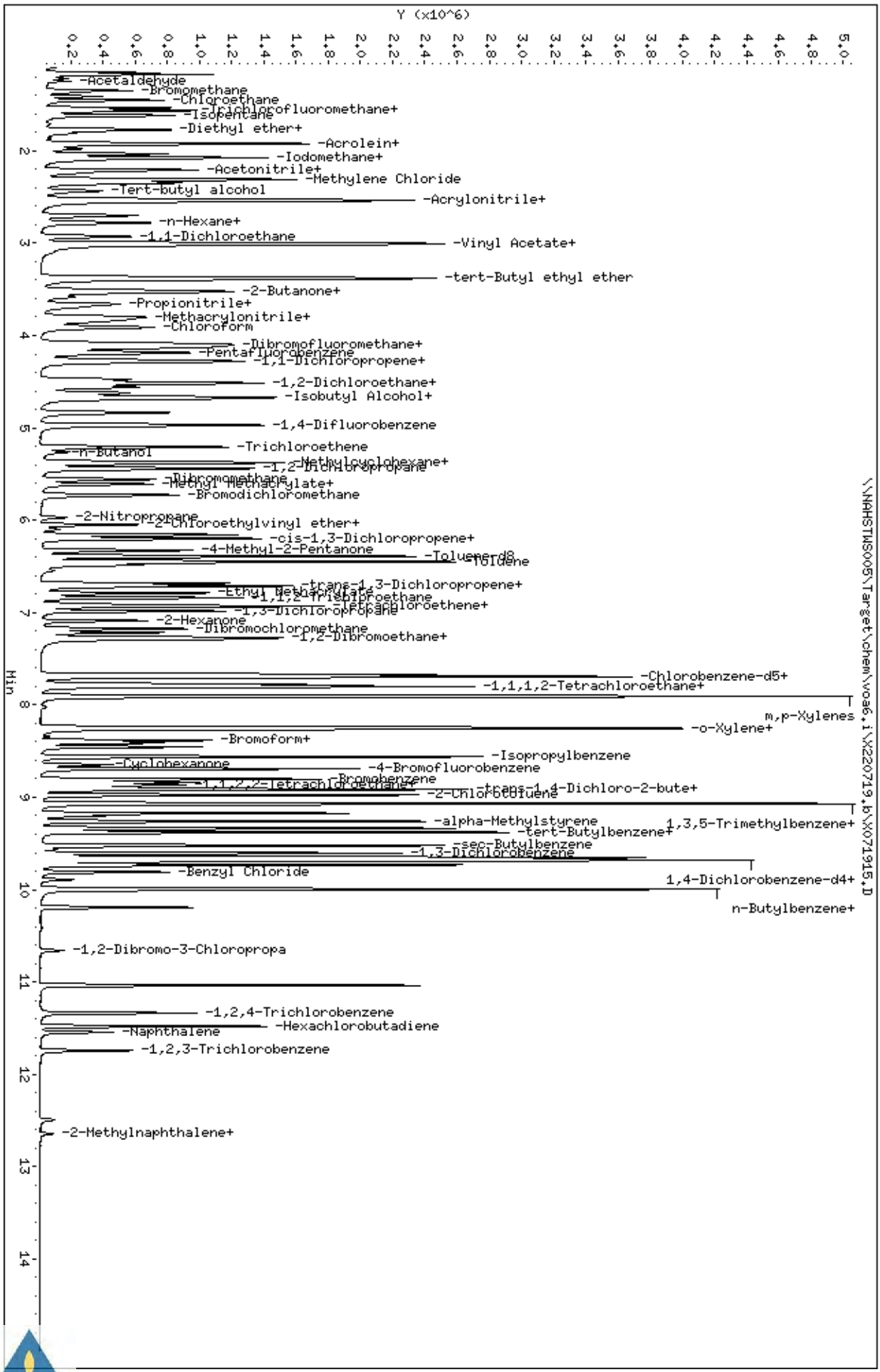
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	355369	49.5585	49.55
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	690253	49.7749	49.77

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071915.D Page 2
Report Date: 19-Aug-2022 11:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	487745	47.2147	47.21
42	1,2-Dichloropropane	63	5.437	5.437	(1.094)	341934	47.1626	47.16
75	1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	1283913	47.6934	47.69
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	756362	49.1885	49.18
54	1,3-Dichloropropane	76	6.982	6.985	(0.910)	552590	48.0362	48.03
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	785297	48.1053	48.10
26	2,2-Dichloropropane	77	3.514	3.514	(0.840)	537177	48.9036	48.90
24	2-Butanone	43	3.582	3.578	(0.856)	214703	106.544	106.54
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	1080955	45.5033	45.50
52	2-Hexanone	43	7.090	7.086	(0.924)	360829	104.326	104.32
77	4-Chlorotoluene	91	9.070	9.070	(0.939)	1262067	47.5975	47.59
82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	1319696	48.8179	48.81
45	4-Methyl-2-Pentanone	43	6.326	6.329	(0.825)	541981	101.124	101.12
10	Acetone	43	1.981	1.981	(0.473)	197688	117.868	117.86(M)
37	Benzene	78	4.515	4.515	(0.909)	1304561	46.7389	46.73
74	Bromobenzene	156	8.807	8.807	(0.912)	455307	48.1063	48.10
29	Bromochloromethane	128	3.799	3.795	(0.908)	208389	46.0110	46.01
39	Bromodichloromethane	83	5.726	5.729	(1.152)	484620	48.7163	48.71
66	Bromoform	173	8.410	8.410	(1.096)	257179	48.2740	48.27
6	Bromomethane	94	1.347	1.344	(0.322)	266154	48.4591	48.45
19	Carbon Disulfide	76	2.075	2.075	(0.496)	1671660	94.1671	94.16
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	466337	45.8974	45.89
59	Chlorobenzene	112	7.694	7.694	(1.003)	1006409	48.2555	48.25
7	Chloroethane	64	1.411	1.407	(0.337)	237277	46.0533	46.05
28	Chloroform	83	3.911	3.911	(0.935)	637932	47.0823	47.08
3	Chloromethane	50	1.085	1.085	(0.259)	356275	47.9064	47.90
27	cis-1,2-Dichloroethene	96	3.529	3.529	(0.843)	386717	48.4238	48.42
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	612279	50.1068	50.10
55	Dibromochloromethane	129	7.177	7.176	(0.936)	406162	49.7511	49.75
44	Dibromomethane	93	5.553	5.553	(1.118)	234821	48.2731	48.27
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	375605	49.0784	49.07
61	Ethylbenzene	106	7.803	7.802	(1.017)	511365	48.5367	48.53
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	238144	51.0844	51.08
67	Isopropylbenzene	105	8.564	8.563	(1.116)	1527409	48.2102	48.21
62	m,p-Xylenes	106	7.908	7.907	(1.031)	1298578	99.0935	99.09
17	Methylene Chloride	84	2.311	2.307	(0.552)	354520	47.9623	47.96
87	n-Butylbenzene	91	9.995	9.995	(1.035)	1136334	50.5879	50.58
73	n-Propylbenzene	91	8.912	8.916	(0.922)	1768242	48.3643	48.36
92	Naphthalene	128	11.544	11.544	(1.195)	334786	59.2863	59.28
63	o-Xylene	106	8.245	8.245	(1.075)	614343	48.2233	48.22
81	sec-Butylbenzene	105	9.523	9.523	(0.986)	1490865	47.7190	47.71
64	Styrene	104	8.260	8.260	(1.077)	1058982	50.4779	50.47
78	tert-Butylbenzene	119	9.336	9.339	(0.966)	1080631	47.3631	47.36
56	Tetrachloroethene	164	6.929	6.929	(0.903)	336020	47.1110	47.11
50	Toluene	91	6.449	6.449	(0.841)	1460598	47.2387	47.23
20	trans-1,2-Dichloroethene	96	2.536	2.532	(0.606)	332737	47.0862	47.08
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	513764	50.7687	50.76
38	Trichloroethene	130	5.208	5.208	(1.048)	394013	47.6543	47.65
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	594796	47.0222	47.02
5	Vinyl Chloride	62	1.149	1.149	(0.275)	384663	45.6676	45.66

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071915.D
Date : 19-JUL-2022 16:20
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

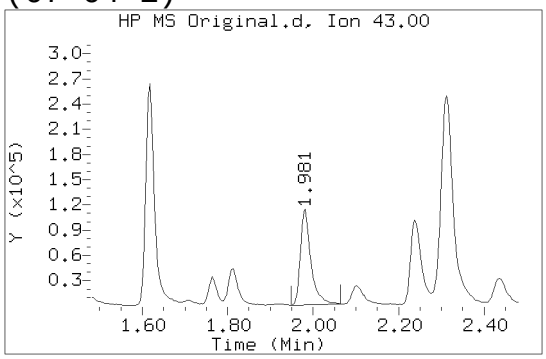
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Inj Date : 19-JUL-2022 16:20
InstruID : voa6.i
LabSampID : ICV

Acetone (67-64-1)

Reason Code:

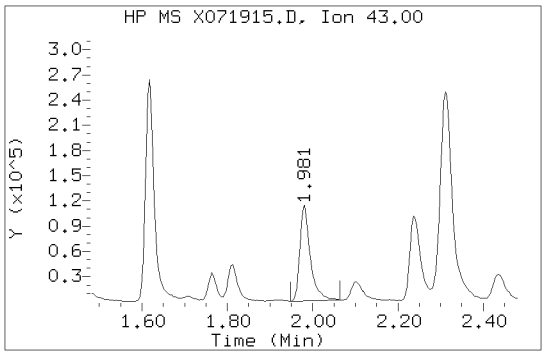
BEFORE

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AREA
384663
HEIGHT
343232
25-Jul-2022
09:00
linh
pham



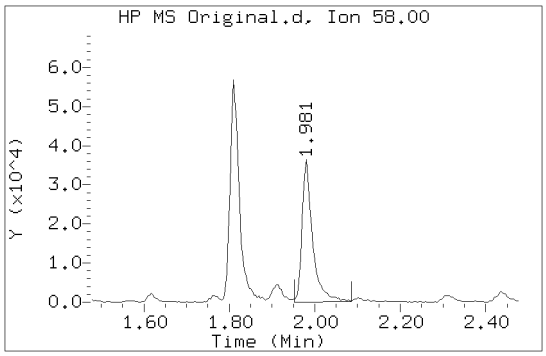
AFTER

MASS
43
AREA
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HEIGHT
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19-Aug-2022
10:59
linh
pham



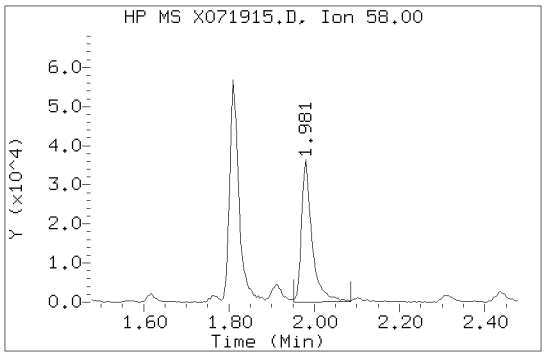
BEFORE

MASS
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25-Jul-2022
09:00
linh
pham



AFTER

MASS
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AREA
63852
HEIGHT
36330
19-Aug-2022
10:59
linh
pham



right solutions.
right partner.

Raw Data VOA6 415286

Volatiles Organics by Method 8260C

Workorder

HS22080897

Client

Bhate Environmental Associates, Inc.

Project

Longhorn GW Treatment Plant Bi-Weekly Samples

08/19/2022

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081701.D Page 1
Report Date: 17-Aug-2022 11:29

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081701.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 17-AUG-2022 10:40
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\bfb.m
Meth Date : 26-Jul-2022 15:17 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)		
RT	EXP RT	REL RT	MASS	RESPONSE			TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
8.691	8.889	(0.000)	95	115392			0.00- 100.00	100.00
8.691	8.889	(0.000)	50	21632			15.00- 40.00	18.75
8.691	8.889	(0.000)	75	57872			30.00- 60.00	50.15
8.691	8.889	(0.000)	96	8263			5.00- 9.00	7.16
8.691	8.889	(0.000)	173	691			0.00- 2.00	0.69
8.691	8.889	(0.000)	174	99584			50.00- 0.00	86.30
8.691	8.889	(0.000)	175	6565			5.00- 9.00	6.59
8.691	8.889	(0.000)	176	95920			95.00- 101.00	96.32
8.691	8.889	(0.000)	177	6864			5.00- 9.00	7.16

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.75
75	30.00 - 60.00% of mass 95	50.15
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.60 (0.69)
174	Greater than 50.00% of mass 95	86.30
175	5.00 - 9.00% of mass 174	5.69 (6.59)
176	95.00 - 101.00% of mass 174	83.13 (96.32)
177	5.00 - 9.00% of mass 176	5.95 (7.16)

Data File: X081701.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 117

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1328	66.00	79	98.90	108	145.80	73
37.10	5800	67.00	364	102.00	85	146.60	59
38.00	4896	68.00	11350	103.10	136	147.80	271
39.10	3024	69.00	12708	103.90	742	149.90	122
40.00	1107	70.10	1947	105.10	502	152.90	99
41.00	1333	71.00	356	105.90	450	153.90	99
42.10	1926	71.90	646	106.90	140	154.90	317
43.10	1046	73.00	4408	108.80	64	157.00	432
44.00	1235	74.00	19864	109.60	87	158.70	114
45.10	862	75.00	57872	110.80	57	160.90	136
45.90	53	76.00	5021	111.80	100	168.20	108
46.90	1003	77.00	950	114.80	416	169.10	174
47.90	689	77.90	800	116.00	328	170.00	240
49.10	4990	78.90	4023	116.90	1125	170.70	70
50.00	21632	80.00	1050	117.90	430	171.90	145
51.00	7608	80.90	3384	119.00	680	173.00	691
52.00	509	81.90	767	119.90	70	173.90	99584
53.00	348	83.00	382	121.10	124	174.90	6565
54.00	283	84.90	280	126.70	50	175.90	95920
55.00	2840	85.90	189	127.90	509	176.90	6864
56.00	2058	87.00	5367	129.00	312	177.90	136
57.00	3611	88.00	5180	129.80	487	183.80	141
57.90	372	91.00	631	130.70	121	185.20	90
58.90	133	92.00	2819	135.10	149	186.10	693
60.00	1129	93.00	4284	136.80	158	187.10	81
61.00	5845	94.00	13173	139.00	125	261.90	169
62.00	4725	95.00	115392	140.90	1301	278.10	94
63.00	4190	96.00	8263	141.80	223		
64.00	495	97.00	402	143.00	1308		
64.90	160	98.00	1075	143.90	66		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081701.D Page 1

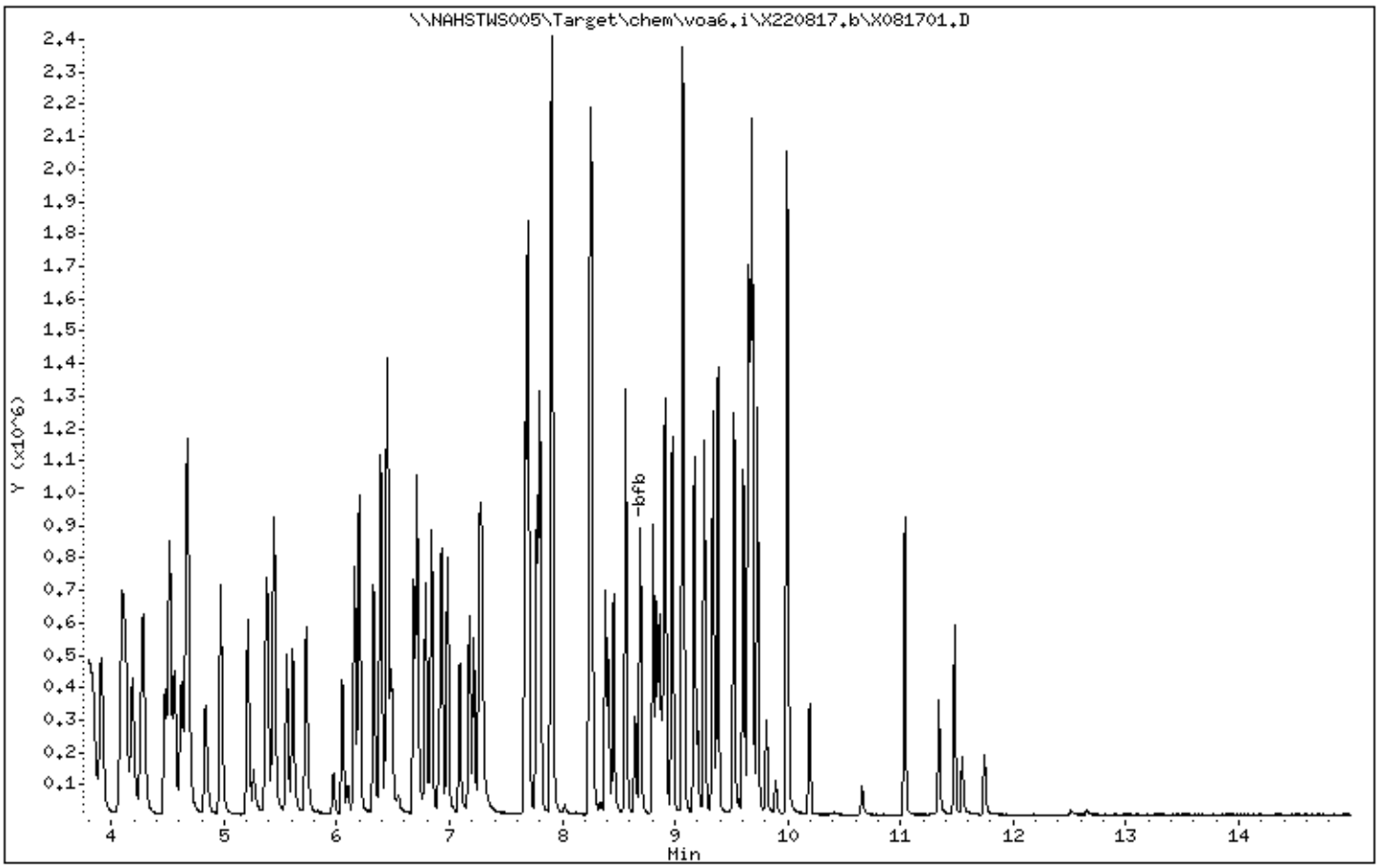
Date : 17-AUG-2022 10:40

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\X220817.b\X081701.D Page 2

Date : 17-AUG-2022 10:40

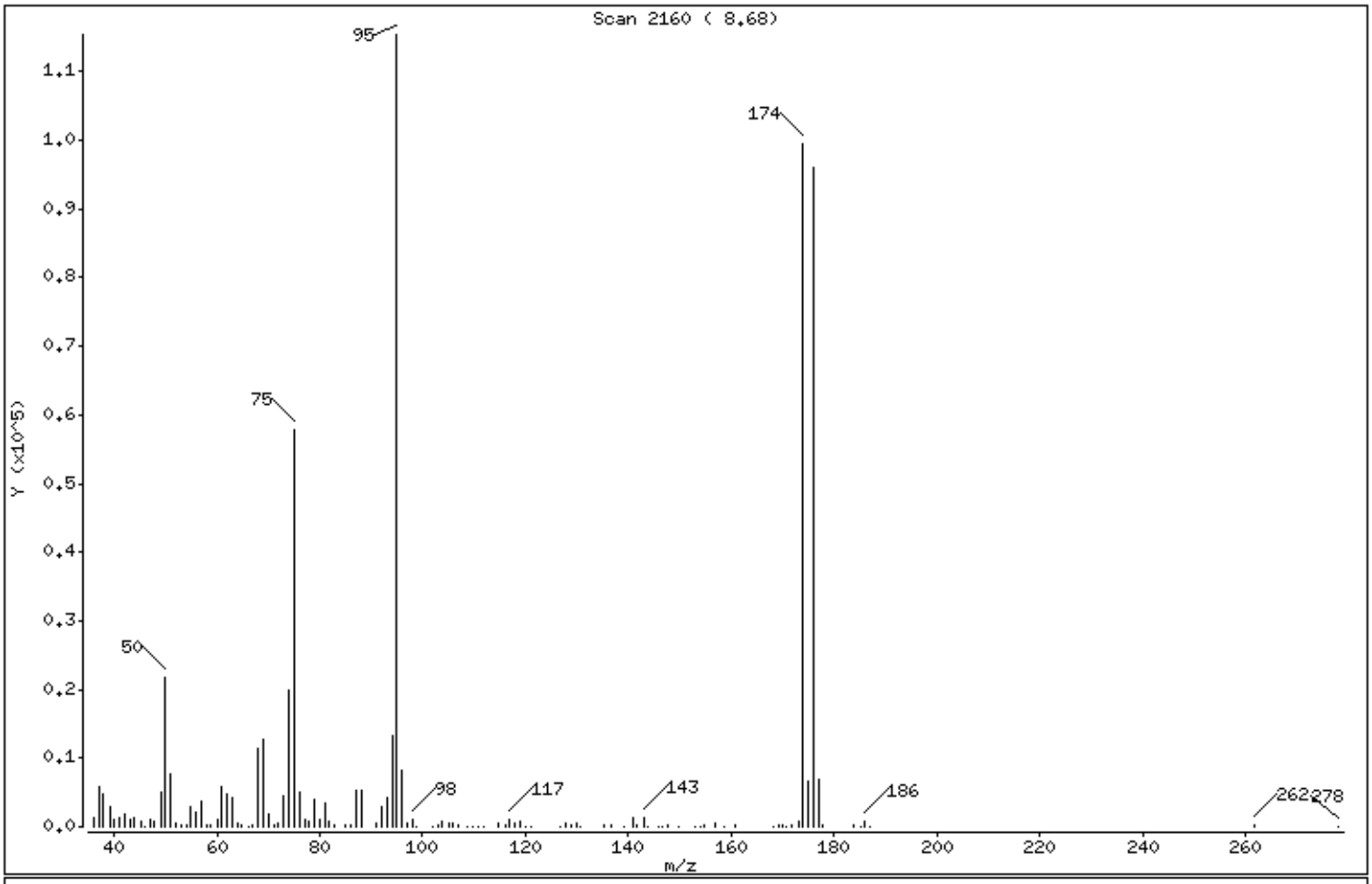
Client ID: BFB Instrument: voa6.i

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	18.75
75	30.00 - 60.00% of mass 95	50.15
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.60 (0.69)
174	Greater than 50.00% of mass 95	86.30
175	5.00 - 9.00% of mass 174	5.69 (6.59)
176	95.00 - 101.00% of mass 174	83.13 (96.32)
177	5.00 - 9.00% of mass 176	5.95 (7.16)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081701.D

Date : 17-AUG-2022 10:40

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: X081701.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 117

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1328	66.00	79	98.90	108	145.80	73
37.10	5800	67.00	364	102.00	85	146.60	59
38.00	4896	68.00	11350	103.10	136	147.80	271
39.10	3024	69.00	12708	103.90	742	149.90	122
40.00	1107	70.10	1947	105.10	502	152.90	99
41.00	1333	71.00	356	105.90	450	153.90	99
42.10	1926	71.90	646	106.90	140	154.90	317
43.10	1046	73.00	4408	108.80	64	157.00	432
44.00	1235	74.00	19864	109.60	87	158.70	114
45.10	862	75.00	57872	110.80	57	160.90	136
45.90	53	76.00	5021	111.80	100	168.20	108
46.90	1003	77.00	950	114.80	416	169.10	174
47.90	689	77.90	800	116.00	328	170.00	240
49.10	4990	78.90	4023	116.90	1125	170.70	70
50.00	21632	80.00	1050	117.90	430	171.90	145
51.00	7608	80.90	3384	119.00	680	173.00	691
52.00	509	81.90	767	119.90	70	173.90	99584
53.00	348	83.00	382	121.10	124	174.90	6565
54.00	283	84.90	280	126.70	50	175.90	95920
55.00	2840	85.90	189	127.90	509	176.90	6864
56.00	2058	87.00	5367	129.00	312	177.90	136
57.00	3611	88.00	5180	129.80	487	183.80	141
57.90	372	91.00	631	130.70	121	185.20	90
58.90	133	92.00	2819	135.10	149	186.10	693
60.00	1129	93.00	4284	136.80	158	187.10	81
61.00	5845	94.00	13173	139.00	125	261.90	169
62.00	4725	95.00	115392	140.90	1301	278.10	94
63.00	4190	96.00	8263	141.80	223		
64.00	495	97.00	402	143.00	1308		
64.90	160	98.00	1075	143.90	66		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081702.D Page 1
Report Date: 19-Aug-2022 11:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081702.D
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Inj Date : 17-AUG-2022 11:01
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	562938	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	841313	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	790177	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	380247	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	284558	50.0000	53.61
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.070)	316070	50.0000	54.35
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	995551	50.0000	50.49
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	359193	50.0000	50.95
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	303356	50.0000	54.64
31 1,1,1-Trichloroethane	97	4.088	4.088	(0.977)	430185	50.0000	53.86
68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.914)	291622	50.0000	54.60
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	212732	50.0000	52.36
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	448923	50.0000	51.80
11 1,1-Dichloroethene	96	1.925	1.925	(0.460)	219211	50.0000	46.64
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	362748	50.0000	53.42
93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	104395	50.0000	52.81
71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	235201	50.0000	57.12(M)
90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	191616	50.0000	55.32
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1041749	50.0000	57.11
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	23167	50.0000	57.06

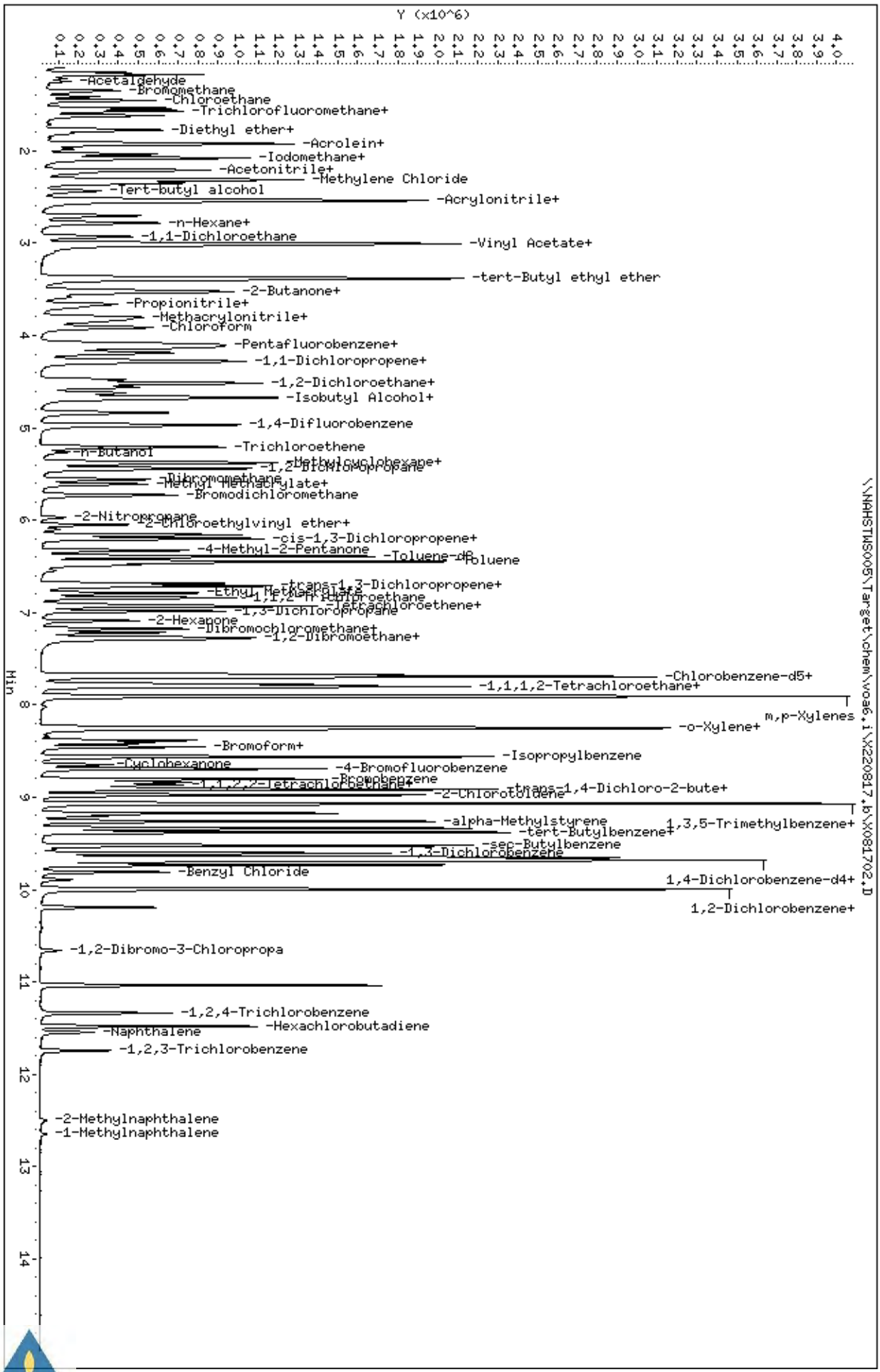
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	273354	50.0000	53.06
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	534326	50.0000	56.15

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081702.D Page 2
Report Date: 19-Aug-2022 11:31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	397165	50.0000	53.82
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	276218	50.0000	53.34
75	1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	1050834	50.0000	56.89
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	595004	50.0000	56.39
54	1,3-Dichloropropane	76	6.982	6.982	(0.910)	434226	50.0000	52.54
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	611275	50.0000	54.57
26	2,2-Dichloropropane	77	3.518	3.518	(0.841)	430427	50.0000	55.95
24	2-Butanone	43	3.585	3.585	(0.857)	149286	100.000	105.70
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	885098	50.0000	54.30
52	2-Hexanone	43	7.090	7.090	(0.924)	272029	100.000	109.48
77	4-Chlorotoluene	91	9.069	9.069	(0.938)	1022316	50.0000	56.19
82	p-Isopropyltoluene	119	9.651	9.651	(0.998)	1086547	50.0000	58.58
45	4-Methyl-2-Pentanone	43	6.325	6.325	(0.825)	425602	100.000	110.53
10	Acetone	43	1.981	1.981	(0.473)	119056	100.000	100.44
37	Benzene	78	4.515	4.515	(0.909)	1027107	50.0000	51.52
74	Bromobenzene	156	8.807	8.807	(0.911)	359838	50.0000	55.41
29	Bromochloromethane	128	3.799	3.799	(0.908)	159145	50.0000	50.14
39	Bromodichloromethane	83	5.729	5.729	(1.153)	389635	50.0000	54.83
66	Bromoform	173	8.410	8.410	(1.096)	197620	50.0000	51.54
6	Bromomethane	94	1.347	1.347	(0.322)	177031	50.0000	45.92
19	Carbon Disulfide	76	2.078	2.078	(0.497)	1250012	100.000	100.47
34	Carbon Tetrachloride	117	4.267	4.267	(0.859)	372902	50.0000	51.38
59	Chlorobenzene	112	7.694	7.694	(1.003)	799900	50.0000	53.38
7	Chloroethane	64	1.411	1.411	(0.337)	176101	50.0000	48.77
28	Chloroform	83	3.911	3.911	(0.935)	505360	50.0000	53.22
3	Chloromethane	50	1.085	1.085	(0.259)	314231	50.0000	60.27
27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.844)	302042	50.0000	53.96
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	487954	50.0000	55.90
55	Dibromochloromethane	129	7.176	7.176	(0.935)	315705	50.0000	53.83
44	Dibromomethane	93	5.557	5.557	(1.118)	179903	50.0000	51.77
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	285294	50.0000	53.20
61	Ethylbenzene	106	7.802	7.802	(1.017)	408236	50.0000	53.93
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	178186	50.0000	55.70
67	Isopropylbenzene	105	8.563	8.563	(1.116)	1260918	50.0000	55.40
62	m,p-Xylenes	106	7.907	7.907	(1.031)	1027424	100.000	109.13
17	Methylene Chloride	84	2.311	2.311	(0.552)	277604	50.0000	53.69
87	n-Butylbenzene	91	9.995	9.995	(1.034)	935084	50.0000	60.67(M)
73	n-Propylbenzene	91	8.912	8.912	(0.922)	1468548	50.0000	58.54
92	Naphthalene	128	11.547	11.547	(1.195)	212018	50.0000	54.72
63	o-Xylene	106	8.245	8.245	(1.075)	490556	50.0000	53.60
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	1247977	50.0000	58.21
64	Styrene	104	8.260	8.260	(1.077)	833073	50.0000	55.27
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	892313	50.0000	57.00
56	Tetrachloroethene	164	6.929	6.929	(0.903)	264013	50.0000	51.52
50	Toluene	91	6.449	6.449	(0.841)	1155687	50.0000	52.02
20	trans-1,2-Dichloroethene	96	2.536	2.536	(0.606)	260542	50.0000	52.61
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.345)	410516	50.0000	56.79
38	Trichloroethene	130	5.208	5.208	(1.048)	306351	50.0000	51.87
8	Trichlorofluoromethane	101	1.568	1.568	(0.375)	436660	50.0000	49.25
5	Vinyl Chloride	62	1.152	1.152	(0.275)	282970	50.0000	47.93

QC Flag Legend

M - Compound response manually integrated.



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Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

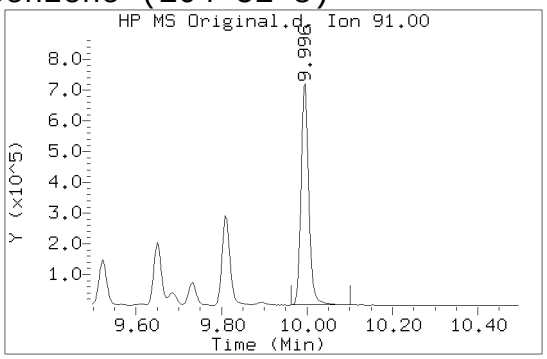
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InstruID : voa6.i
LabSampID : CCV

n-Butylbenzene (104-51-8)

Reason Code:

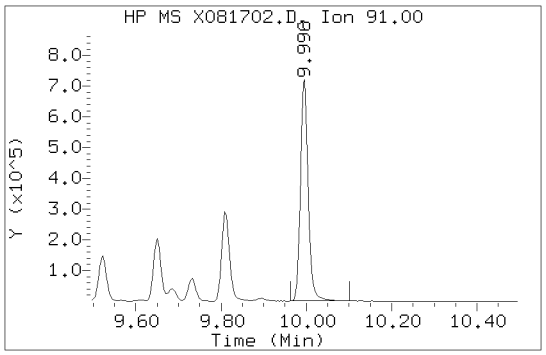
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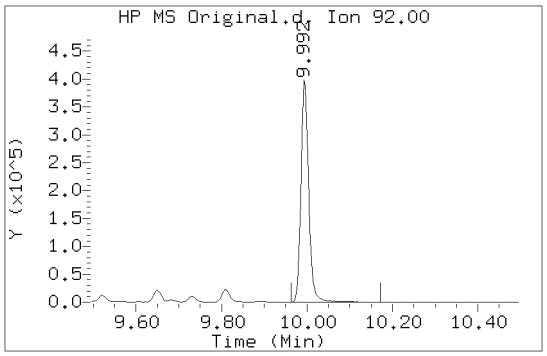
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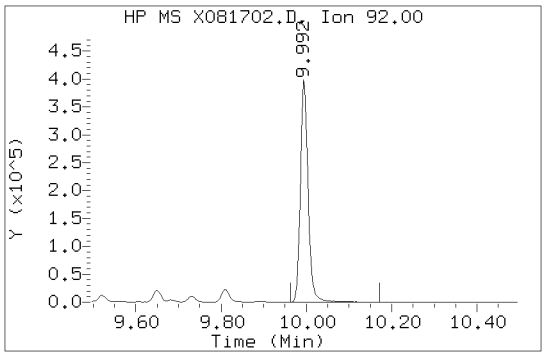
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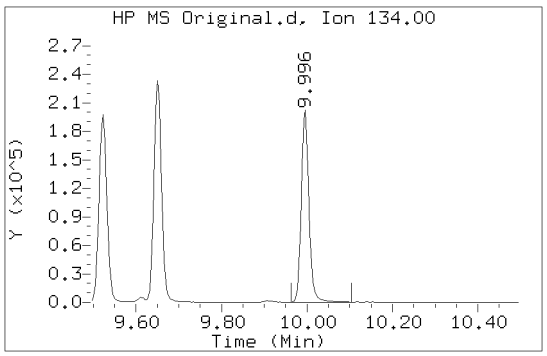
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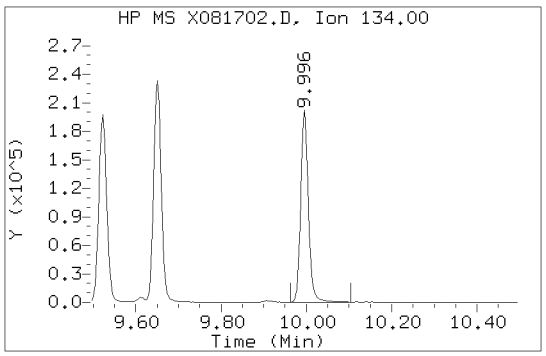
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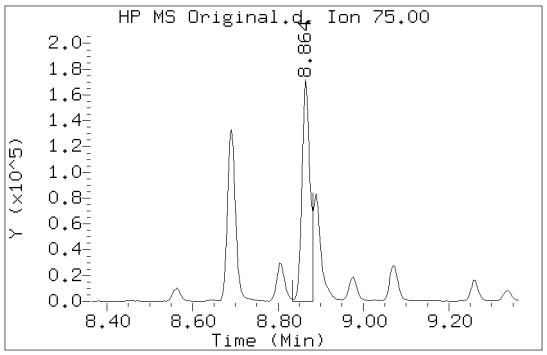


1,2,3-Trichloropropane (96-18-4)

Reason Code:

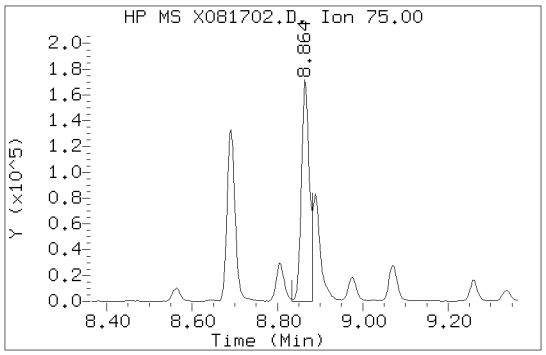
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19-Aug-2022
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AFTER

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19-Aug-2022
11:31
linh
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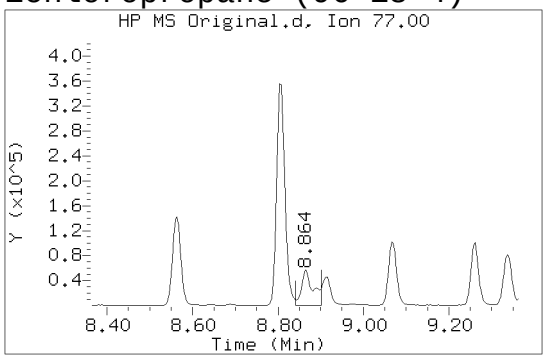
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LabSampID : CCV

1,2,3-Trichloropropane (96-18-4)

Reason Code:

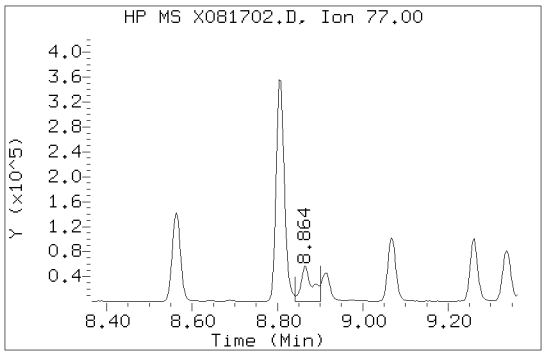
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19-Aug-2022
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AFTER

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110687
HEIGHT
56420
19-Aug-2022
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Report Date: 17-Aug-2022 20:34

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081704.D
Lab Smp Id: CCB Client Smp ID: CCB
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Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 17-Aug-2022 16:54 pcabasca Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTWS005

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	4.185	(1.000)	660564	50.0000	
$ 30 Dibromofluoromethane	113	4.102	4.106	(0.979)	294603	47.2215	47.22
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.069)	332382	48.6781	48.67
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	935636	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	814001	50.0000	
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1087808	53.5615	53.56
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	352210	48.4625	48.46
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.666	(1.000)	355119	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081705.D Page 1
Report Date: 19-Aug-2022 11:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081705.D
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Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	(1.000)	569887	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	849870	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	783370	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.666	(1.000)	375034	50.0000	
$ 30 Dibromofluoromethane	113	4.102	4.106	(0.979)	281889	52.4524	52.45
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.069)	306542	52.0596	52.05
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	983035	50.2953	50.29
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	352633	50.4512	50.45
60 1,1,1,2-Tetrachloroethane	131	7.772	7.776	(1.013)	120524	21.8990	21.89
31 1,1,1-Trichloroethane	97	4.087	4.088	(0.976)	174791	21.6206	21.62
68 1,1,2,2-Tetrachloroethane	83	8.841	8.837	(0.915)	113581	21.5636	21.56
53 1,1,2-Trichloroethane	83	6.843	6.839	(0.892)	84472	20.9727	20.97
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	185206	21.1099	21.10
11 1,1-Dichloroethene	96	1.921	1.925	(0.459)	92215	19.3843	19.38
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	149089	21.7361	21.73
93 1,2,3-Trichlorobenzene	180	11.746	11.742	(1.215)	47477	24.3517	24.35
71 1,2,3-Trichloropropane	75	8.867	8.863	(0.917)	85784	21.1229	21.12(M)
90 1,2,4-Trichlorobenzene	180	11.341	11.337	(1.173)	78661	23.0285	23.02
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	418864	23.2840	23.28
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	8955	23.2952	23.29

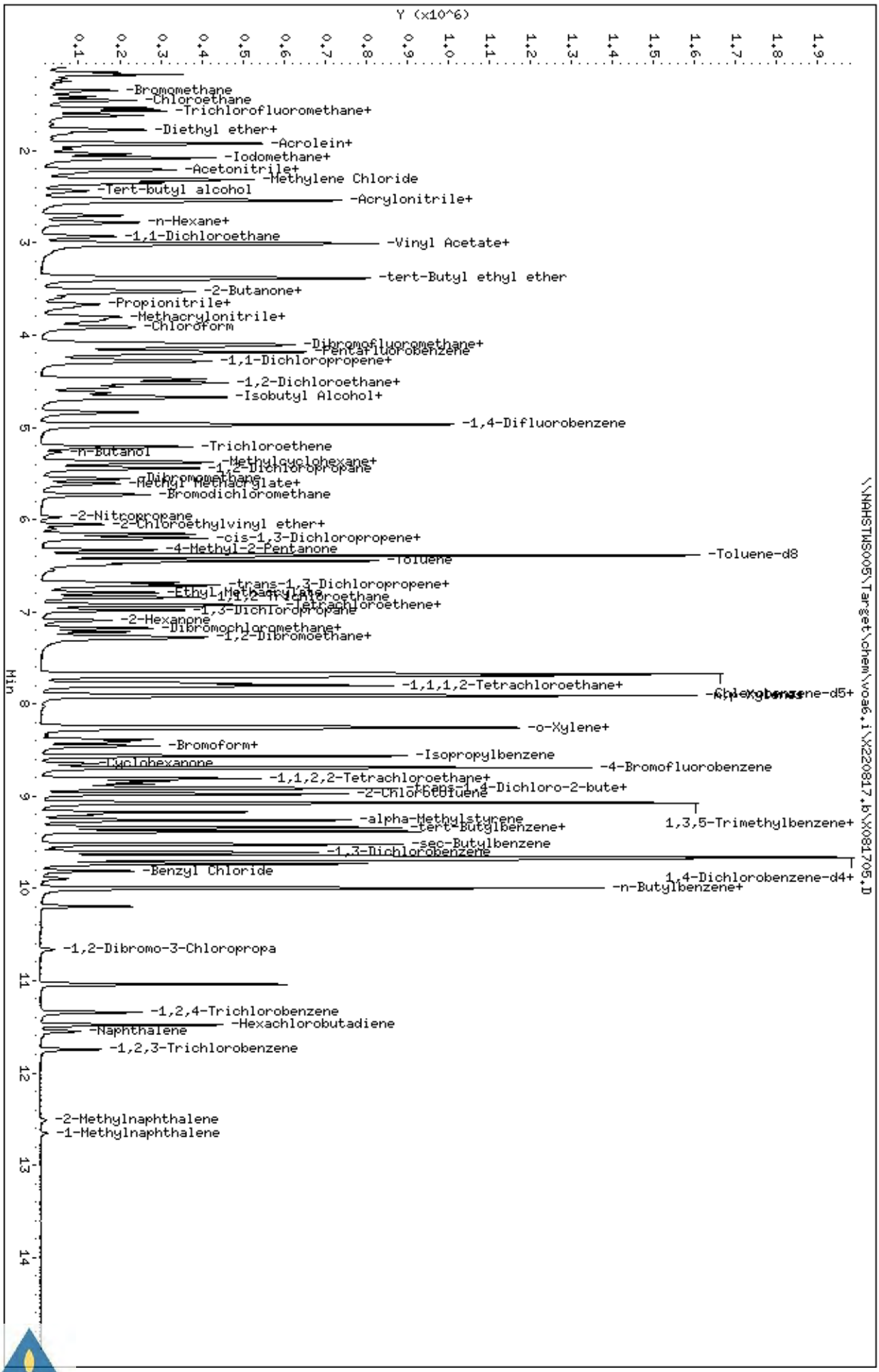
57 1,2-Dibromoethane	107	7.266	7.263 (0.947)	106840	20.9205	20.92
88 1,2-Dichlorobenzene	146	9.995	9.992 (1.034)	211110	22.4965	22.49

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081705.D Page 2
Report Date: 19-Aug-2022 11:31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
33	1,2-Dichloroethane	62	4.564	4.560	(0.919)	156738	21.0288	21.02
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	110478	21.1196	21.11
75	1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	421323	23.1282	23.12
83	1,3-Dichlorobenzene	146	9.609	9.606	(0.994)	235493	22.6316	22.63
54	1,3-Dichloropropane	76	6.985	6.982	(0.911)	171404	20.9211	20.92
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	245018	22.1800	22.18
26	2,2-Dichloropropane	77	3.514	3.518	(0.839)	175810	22.4267	22.42
24	2-Butanone	43	3.593	3.585	(0.858)	56158	39.2808	39.28
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	357564	22.2430	22.24
52	2-Hexanone	43	7.094	7.090	(0.925)	103439	41.9928	41.99
77	4-Chlorotoluene	91	9.069	9.069	(0.938)	403803	22.5049	22.50
82	p-Isopropyltoluene	119	9.650	9.651	(0.998)	437327	23.9065	23.90
45	4-Methyl-2-Pentanone	43	6.329	6.325	(0.825)	165644	43.3956	43.39
10	Acetone	43	1.981	1.981	(0.473)	50415	38.5246	38.52
37	Benzene	78	4.519	4.515	(0.909)	414381	20.5764	20.57
74	Bromobenzene	156	8.807	8.807	(0.911)	142271	22.2136	22.21
29	Bromochloromethane	128	3.803	3.799	(0.908)	63144	19.6515	19.65
39	Bromodichloromethane	83	5.729	5.729	(1.153)	152077	21.1881	21.18
66	Bromoform	173	8.413	8.410	(1.097)	72202	19.7768	19.77
6	Bromomethane	94	1.351	1.347	(0.323)	77016	18.9534	18.95
19	Carbon Disulfide	76	2.078	2.078	(0.496)	508296	40.3595	40.35
34	Carbon Tetrachloride	117	4.271	4.267	(0.860)	149047	20.3313	20.33
59	Chlorobenzene	112	7.697	7.694	(1.003)	319055	21.4801	21.48
7	Chloroethane	64	1.411	1.411	(0.337)	70467	19.2783	19.27
28	Chloroform	83	3.911	3.911	(0.934)	206053	21.4358	21.43
3	Chloromethane	50	1.085	1.085	(0.259)	124663	23.6543	23.65
27	cis-1,2-Dichloroethene	96	3.536	3.533	(0.844)	121200	21.3917	21.39
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	185570	21.0480	21.04
55	Dibromochloromethane	129	7.176	7.176	(0.936)	120234	20.6790	20.67
44	Dibromomethane	93	5.557	5.557	(1.118)	73060	20.8163	20.81
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	113816	20.8630	20.86
61	Ethylbenzene	106	7.802	7.802	(1.017)	165574	22.0663	22.06
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	73526	23.3074	23.30
67	Isopropylbenzene	105	8.563	8.563	(1.116)	507381	22.4862	22.48
62	m,p-Xylenes	106	7.907	7.907	(1.031)	417231	44.7046	44.70
17	Methylene Chloride	84	2.311	2.311	(0.552)	115273	21.5083	21.50
87	n-Butylbenzene	91	9.995	9.995	(1.034)	377702	24.8482	24.84
73	n-Propylbenzene	91	8.916	8.912	(0.922)	593416	23.9854	23.98
92	Naphthalene	128	11.551	11.547	(1.195)	85596	22.3999	22.39
63	o-Xylene	106	8.245	8.245	(1.075)	195897	21.5910	21.59
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	503272	23.8045	23.80
64	Styrene	104	8.263	8.260	(1.077)	327506	21.9195	21.91
78	tert-Butylbenzene	119	9.339	9.336	(0.966)	363066	23.5154	23.51
56	Tetrachloroethene	164	6.929	6.929	(0.903)	109608	21.5774	21.57
50	Toluene	91	6.449	6.449	(0.841)	466441	21.1818	21.18
20	trans-1,2-Dichloroethene	96	2.539	2.536	(0.606)	104479	20.8401	20.84
51	trans-1,3-Dichloropropene	75	6.685	6.682	(1.346)	156427	21.4239	21.42
38	Trichloroethene	130	5.212	5.208	(1.049)	125083	20.9674	20.96
8	Trichlorofluoromethane	101	1.568	1.568	(0.375)	178676	19.9103	19.91
5	Vinyl Chloride	62	1.152	1.152	(0.275)	115097	19.2606	19.26

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081705.D
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Client ID: VLCSW-220817
Sample Info: VLCSW-220817;VLCSW-220817;3;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

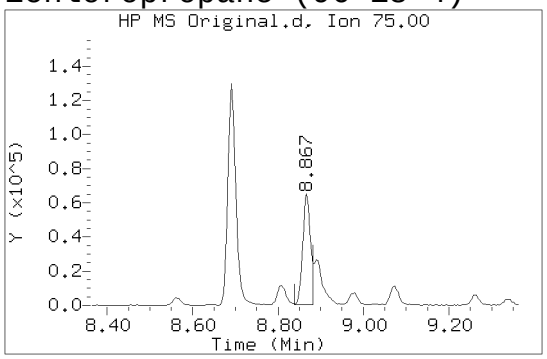
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Inj Date : 17-AUG-2022 12:04
InstruID : voa6.i
LabSampID : VLCSW-220817

1,2,3-Trichloropropane (96-18-4)

Reason Code:

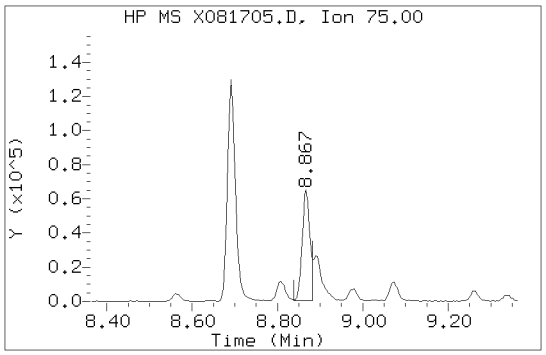
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HEIGHT
64883
19-Aug-2022
11:31
linh
pham



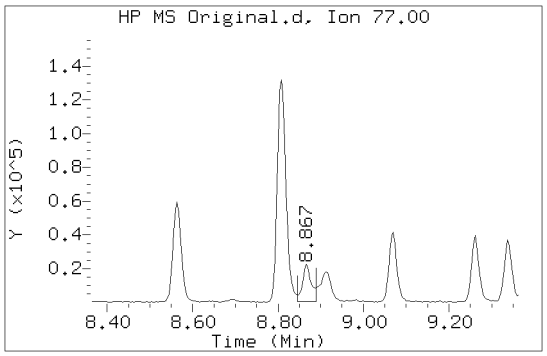
AFTER

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19-Aug-2022
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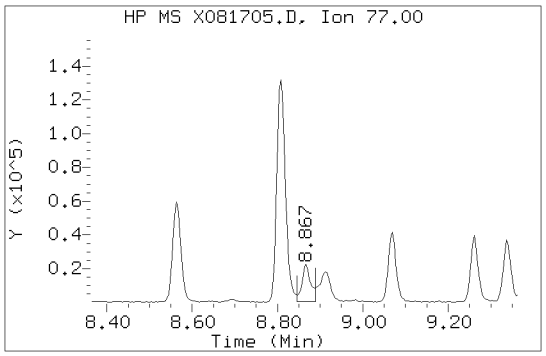
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19-Aug-2022
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AFTER

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19-Aug-2022
11:31
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Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081707.D Page 1
Report Date: 19-Aug-2022 11:31

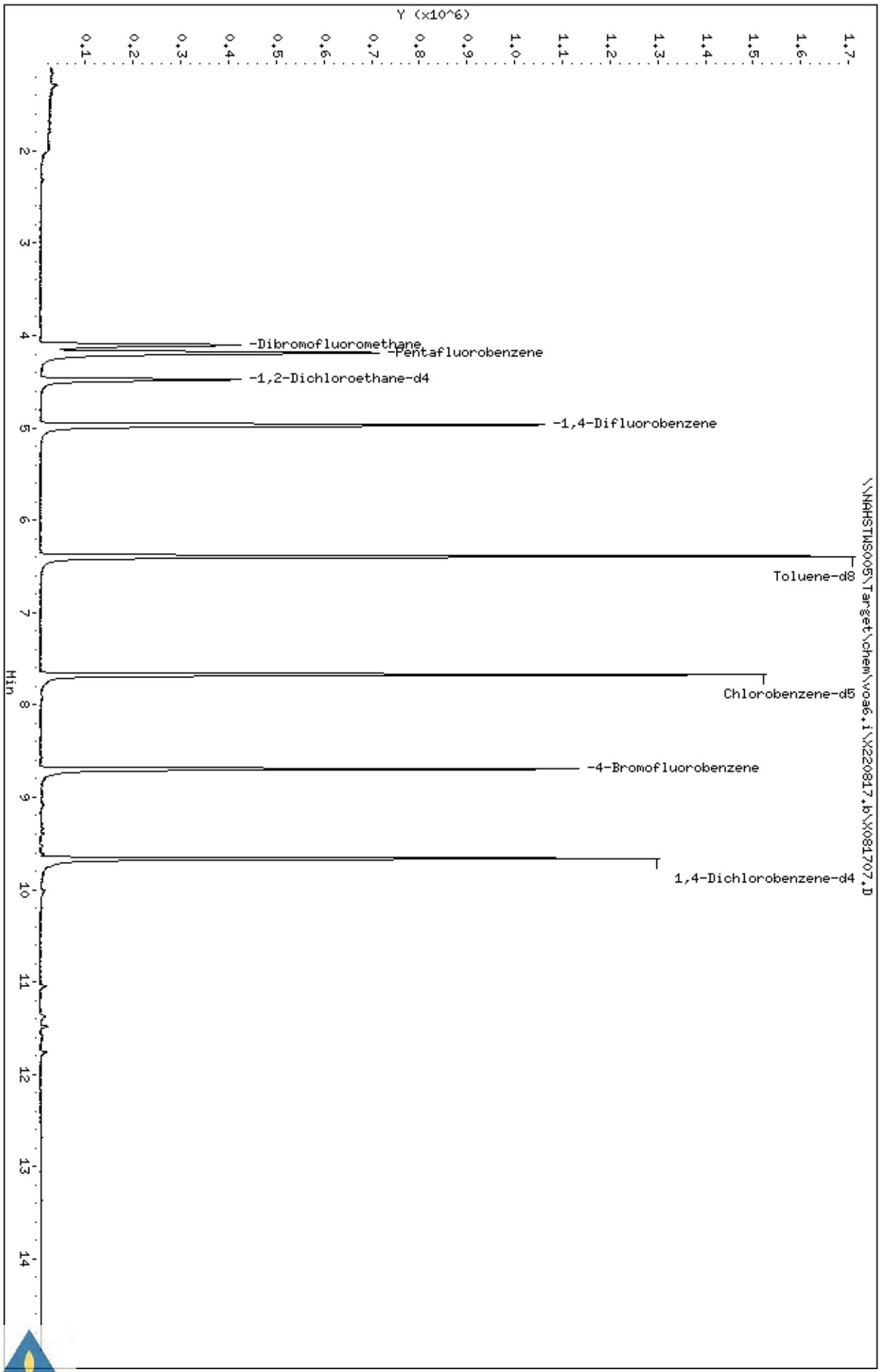
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081707.D
Lab Smp Id: VBLKW-220817 Client Smp ID: VBLKW-220817
Inj Date : 17-AUG-2022 12:46
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-220817;VBLKW-220817;3;;BLANK
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	(1.000)	643468	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	921008	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	800425	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.666	(1.000)	342859	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.980)	289255	47.6019	47.60
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.069)	320028	48.1102	48.11
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1073406	53.7488	53.74
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	343079	47.9990	47.99


Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081707.D
Date : 17-AUG-2022 12:46
Client ID: VBLKW-220817
Sample Info: VBLKW-220817;VBLKW-220817;3;;BLANK
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 1
Y (x10^6)
Min
-Dibromofluoromethane
-Pentafluorobenzene
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
Toluene-d8
Chlorobenzene-d5
-4-Bromofluorobenzene
1,4-Dichlorobenzene-d4
\\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081707.D

Data File : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081707.D
Inj Date : 17-AUG-2022 12:46
InstruID : voa6.i
LabSampID : VBLKW-220817

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081708.D Page 1
Report Date: 19-Aug-2022 11:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081708.D
Lab Smp Id: HS22080897-02 Client Smp ID: HS22080897-02
Inj Date : 17-AUG-2022 13:07
Operator : PC Inst ID: voa6.i
Smp Info : HS22080897-02;HS22080897-02;;;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

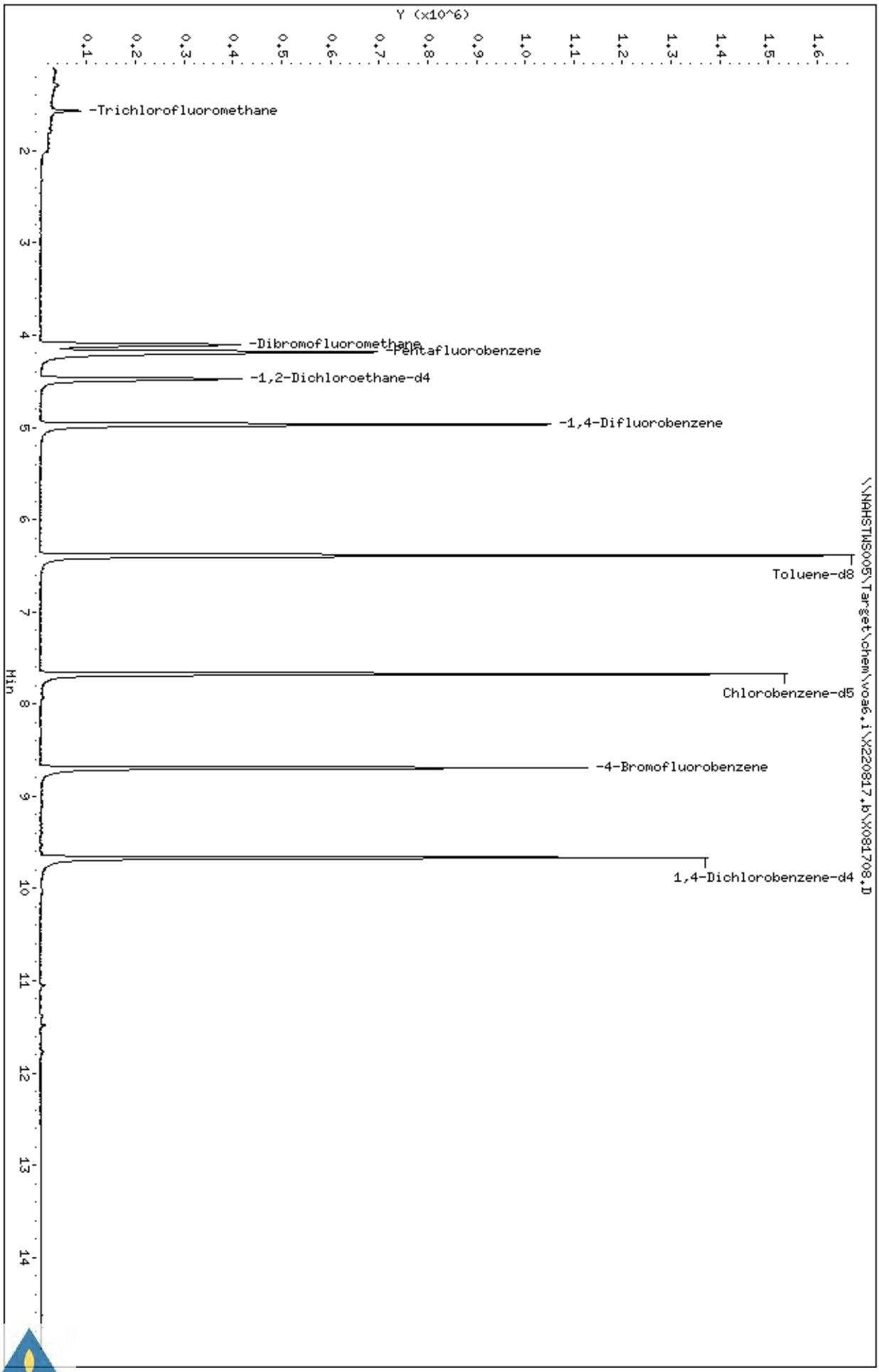
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.185	4.185	(1.000)	634115	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	902832	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	787854	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.666	(1.000)	351542	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	285837	47.7353	47.73
$ 35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.070)	321329	49.0245	49.02
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1059112	53.8793	53.87
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	340806	48.4494	48.44
8 Trichlorofluoromethane	101	1.568	1.568	(0.375)	39524	3.95816	3.95(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081708.D
Date : 17-AUG-2022 13:07
Client ID: HS220808897-02
Sample Info: HS220808897-02;HS220808897-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Page 1

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081708.D Page 2

Date : 17-AUG-2022 13:07

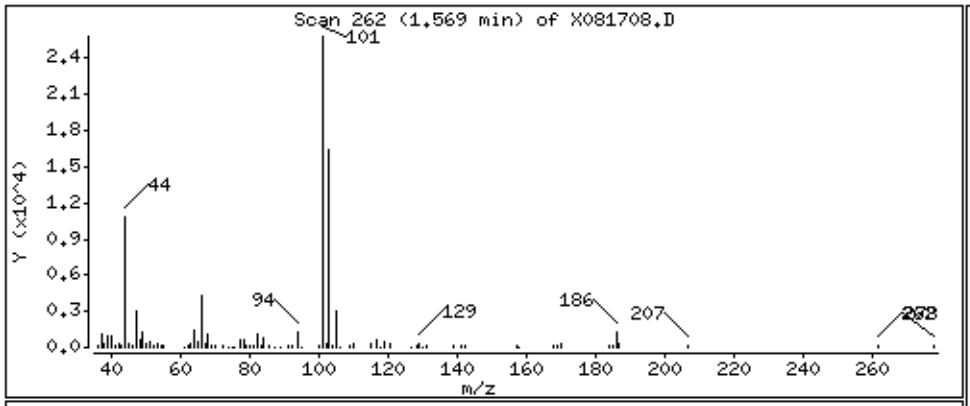
Client ID: HS22080897-02 Instrument: voa6.i

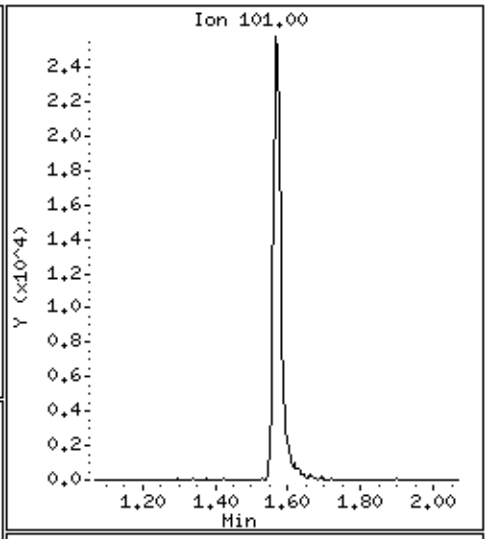
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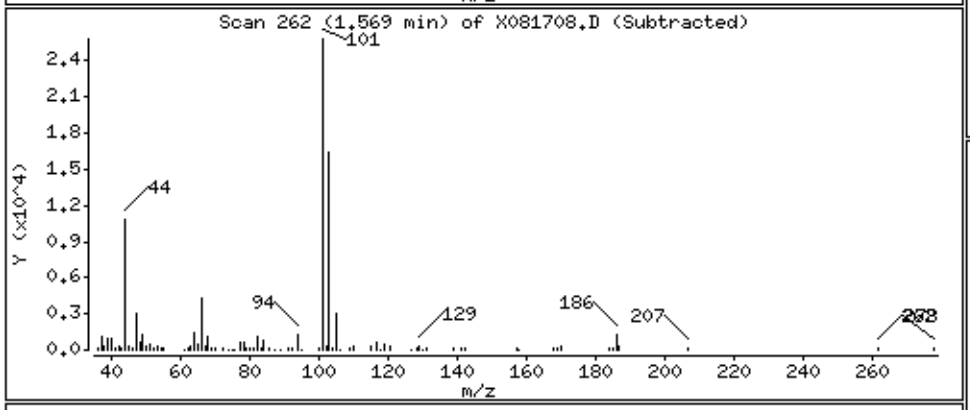
Purge Volume: 5.0 Operator: PC

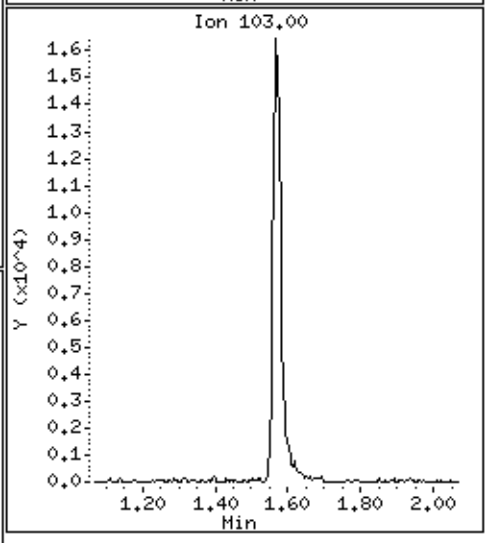
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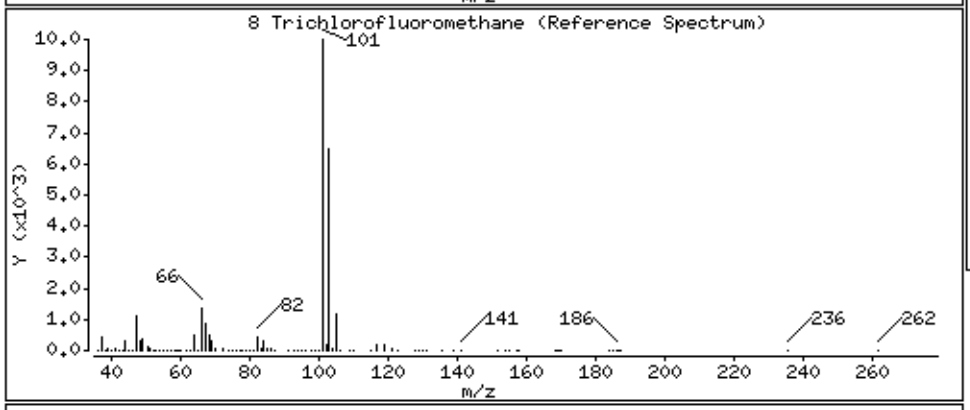
8 Trichlorofluoromethane Concentration: 3.95 ug/l

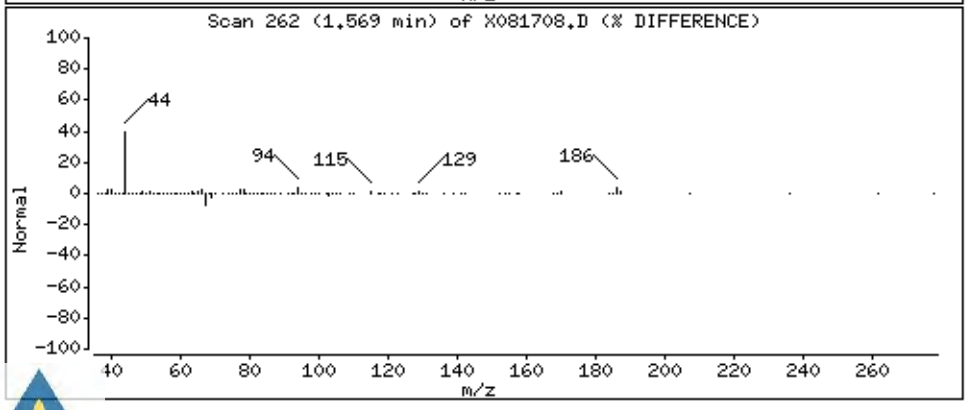












Data File : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081708.D
Inj Date : 17-AUG-2022 13:07
InstruID : voa6.i
LabSampID : HS22080897-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081709.D Page 1
Report Date: 19-Aug-2022 11:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081709.D
Lab Smp Id: HS22080897-01 Client Smp ID: HS22080897-01
Inj Date : 17-AUG-2022 13:28
Operator : PC Inst ID: voa6.i
Smp Info : HS22080897-01;HS22080897-01;;;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	651348	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.968	(1.000)	922341	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	828064	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	379860	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	295170	47.9936	47.99
$ 35 1,2-Dichloroethane-d4	65	4.478	4.477	(1.070)	324611	48.2095	48.20
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1078200	52.1868	52.18
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	362932	49.1004	49.10
27 cis-1,2-Dichloroethene	96	3.540	3.533	(0.846)	21046	3.25004	3.25(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081709.D

Date : 17-AUG-2022 13:28

Client ID: HS22080897-01

Instrument: voa6.i

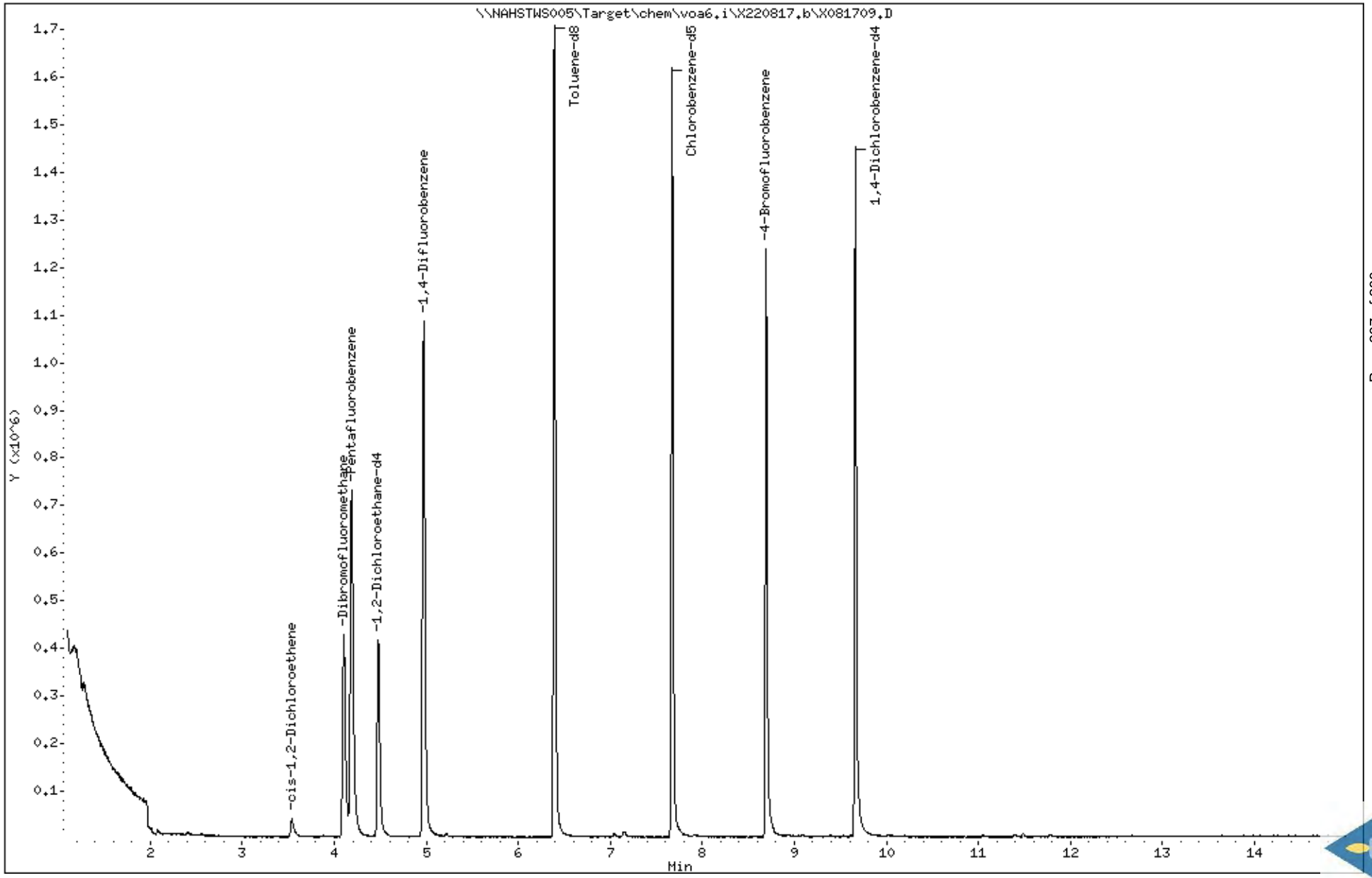
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Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081709.D Page 2

Date : 17-AUG-2022 13:28

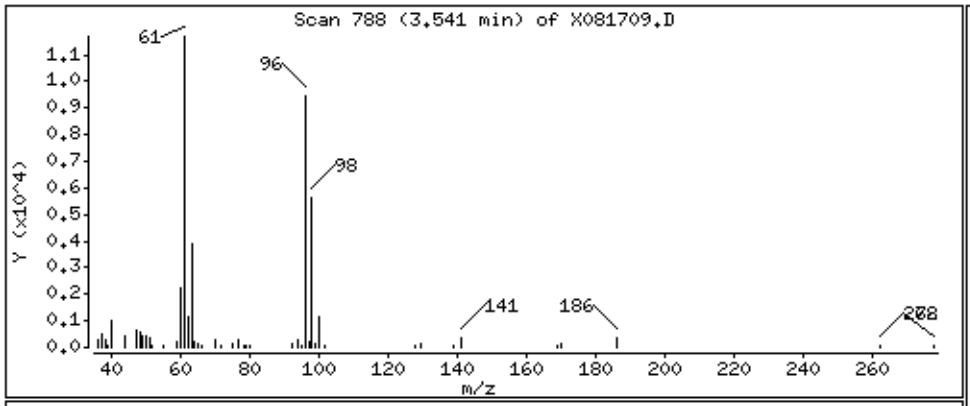
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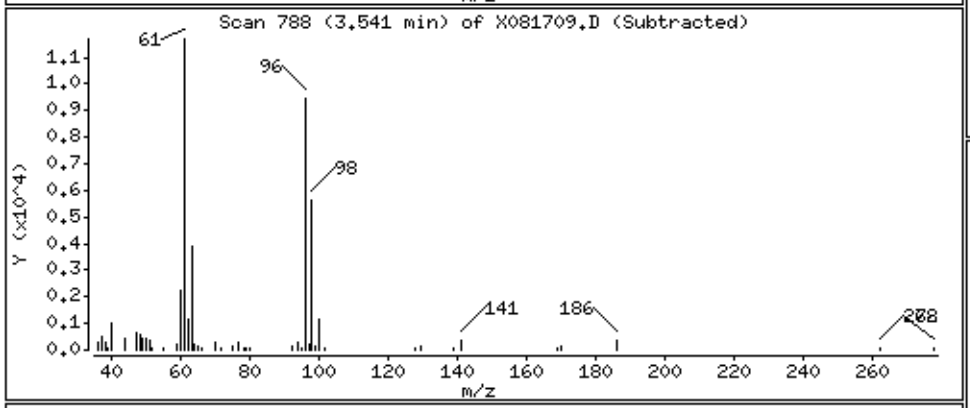
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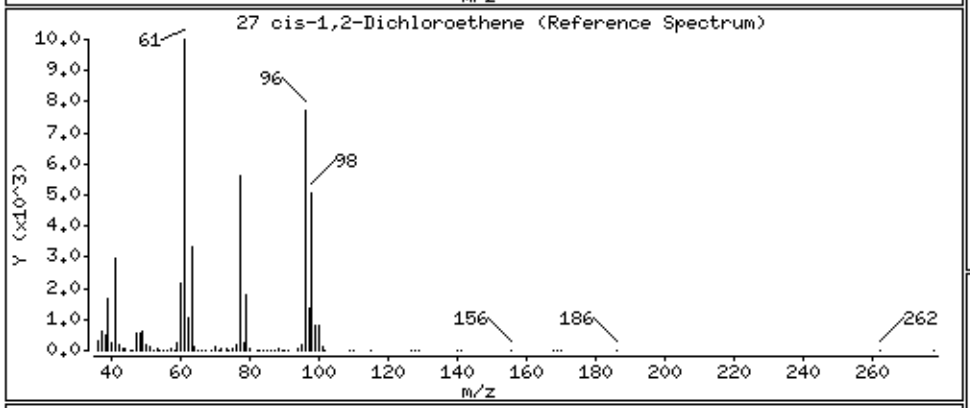
Purge Volume: 5.0 Operator: PC

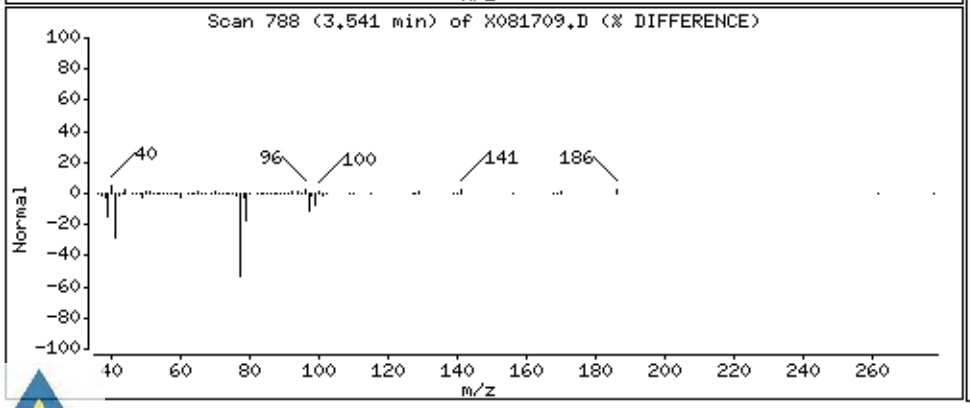
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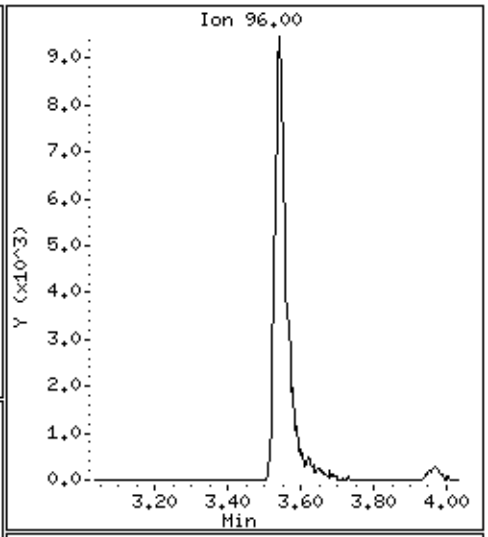
27 cis-1,2-Dichloroethene Concentration: 3.25 ug/l

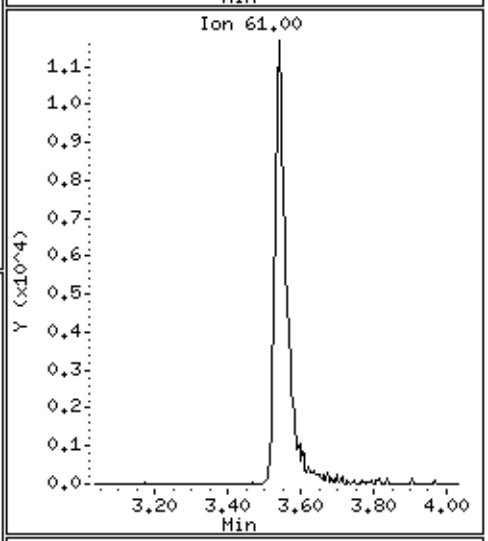


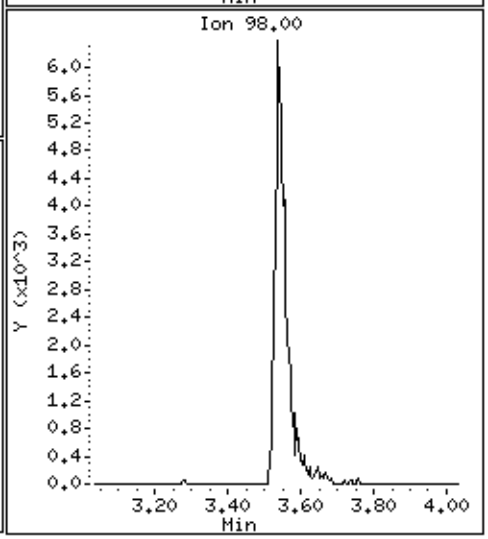












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InstruID : voa6.i
LabSampID : HS22080897-01

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081716.D Page 1
Report Date: 19-Aug-2022 11:32

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081716.D
Lab Smp Id: HS22080897-01MS Client Smp ID: HS22080897-01MS
Inj Date : 17-AUG-2022 15:55
Operator : PC Inst ID: voa6.i
Smp Info : HS22080897-01MS;HS22080897-01MS;3;;MS
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 16 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	(1.000)	640659	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.968	(1.000)	911780	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	836163	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.666	(1.000)	407172	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.106	(0.979)	292936	48.4316	48.43
$ 35 1,2-Dichloroethane-d4	65	4.478	4.477	(1.069)	333160	50.3189	50.31
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1075111	51.5333	51.53
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	380312	50.9845	50.98
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	127025	21.6230	21.62
31 1,1,1-Trichloroethane	97	4.088	4.088	(0.976)	202282	22.2571	22.25
68 1,1,2,2-Tetrachloroethane	83	8.841	8.837	(0.915)	122039	21.3407	21.34
53 1,1,2-Trichloroethane	83	6.843	6.839	(0.892)	91864	21.3679	21.36
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	208102	21.0993	21.09
11 1,1-Dichloroethene	96	1.925	1.925	(0.460)	107545	20.1095	20.10
32 1,1-Dichloropropene	75	4.290	4.286	(0.863)	171997	23.3733	23.37
93 1,2,3-Trichlorobenzene	180	11.746	11.742	(1.216)	38813	18.3365	18.33
71 1,2,3-Trichloropropane	75	8.867	8.863	(0.918)	91711	20.7999	20.79(M)
90 1,2,4-Trichlorobenzene	180	11.341	11.337	(1.174)	76937	20.7460	20.74
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	444273	22.7472	22.74
89 1,2-Dibromo-3-Chloropropane	155	10.663	10.659	(1.104)	8065	19.4544	19.45

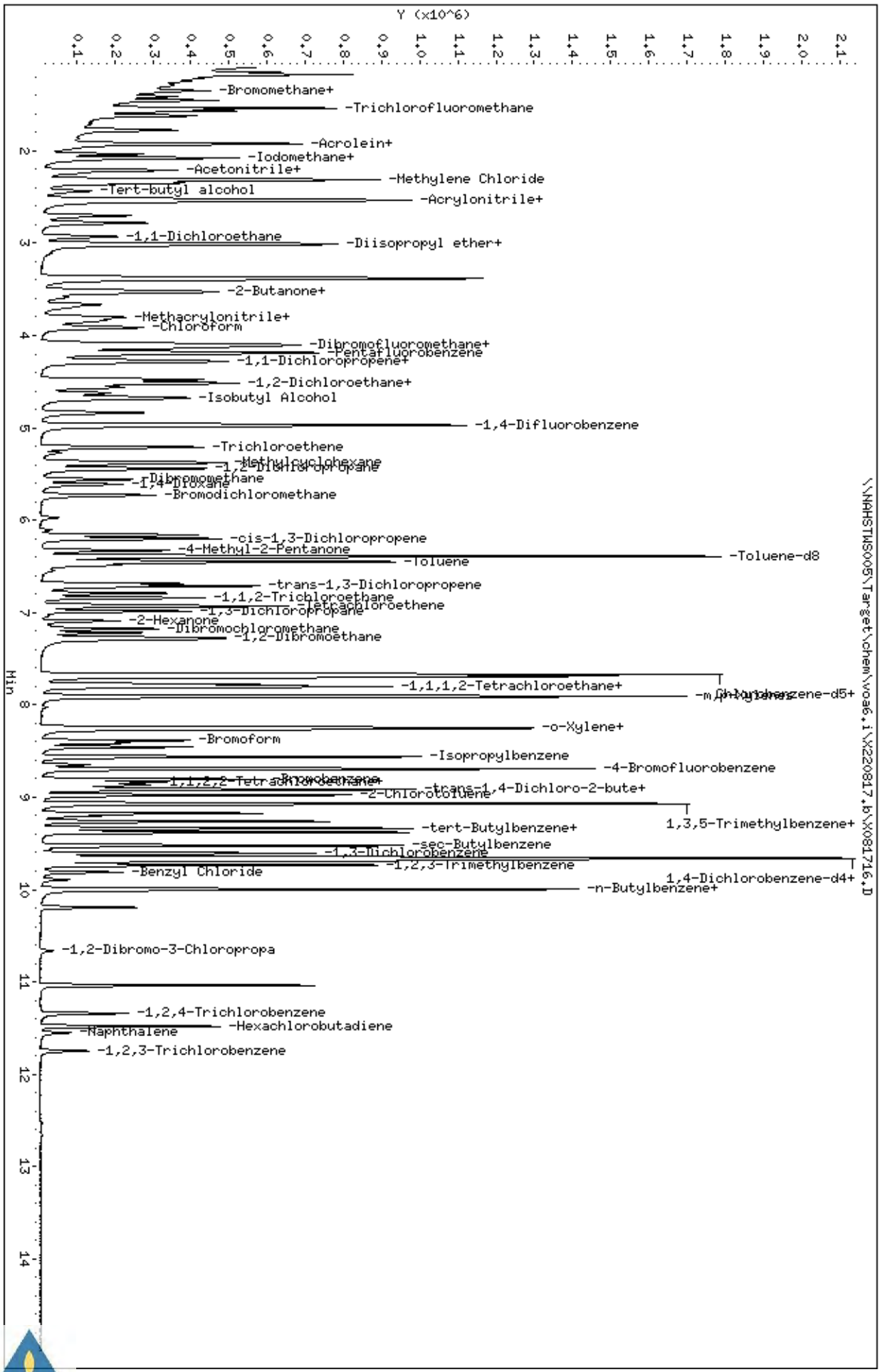
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	115917	21.2648	21.26
88 1,2-Dichlorobenzene	146	9.996	9.992 (1.035)	219907	21.5843	21.58

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081716.D Page 2
Report Date: 19-Aug-2022 11:32

						CONCENTRATIONS	
		QUANT SIG				ON-COLUMN	FINAL
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
33	1,2-Dichloroethane	62	4.564	4.560	(0.919)	174172	21.7811	21.78
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	118603	21.1333	21.13
75	1,3,5-Trimethylbenzene	105	9.070	9.069	(0.939)	451576	22.8324	22.83
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	247351	21.8950	21.89
54	1,3-Dichloropropane	76	6.985	6.982	(0.911)	186842	21.3656	21.36
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	258700	21.5701	21.57
26	2,2-Dichloropropane	77	3.518	3.518	(0.840)	193066	21.9016	21.90
24	2-Butanone	43	3.589	3.585	(0.857)	63680	39.6217	39.62
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	379725	21.7571	21.75
52	2-Hexanone	43	7.090	7.090	(0.924)	119805	45.5660	45.56
77	4-Chlorotoluene	91	9.073	9.069	(0.939)	426829	21.9106	21.91
82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	468159	23.5720	23.57
45	4-Methyl-2-Pentanone	43	6.329	6.325	(0.825)	197453	48.4630	48.46
10	Acetone	43	1.981	1.981	(0.473)	50893	33.9813	33.98
37	Benzene	78	4.519	4.515	(0.909)	471042	21.8017	21.80
74	Bromobenzene	156	8.807	8.807	(0.912)	150382	21.6267	21.62
29	Bromochloromethane	128	3.803	3.799	(0.908)	70551	19.5312	19.53
39	Bromodichloromethane	83	5.730	5.729	(1.153)	166736	21.6531	21.65
66	Bromoform	173	8.414	8.410	(1.097)	77526	19.8871	19.88
6	Bromomethane	94	1.347	1.347	(0.322)	77153	16.7404	16.74
19	Carbon Disulfide	76	2.078	2.078	(0.496)	625102	44.1511	44.15
34	Carbon Tetrachloride	117	4.268	4.267	(0.859)	179054	22.7661	22.76
59	Chlorobenzene	112	7.694	7.694	(1.003)	345990	21.8228	21.82
7	Chloroethane	64	1.407	1.411	(0.336)	84509	20.5659	20.56(M)
28	Chloroform	83	3.915	3.911	(0.935)	238585	22.0783	22.07
3	Chloromethane	50	1.085	1.085	(0.259)	169065	28.5249	28.52
27	cis-1,2-Dichloroethene	96	3.537	3.533	(0.844)	157579	24.7402	24.74
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	202908	21.4518	21.45
55	Dibromochloromethane	129	7.177	7.176	(0.936)	131115	21.1266	21.12
44	Dibromomethane	93	5.557	5.557	(1.118)	80885	21.4809	21.48
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	116941	19.0530	19.05
61	Ethylbenzene	106	7.803	7.802	(1.017)	182715	22.8133	22.81
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	78265	22.8514	22.85
67	Isopropylbenzene	105	8.564	8.563	(1.116)	563142	23.3817	23.38
62	m,p-Xylenes	106	7.908	7.907	(1.031)	453124	45.4850	45.48
17	Methylene Chloride	84	2.311	2.311	(0.552)	121067	20.0365	20.03
87	n-Butylbenzene	91	9.996	9.995	(1.035)	398870	24.1696	24.16
73	n-Propylbenzene	91	8.916	8.912	(0.923)	640413	23.8419	23.84
92	Naphthalene	128	11.551	11.547	(1.196)	69503	16.7528	16.75
63	o-Xylene	106	8.245	8.245	(1.075)	211023	21.7897	21.78
81	sec-Butylbenzene	105	9.523	9.523	(0.986)	548331	23.8887	23.88
64	Styrene	104	8.264	8.260	(1.077)	349384	21.9074	21.90
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	393557	23.4783	23.47
56	Tetrachloroethene	164	6.929	6.929	(0.903)	122754	22.6395	22.63
50	Toluene	91	6.449	6.449	(0.841)	518669	22.0664	22.06
20	trans-1,2-Dichloroethene	96	2.536	2.536	(0.605)	120810	21.4356	21.43
51	trans-1,3-Dichloropropene	75	6.685	6.682	(1.346)	168035	21.4511	21.45
38	Trichloroethene	130	5.209	5.208	(1.048)	144819	22.6274	22.62
8	Trichlorofluoromethane	101	1.569	1.568	(0.375)	211252	20.9399	20.93
5	Vinyl Chloride	62	1.153	1.152	(0.275)	131326	19.5487	19.54

QC Flag Legend

M - Compound response manually integrated.



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Column phase: DB624

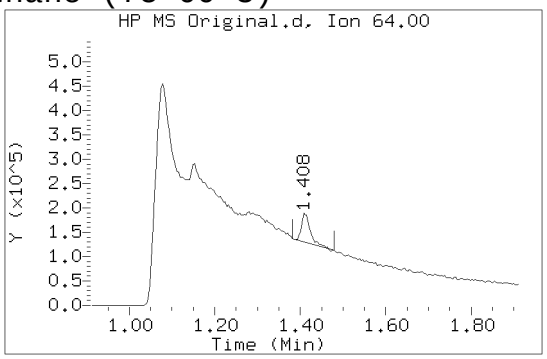
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Operator: PC
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Inj Date : 17-AUG-2022 15:55
InstruID : voa6.i
LabSampID : HS22080897-01MS

Chloroethane (75-00-3)

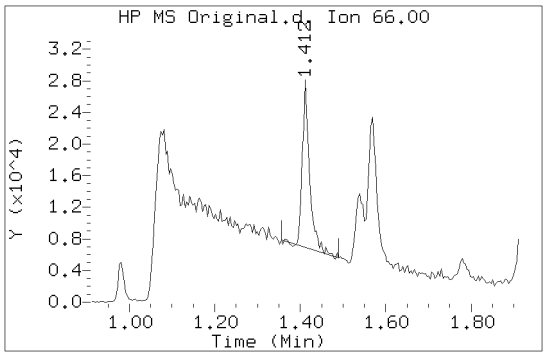
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HEIGHT
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19-Aug-2022
11:31
linh
pham



BEFORE

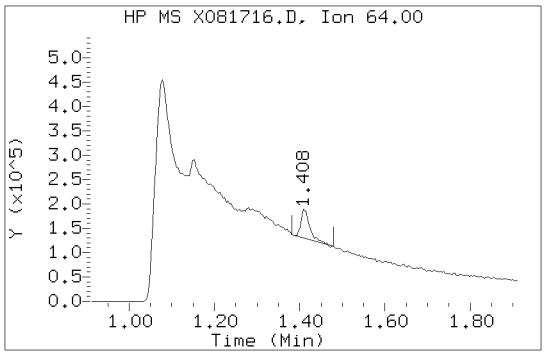
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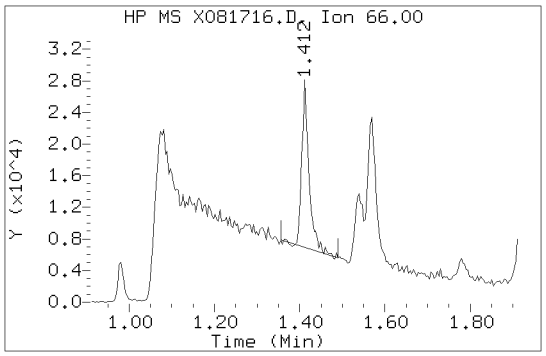
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AFTER

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19-Aug-2022
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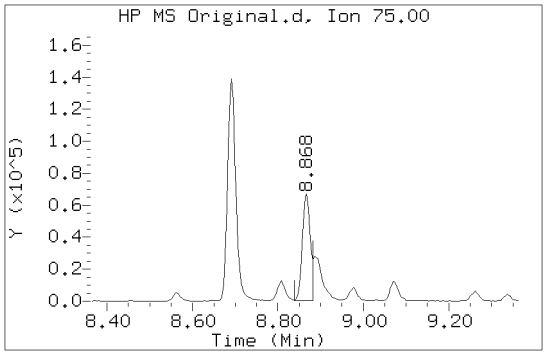


1,2,3-Trichloropropane (96-18-4)

Reason Code:

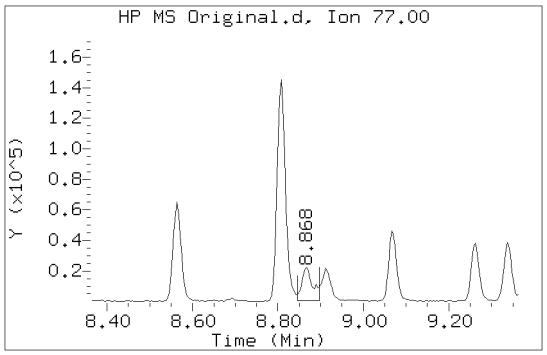
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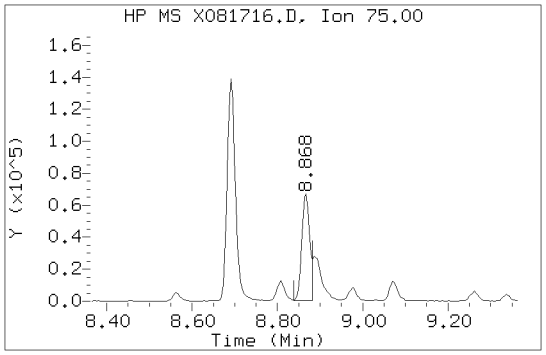
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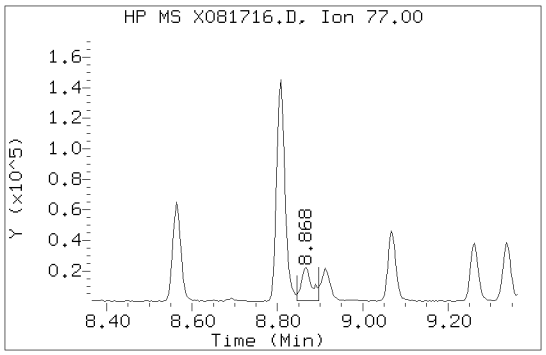
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AFTER

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Report Date: 19-Aug-2022 11:32

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081717.D
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Inj Date : 17-AUG-2022 16:16
Operator : PC Inst ID: voa6.i
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Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\8260W.m
Meth Date : 19-Aug-2022 11:31 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 16 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	644290	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	920413	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	817563	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.666	(1.000)	394121	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	294937	48.4884	48.48
$ 35 1,2-Dichloroethane-d4	65	4.474	4.477	(1.069)	336069	50.4732	50.47
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	1078547	52.8741	52.87
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	370958	50.8599	50.85
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	121135	21.0895	21.08
31 1,1,1-Trichloroethane	97	4.087	4.088	(0.977)	189072	20.6863	20.68
68 1,1,2,2-Tetrachloroethane	83	8.841	8.837	(0.915)	120562	21.7805	21.78
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	88908	21.1508	21.15
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	200032	20.1668	20.16
11 1,1-Dichloroethene	96	1.921	1.925	(0.459)	99513	18.5028	18.50
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	163448	22.0032	22.00
93 1,2,3-Trichlorobenzene	180	11.746	11.742	(1.215)	47400	23.1348	23.13
71 1,2,3-Trichloropropane	75	8.867	8.863	(0.917)	96168	22.5330	22.53(M)
90 1,2,4-Trichlorobenzene	180	11.341	11.337	(1.173)	80748	22.4946	22.49
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	424232	22.4404	22.44
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	9243	22.8948	22.89

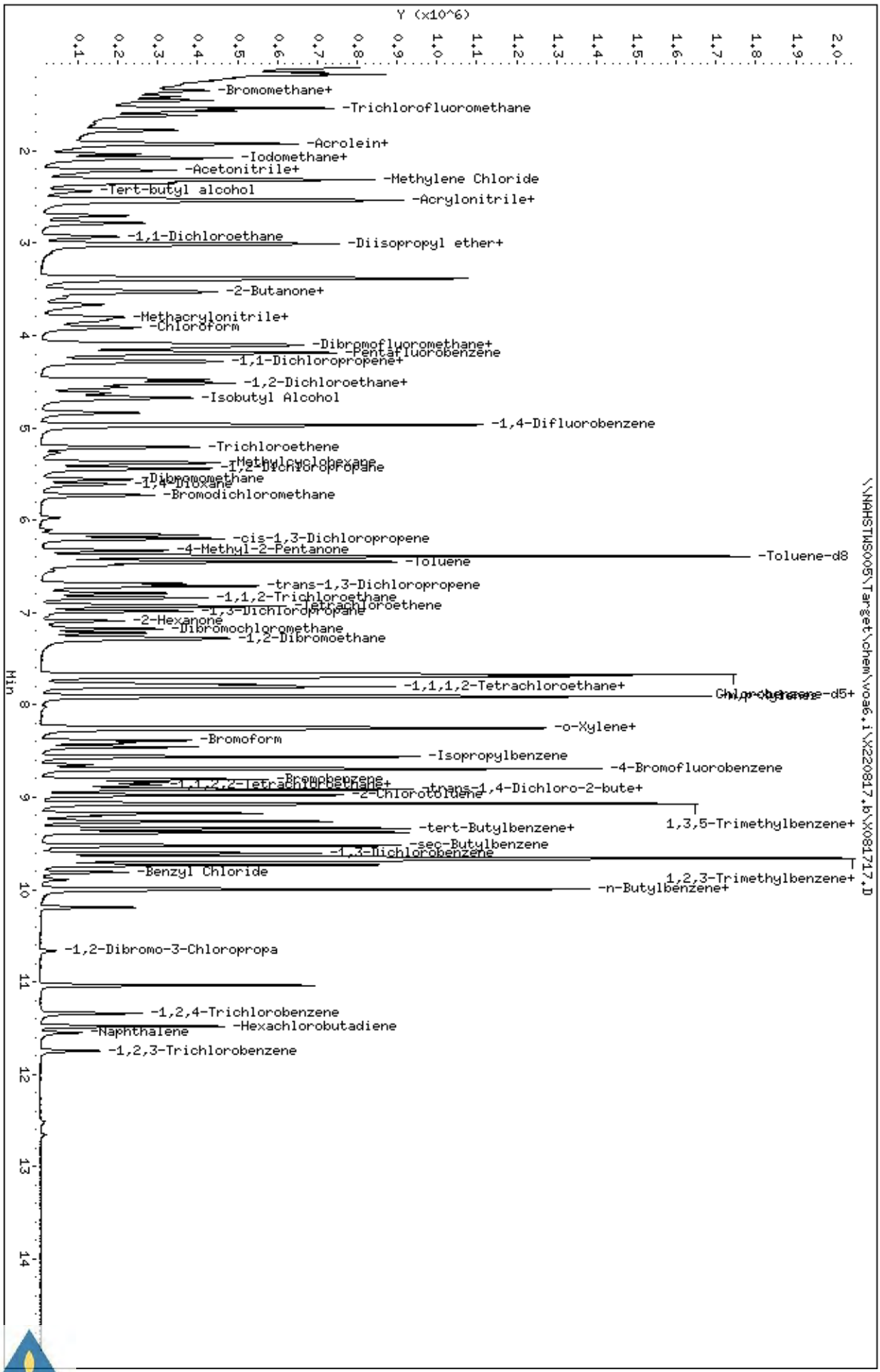
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	114858	21.5499	21.54
88 1,2-Dichlorobenzene	146	9.995	9.992 (1.034)	219363	22.2439	22.24

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081717.D Page 2
Report Date: 19-Aug-2022 11:32

						CONCENTRATIONS	
	QUANT SIG					ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
33 1,2-Dichloroethane	62	4.560	4.560	(0.918)	173470	21.4898	21.48
42 1,2-Dichloropropane	63	5.441	5.441	(1.095)	115131	20.3223	20.32
75 1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	429304	22.4250	22.42
83 1,3-Dichlorobenzene	146	9.605	9.606	(0.994)	237948	21.7601	21.76
54 1,3-Dichloropropane	76	6.981	6.982	(0.910)	183606	21.4732	21.47
84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	249097	21.4572	21.45
26 2,2-Dichloropropane	77	3.518	3.518	(0.841)	184333	20.7806	20.78
24 2-Butanone	43	3.589	3.585	(0.858)	61690	38.1672	38.16
76 2-Chlorotoluene	91	8.976	8.976	(0.929)	361731	21.4125	21.41
52 2-Hexanone	43	7.090	7.090	(0.924)	120260	46.7797	46.77
77 4-Chlorotoluene	91	9.073	9.069	(0.939)	415371	22.0284	22.02
82 p-Isopropyltoluene	119	9.650	9.651	(0.998)	443005	23.0441	23.04
45 4-Methyl-2-Pentanone	43	6.329	6.325	(0.825)	195136	48.9839	48.98
10 Acetone	43	1.981	1.981	(0.473)	48517	31.8998	31.89
37 Benzene	78	4.519	4.515	(0.909)	441386	20.2375	20.23
74 Bromobenzene	156	8.807	8.807	(0.911)	145658	21.6410	21.64
29 Bromochloromethane	128	3.803	3.799	(0.909)	68203	18.7748	18.77
39 Bromodichloromethane	83	5.729	5.729	(1.153)	159194	20.4798	20.47
66 Bromoform	173	8.413	8.410	(1.097)	76888	20.1544	20.15
6 Bromomethane	94	1.347	1.347	(0.322)	64924	13.7838	13.78
19 Carbon Disulfide	76	2.078	2.078	(0.497)	586346	41.1804	41.18
34 Carbon Tetrachloride	117	4.271	4.267	(0.860)	168471	21.2196	21.21
59 Chlorobenzene	112	7.694	7.694	(1.003)	334326	21.5668	21.56
7 Chloroethane	64	1.415	1.411	(0.338)	53156	12.8630	12.86(M)
28 Chloroform	83	3.911	3.911	(0.935)	222325	20.4577	20.45
3 Chloromethane	50	1.085	1.085	(0.259)	176140	29.5492	29.54
27 cis-1,2-Dichloroethene	96	3.533	3.533	(0.844)	148959	23.2551	23.25
46 cis-1,3-Dichloropropene	75	6.160	6.157	(1.240)	193901	20.3073	20.30
55 Dibromochloromethane	129	7.176	7.176	(0.935)	127446	21.0027	21.00
44 Dibromomethane	93	5.557	5.557	(1.118)	78296	20.5983	20.59
2 Dichlorodifluoromethane	85	0.980	0.980	(0.234)	108761	17.6073	17.60
61 Ethylbenzene	106	7.802	7.802	(1.017)	170554	21.7794	21.77
91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	75715	22.8389	22.83
67 Isopropylbenzene	105	8.563	8.563	(1.116)	529646	22.4912	22.49
62 m,p-Xylenes	106	7.907	7.907	(1.031)	429727	44.1178	44.11
17 Methylene Chloride	84	2.311	2.311	(0.552)	117074	19.2329	19.23
87 n-Butylbenzene	91	9.995	9.995	(1.034)	384065	24.0431	24.04
73 n-Propylbenzene	91	8.916	8.912	(0.922)	613972	23.6144	23.61
92 Naphthalene	128	11.551	11.547	(1.195)	88824	22.1189	22.11
63 o-Xylene	106	8.245	8.245	(1.075)	203981	21.5417	21.54
81 sec-Butylbenzene	105	9.523	9.523	(0.985)	520675	23.4350	23.43
64 Styrene	104	8.260	8.260	(1.077)	334228	21.4338	21.43
78 tert-Butylbenzene	119	9.336	9.336	(0.966)	373654	23.0291	23.02
56 Tetrachloroethene	164	6.929	6.929	(0.903)	115706	21.8252	21.82
50 Toluene	91	6.449	6.449	(0.841)	492140	21.4141	21.41
20 trans-1,2-Dichloroethene	96	2.536	2.536	(0.606)	113371	20.0023	20.00
51 trans-1,3-Dichloropropene	75	6.685	6.682	(1.346)	164462	20.7981	20.79
38 Trichloroethene	130	5.212	5.208	(1.049)	133789	20.7079	20.70
8 Trichlorofluoromethane	101	1.568	1.568	(0.375)	197981	19.5139	19.51
5 Vinyl Chloride	62	1.152	1.152	(0.275)	122270	18.0981	18.09

QC Flag Legend

M - Compound response manually integrated.



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Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

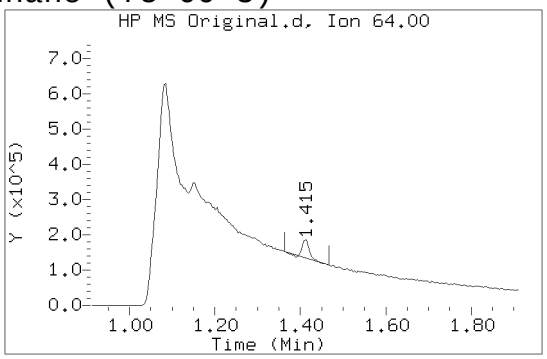
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LabSampID : HS22080897-01MSD

Chloroethane (75-00-3)

Reason Code:

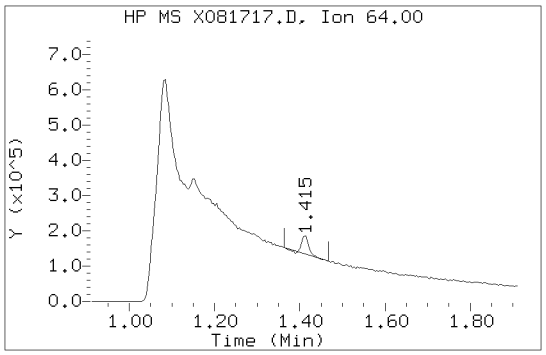
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19-Aug-2022
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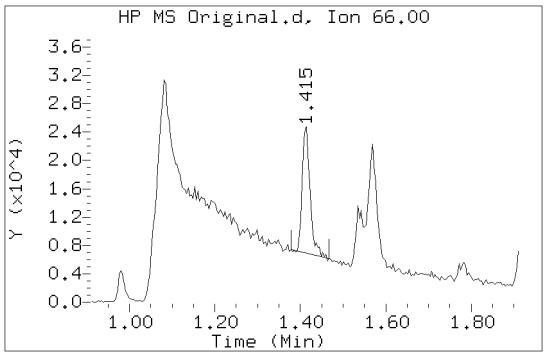
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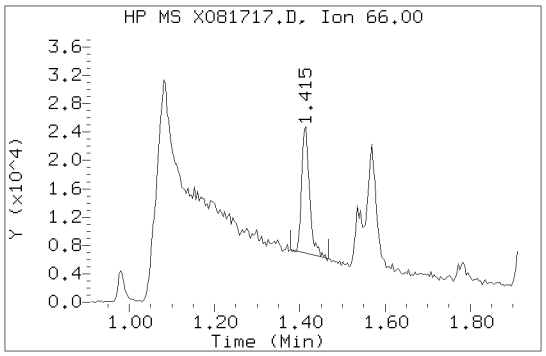
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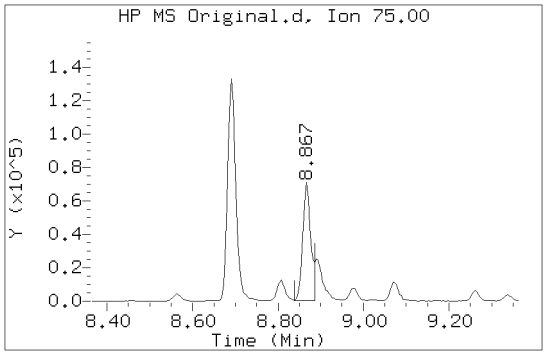


1,2,3-Trichloropropane (96-18-4)

Reason Code:

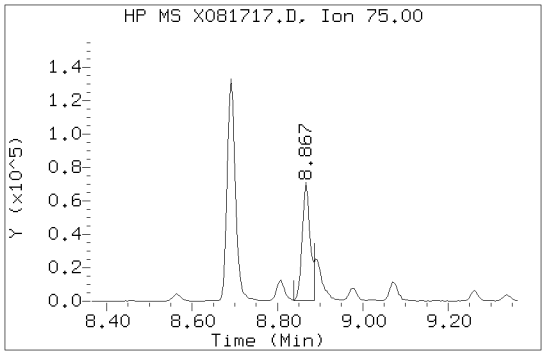
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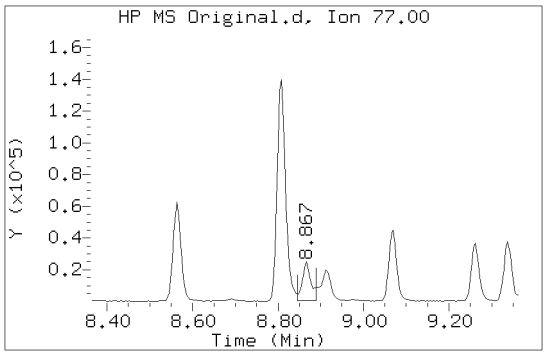
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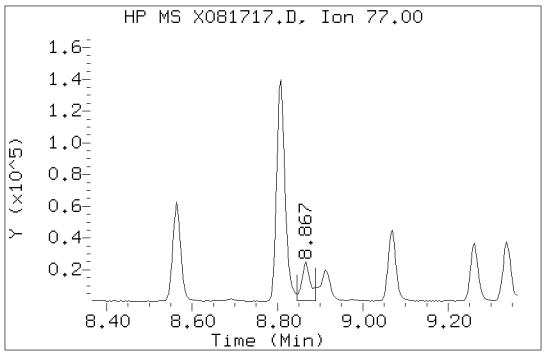
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AFTER

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19-Aug-2022
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Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081718.D Page 1
Report Date: 19-Aug-2022 11:32

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081718.D
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Inj Date : 17-AUG-2022 16:37
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
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Meth Date : 19-Aug-2022 11:32 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 13:53 Cal File: X071908.D
Als bottle: 17 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	545180	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	824841	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	776443	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	387090	50.0000	
$ 30 Dibromofluoromethane	113	4.102	4.102	(0.980)	272448	50.0000	53.00
$ 35 1,2-Dichloroethane-d4	65	4.474	4.474	(1.069)	296140	50.0000	52.57
$ 48 Toluene-d8	98	6.389	6.389	(0.833)	945154	50.0000	48.78
$ 69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	351100	50.0000	50.68
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	307576	50.0000	56.38
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.978)	435432	50.0000	56.30
68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.914)	295513	50.0000	54.35
53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	211585	50.0000	53.00
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	452620	50.0000	53.92
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	224267	50.0000	49.27
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	367844	50.0000	55.25
93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	111352	50.0000	55.33
71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	230241	50.0000	54.92(M)
90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	197863	50.0000	56.12
79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1054905	50.0000	56.81
89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	22725	50.0000	55.09

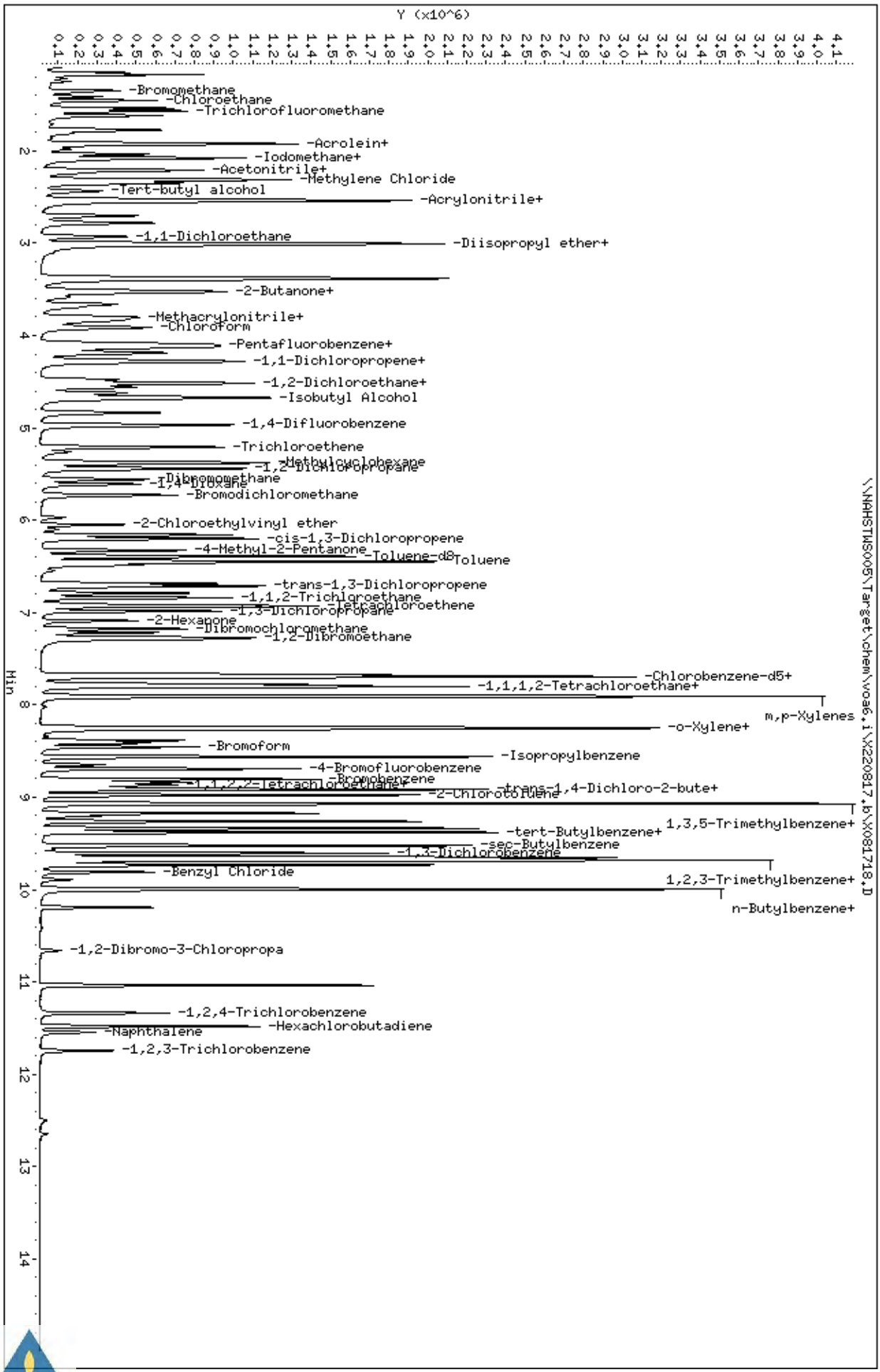
57 1,2-Dibromoethane	107	7.263	7.263 (0.947)	271108	50.0000	53.55
88 1,2-Dichlorobenzene	146	9.995	9.995 (1.034)	542573	50.0000	56.01

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220817.b\X081718.D Page 2
Report Date: 19-Aug-2022 11:32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.560	4.560	(0.918)	382909	50.0000	52.93
42	1,2-Dichloropropane	63	5.441	5.441	(1.095)	269735	50.0000	53.12
75	1,3,5-Trimethylbenzene	105	9.069	9.069	(0.938)	1057208	50.0000	56.22
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	604360	50.0000	56.27
54	1,3-Dichloropropane	76	6.981	6.981	(0.910)	432077	50.0000	53.20
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	620085	50.0000	54.38
26	2,2-Dichloropropane	77	3.518	3.518	(0.841)	419757	50.0000	56.34
24	2-Butanone	43	3.585	3.585	(0.857)	147653	100.000	107.95
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	894303	50.0000	53.89
52	2-Hexanone	43	7.090	7.090	(0.924)	278038	100.000	113.88
77	4-Chlorotoluene	91	9.069	9.069	(0.938)	1029703	50.0000	55.60
82	p-Isopropyltoluene	119	9.650	9.650	(0.998)	1107708	50.0000	58.66
45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	426741	100.000	112.79
10	Acetone	43	1.981	1.981	(0.473)	111560	100.000	96.99
37	Benzene	78	4.515	4.515	(0.909)	1026884	50.0000	52.53
74	Bromobenzene	156	8.807	8.807	(0.911)	361435	50.0000	54.67
29	Bromochloromethane	128	3.799	3.799	(0.908)	158321	50.0000	51.50
39	Bromodichloromethane	83	5.729	5.729	(1.153)	383943	50.0000	55.11
66	Bromoform	173	8.410	8.410	(1.096)	196944	50.0000	52.26
6	Bromomethane	94	1.347	1.347	(0.322)	171796	50.0000	46.02
19	Carbon Disulfide	76	2.078	2.078	(0.497)	1244150	100.000	103.26
34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	379630	50.0000	53.35
59	Chlorobenzene	112	7.694	7.694	(1.003)	797701	50.0000	54.18
7	Chloroethane	64	1.411	1.411	(0.337)	180292	50.0000	51.55(M)
28	Chloroform	83	3.911	3.911	(0.935)	509124	50.0000	55.36
3	Chloromethane	50	1.089	1.089	(0.260)	264630	50.0000	52.42
27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.844)	301279	50.0000	55.58
46	cis-1,3-Dichloropropene	75	6.157	6.157	(1.239)	470717	50.0000	55.01
55	Dibromochloromethane	129	7.176	7.176	(0.936)	314410	50.0000	54.55
44	Dibromomethane	93	5.557	5.557	(1.118)	181626	50.0000	53.31
2	Dichlorodifluoromethane	85	0.980	0.980	(0.234)	281658	50.0000	54.24
61	Ethylbenzene	106	7.802	7.802	(1.017)	415850	50.0000	55.91
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	186531	50.0000	57.28
67	Isopropylbenzene	105	8.563	8.563	(1.116)	1294116	50.0000	57.86
62	m,p-Xylenes	106	7.904	7.904	(1.030)	1045212	100.000	112.98
17	Methylene Chloride	84	2.311	2.311	(0.552)	275252	50.0000	54.99
87	n-Butylbenzene	91	9.995	9.995	(1.034)	959864	50.0000	61.18
73	n-Propylbenzene	91	8.912	8.912	(0.922)	1486020	50.0000	58.19
92	Naphthalene	128	11.543	11.543	(1.194)	212663	50.0000	53.91
63	o-Xylene	106	8.241	8.241	(1.074)	495901	50.0000	55.14
81	sec-Butylbenzene	105	9.523	9.523	(0.985)	1278215	50.0000	58.57
64	Styrene	104	8.260	8.260	(1.077)	836181	50.0000	56.46
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	914255	50.0000	57.37
56	Tetrachloroethene	164	6.929	6.929	(0.903)	268631	50.0000	53.35
50	Toluene	91	6.449	6.449	(0.841)	1161334	50.0000	53.20
20	trans-1,2-Dichloroethene	96	2.535	2.535	(0.606)	259847	50.0000	54.17
51	trans-1,3-Dichloropropene	75	6.685	6.685	(1.346)	401156	50.0000	56.60
38	Trichloroethene	130	5.208	5.208	(1.048)	305429	50.0000	52.75
8	Trichlorofluoromethane	101	1.568	1.568	(0.375)	448436	50.0000	52.23
5	Vinyl Chloride	62	1.152	1.152	(0.275)	280283	50.0000	49.02

QC Flag Legend

M - Compound response manually integrated.



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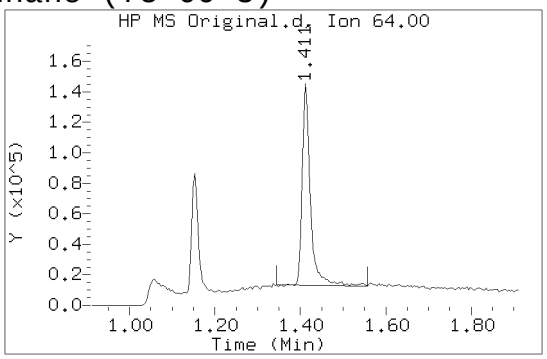
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LabSampID : CCV-END

Chloroethane (75-00-3)

Reason Code:

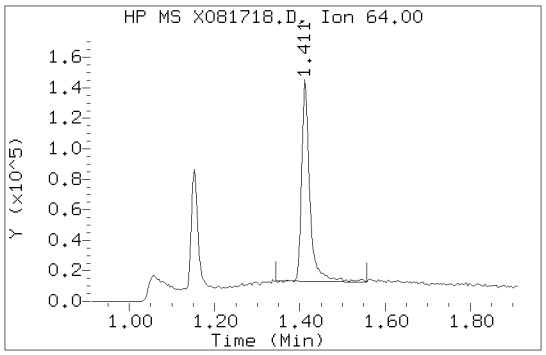
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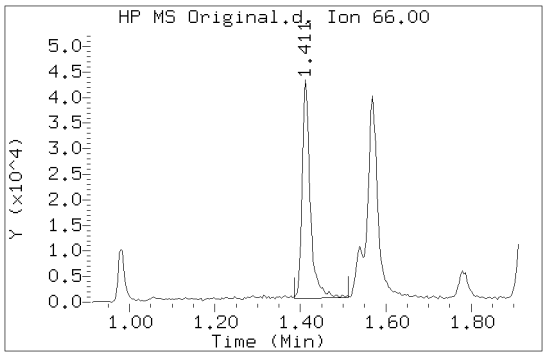
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pham



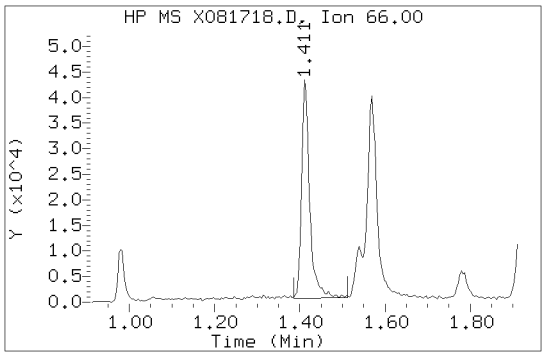
BEFORE

MASS
66
AREA
58507
HEIGHT
42706
19-Aug-2022
11:31
linh
pham



AFTER

MASS
66
AREA
58507
HEIGHT
42706
19-Aug-2022
11:31
linh
pham

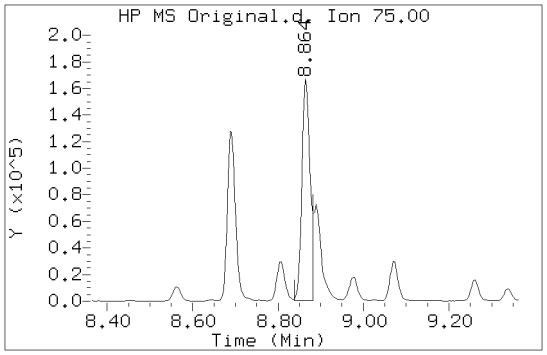


1,2,3-Trichloropropane (96-18-4)

Reason Code:

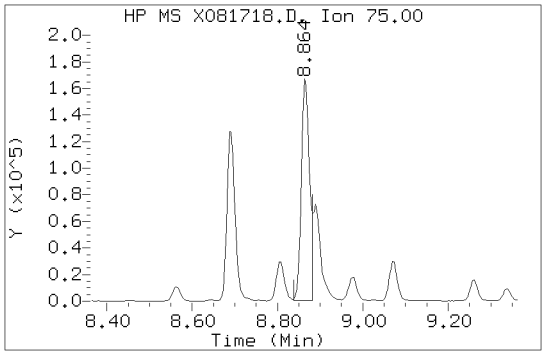
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19-Aug-2022
11:31
linh
pham



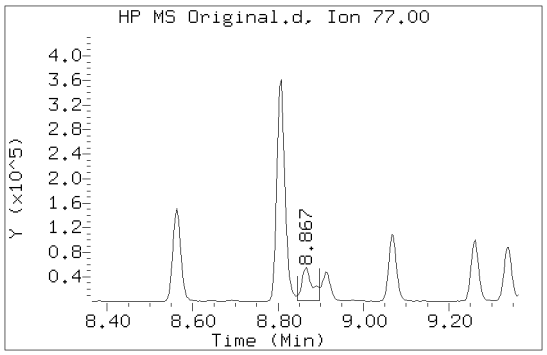
AFTER

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75
AREA
230241
HEIGHT
166754
19-Aug-2022
11:31
linh
pham



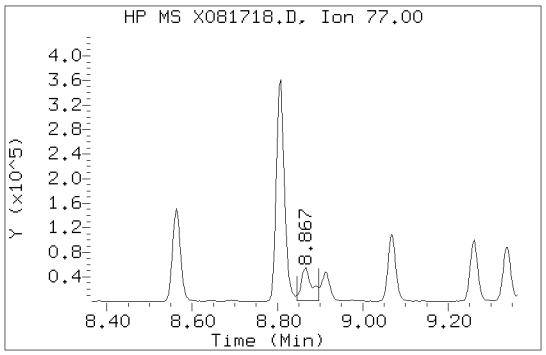
BEFORE

MASS
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55206
19-Aug-2022
11:31
linh
pham



AFTER

MASS
77
AREA
99328
HEIGHT
55206
19-Aug-2022
11:31
linh
pham



HS22080897 9056_W IC

ALS WO# HS22080897

Sequence: 081822
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume	Status	Inject Time
	STD1		Calibratic	BA1	1.00	1	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:22:42 AM -05:00
	STD2		Calibratic	BA2	1.00	2	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:28:00 AM -05:00
	STD3		Calibratic	BA3	1.00	3	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:33:19 AM -05:00
	STD4		Calibratic	BA4	1.00	4	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:38:37 AM -05:00
	STD5		Calibratic	BA5	1.00	5	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:43:55 AM -05:00
	STD6		Calibratic	BA6	1.00	6	Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:49:13 AM -05:00
	ICV		Unknown	BA7	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 6:54:31 AM -05:00
	ICB		Unknown	R6	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 7:22:11 AM -05:00
	CCV1		Unknown	R3	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 8:10:29 PM -05:00
	CCB		Unknown	R8	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 8:21:05 PM -05:00
	HS22080958-01		Unknown	GC6	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 9:30:02 PM -05:00
	HS22080958-01MS		Unknown	GC7	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 9:35:20 PM -05:00
	HS22080958-01MSD		Unknown	GC8	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 9:40:38 PM -05:00
	CCV1		Unknown	R3	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 10:17:47 PM -05:00
	CCB		Unknown	R8	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 10:28:23 PM -05:00
	CCV		Unknown	R1	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 11:32:02 PM -05:00
	CCB		Unknown	R6	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/18/2022 11:42:39 PM -05:00
	HS22080897-01DF5		Unknown	GA1	5.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:03:51 AM -05:00
	HS22080897-01DF20		Unknown	GA2	20.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:09:10 AM -05:00
	MBLK	9056-W-SH	Unknown	R5	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:19:46 AM -05:00
	LCS		Unknown	R2	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:25:05 AM -05:00
	CCV1		Unknown	R3	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:46:18 AM -05:00
	CCB		Unknown	R8	1.00		Anions Program IS	Anions Processing M	5.0	Finished	8/19/2022 12:56:54 AM -05:00

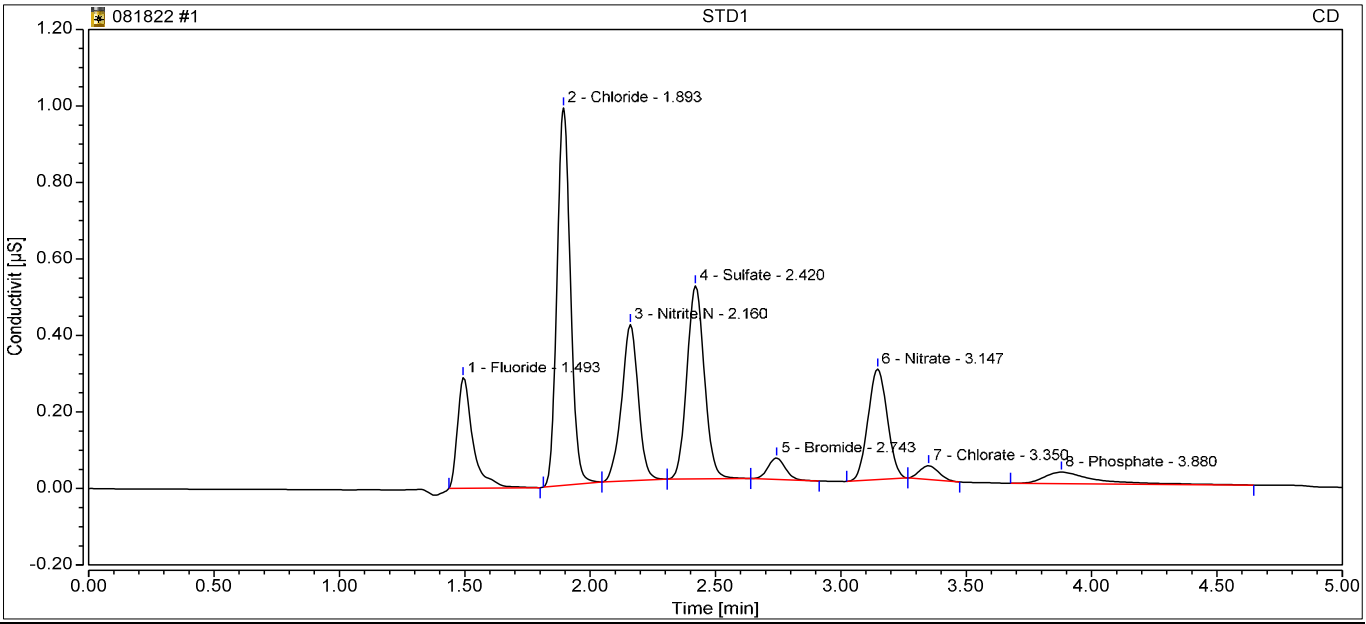
Sequence: 081822
Injection #6: STD6

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*	*14.7441*	*0.99884*	*0.0005*	*0.1948*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	12.5711	0.99923	-0.0117	0.1262	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	6	25.4566	0.99570	0.0128	0.2354	0.0000
4	Sulfate	Lin, WithOffset, 1/	Area	6	10.9364	0.99943	-0.0107	0.0916	0.0000
5	Bromide	Lin, WithOffset, 1/	Area	6	19.6430	0.99831	-0.0022	0.0544	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	14.9030	0.99899	-0.0096	0.2995	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	13.4371	0.99916	-0.0010	0.0373	0.0000
8	Phosphate	Quad, WithOffset,	Area	6	17.2378	0.99915	-0.0047	0.1036	0.0008
Maximum					**25.4566**	0.99943			
Minimum					10.9364	**0.99570**			

1 STD1			
Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**BA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:22**	*Sample Weight:*	**1.0000**

Run Time:



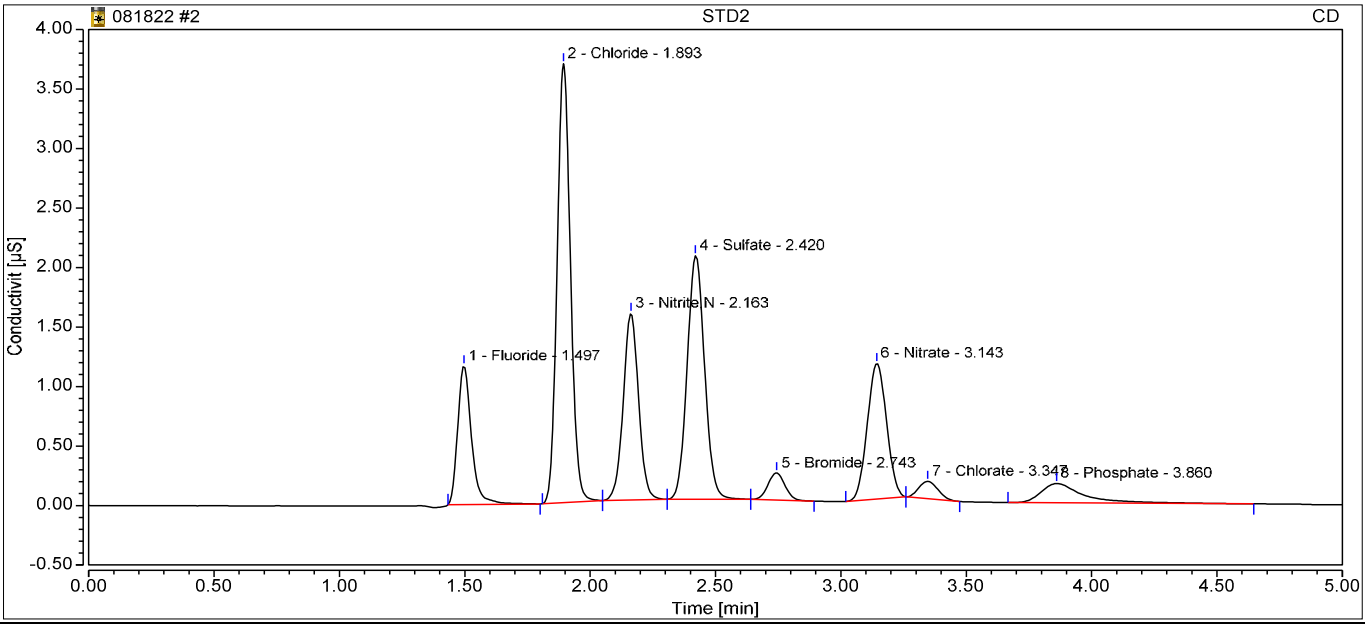
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.49	Fluoride	BMB	0.020	0.1024	0.1024	1.0000
2	1.89	Chloride	BMB	0.061	0.5767	0.5767	1.0000
3	2.16	Nitrite,N	BMB	0.031	0.0785	0.0785	1.0000
4	2.42	Sulfate	BMB	0.041	0.5615	0.5615	1.0000
5	2.74	Bromide	BMB	0.004	0.1224	0.1224	1.0000
6	3.15	Nitrate	BMB	0.026	0.1181	0.1181	1.0000
7	3.35	Chlorate	BMB	0.003	0.1124	0.1124	1.0000
8	3.88	Phosphate	BMB	0.007	0.1161	0.1161	1.0000
Total:			**0.000**	**0.194**		**1.79**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**BA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:28**	*Sample Weight:*	**1.0000**

Run Time:



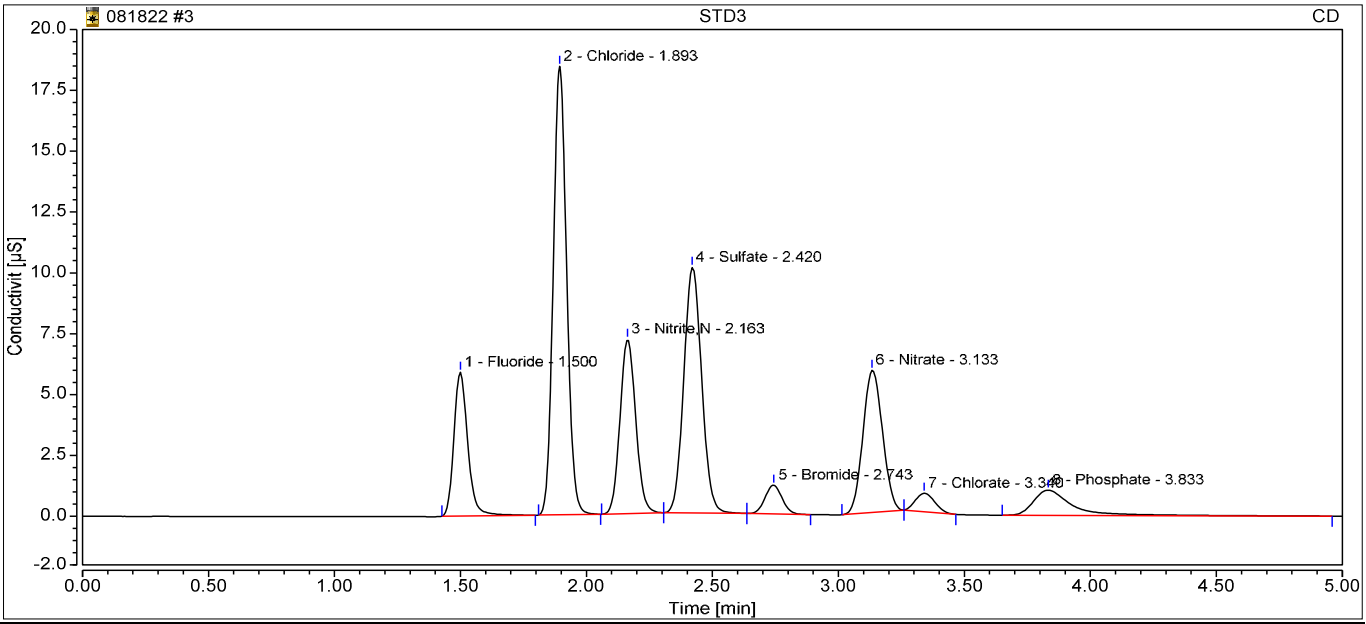
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.074	0.3782	0.3782	1.0000
2	1.89	Chloride	BMB	0.227	1.8890	1.8890	1.0000
3	2.16	Nitrite,N	BMB	0.111	0.4174	0.4174	1.0000
4	2.42	Sulfate	BMB	0.165	1.9165	1.9165	1.0000
5	2.74	Bromide	BMB	0.018	0.3702	0.3702	1.0000
6	3.14	Nitrate	BMB	0.102	0.3714	0.3714	1.0000
7	3.35	Chlorate	BMB	0.013	0.3738	0.3738	1.0000
8	3.86	Phosphate	BMB	0.033	0.3591	0.3591	1.0000
Total:			**0.000**	**0.742**		**6.08**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**BA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:33**	*Sample Weight:*	**1.0000**

Run Time:



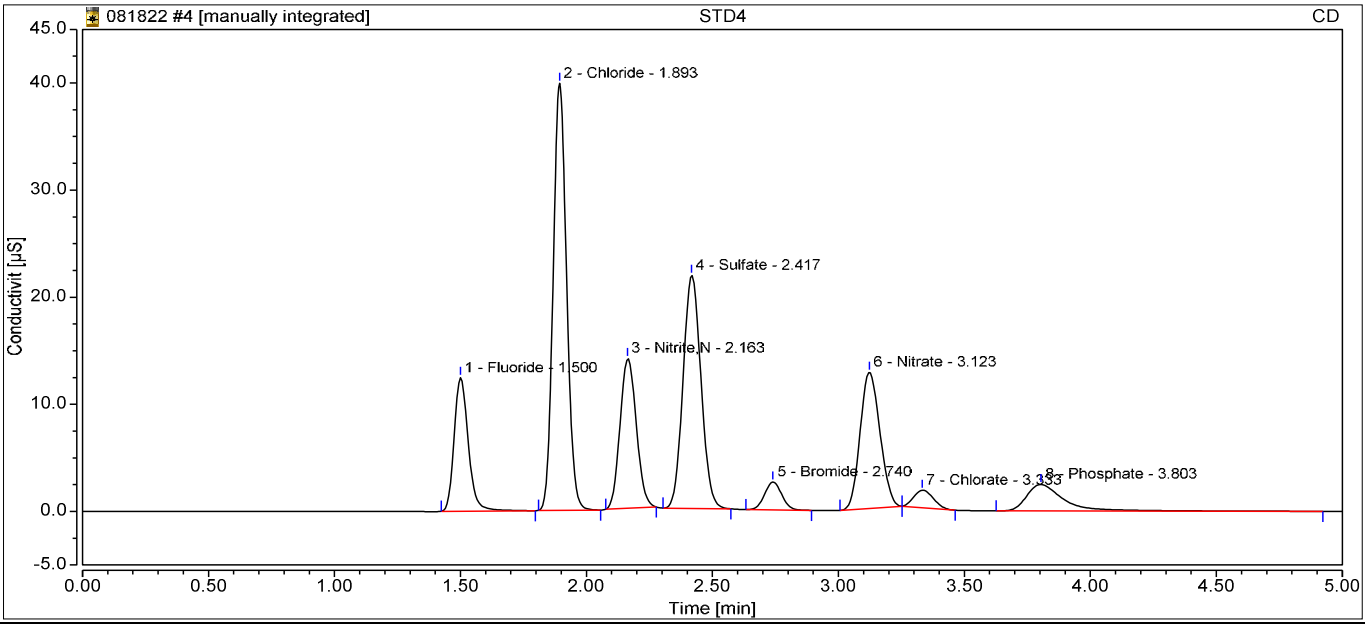
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.378	1.9371	1.9371	1.0000
2	1.89	Chloride	BMB	1.132	9.0600	9.0600	1.0000
3	2.16	Nitrite,N	BMB	0.517	2.1433	2.1433	1.0000
4	2.42	Sulfate	BMB	0.830	9.1694	9.1694	1.0000
5	2.74	Bromide	BMB	0.093	1.7480	1.7480	1.0000
6	3.13	Nitrate	BMB	0.525	1.7862	1.7862	1.0000
7	3.34	Chlorate	BMB	0.068	1.8363	1.8363	1.0000
8	3.83	Phosphate	BMB	0.186	1.8212	1.8212	1.0000
Total:			**0.000**	**3.729**		**29.50**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**BA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:38**	*Sample Weight:*	**1.0000**

Run Time:



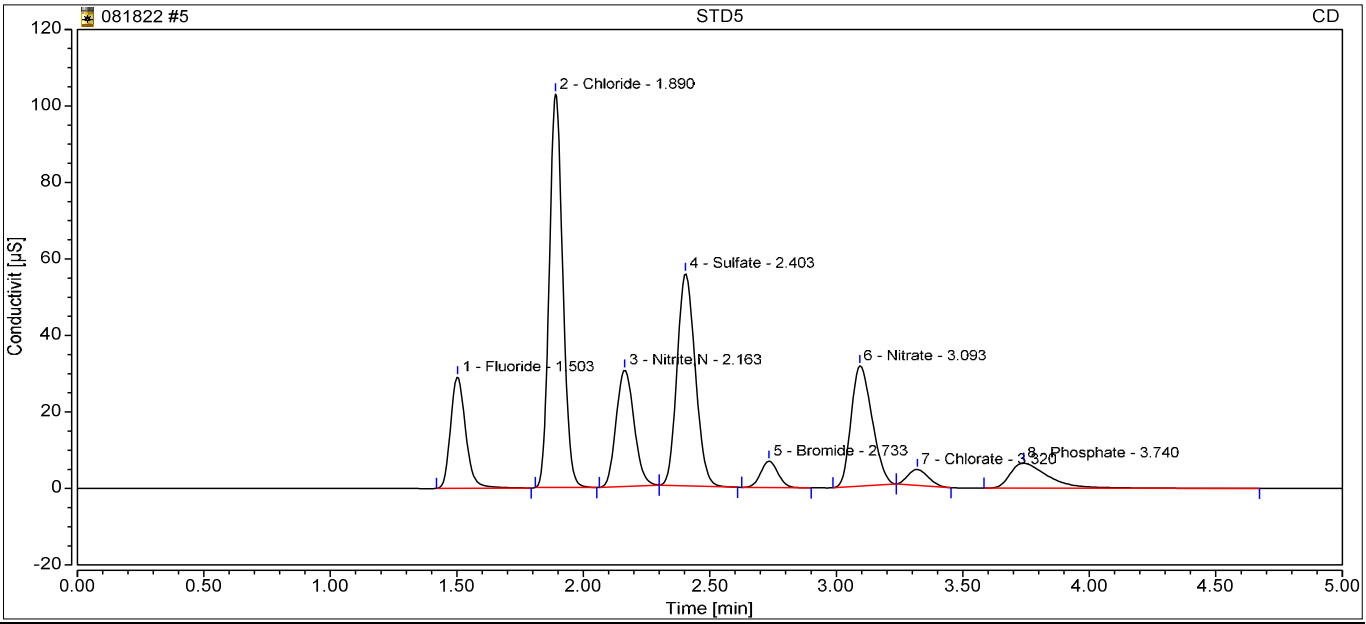
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.817	4.1914	4.1914	1.0000
2	1.89	Chloride	BMB	2.456	19.5489	19.5489	1.0000
3	2.16	Nitrite,N	BMB*	1.047	4.3929	4.3929	1.0000
4	2.42	Sulfate	BMB*	1.793	19.6765	19.6765	1.0000
5	2.74	Bromide	BMB	0.205	3.8074	3.8074	1.0000
6	3.12	Nitrate	BMB	1.158	3.8988	3.8988	1.0000
7	3.33	Chlorate	BMB	0.148	3.9880	3.9880	1.0000
8	3.80	Phosphate	BMB	0.425	4.0343	4.0343	1.0000
Total:			**0.000**	**8.049**		**63.54**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:43**	*Sample Weight:*	**1.0000**

Run Time:



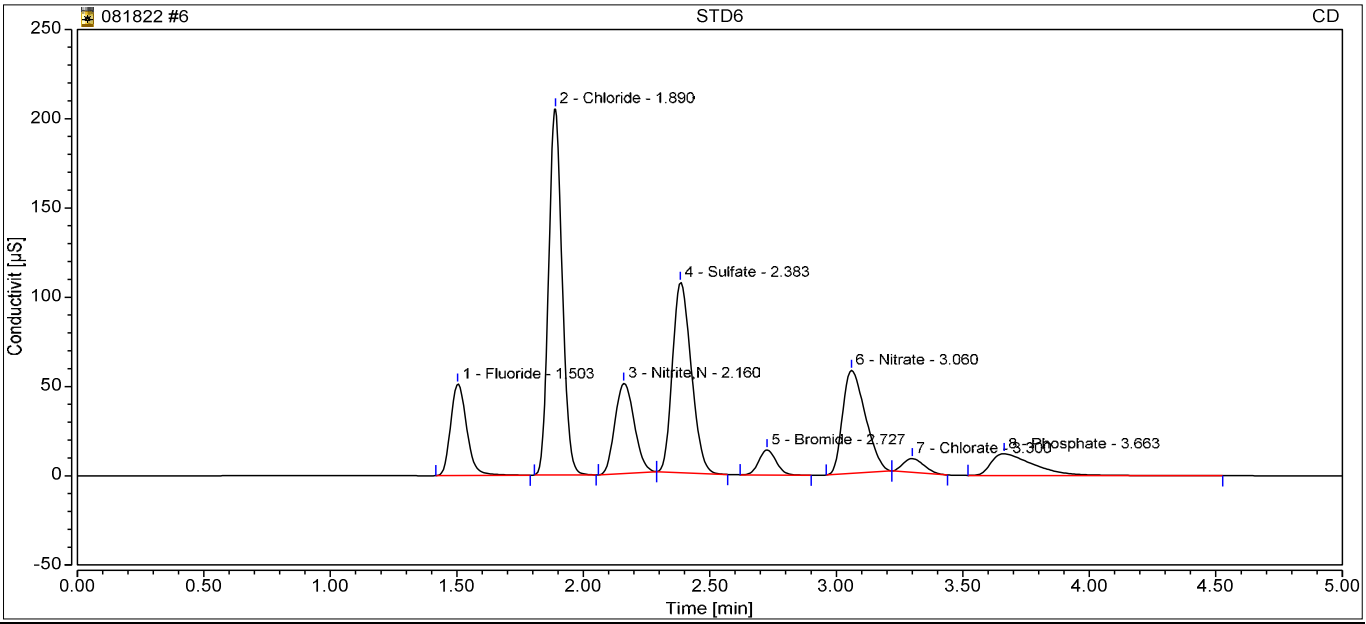
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	2.023	10.3848	10.3848	1.0000
2	1.89	Chloride	BMB	6.356	50.4404	50.4404	1.0000
3	2.16	Nitrite,N	BMB	2.500	10.5639	10.5639	1.0000
4	2.40	Sulfate	BMB	4.630	50.6324	50.6324	1.0000
5	2.73	Bromide	BMB	0.544	10.0317	10.0317	1.0000
6	3.09	Nitrate	BMB	3.021	10.1208	10.1208	1.0000
7	3.32	Chlorate	BMB	0.385	10.3302	10.3302	1.0000
8	3.74	Phosphate	BMB	1.140	10.2797	10.2797	1.0000
Total:			**0.000**	**20.598**		**162.78**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:49**	*Sample Weight:*	**1.0000**

Run Time:



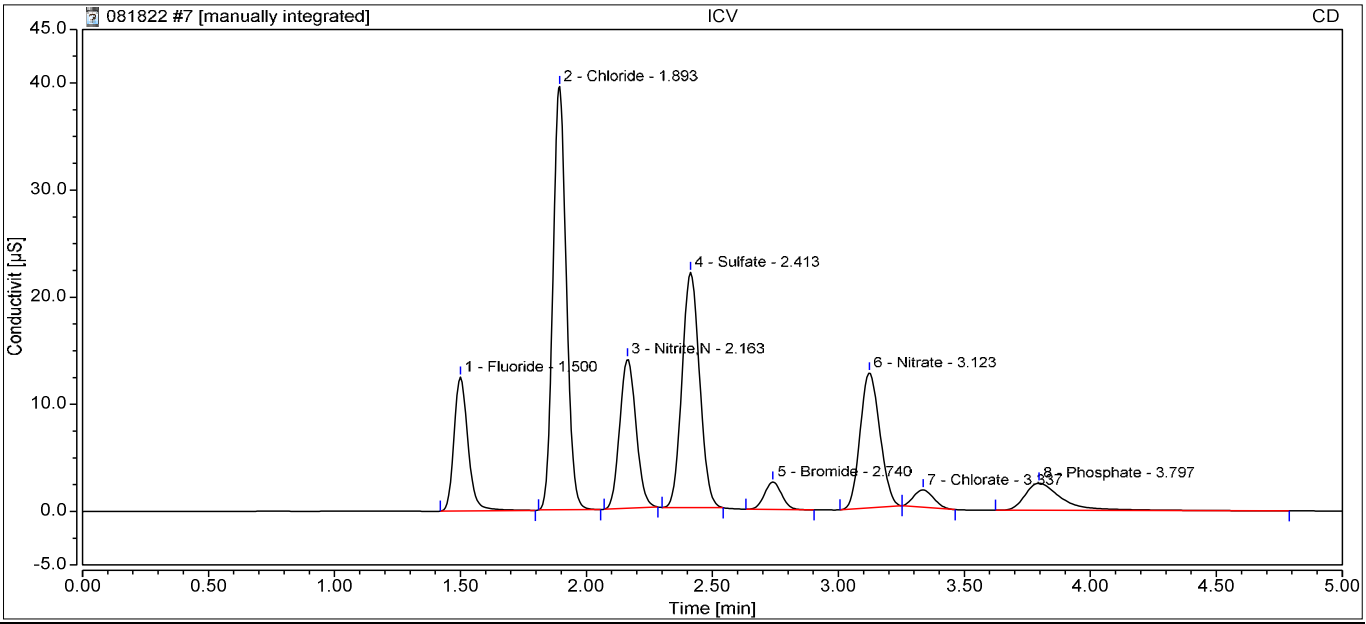
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	3.800	19.5060	19.5060	1.0000
2	1.89	Chloride	BMB	12.737	100.9851	100.9851	1.0000
3	2.16	Nitrite,N	BMB	4.463	18.9041	18.9041	1.0000
4	2.38	Sulfate	BMB	9.204	100.5438	100.5438	1.0000
5	2.73	Bromide	BMB	1.109	20.4202	20.4202	1.0000
6	3.06	Nitrate	BMB	6.041	20.2046	20.2046	1.0000
7	3.30	Chlorate	BMB	0.740	19.8592	19.8592	1.0000
8	3.66	Phosphate	BMB	2.355	19.8849	19.8849	1.0000
Total:			**0.000**	**40.449**		**320.31**	

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 06:54**	*Sample Weight:*	**1.0000**

Run Time:



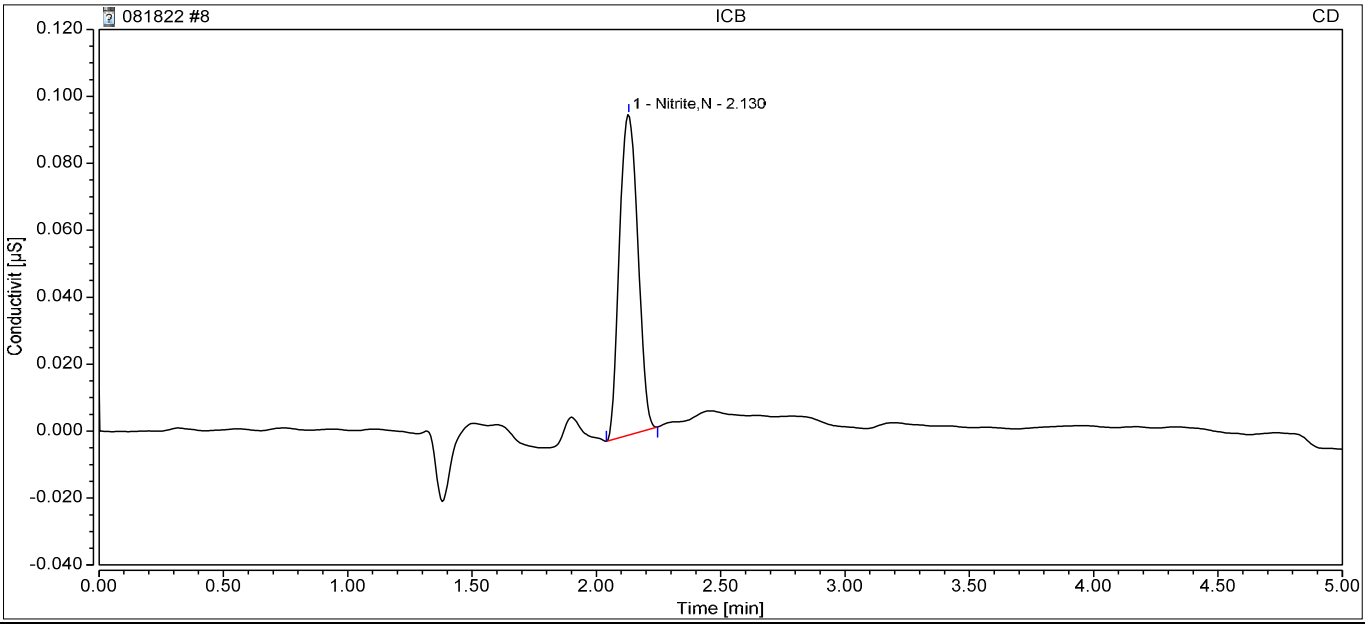
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.810	4.1534	4.1534	1.0000
2	1.89	Chloride	BMB	2.430	19.3388	19.3388	1.0000
3	2.16	Nitrite,N	BMB*	1.046	4.3869	4.3869	1.0000
4	2.41	Sulfate	BMB*	1.775	19.4888	19.4888	1.0000
5	2.74	Bromide	BMB	0.202	3.7551	3.7551	1.0000
6	3.12	Nitrate	BMB	1.146	3.8593	3.8593	1.0000
7	3.34	Chlorate	BMB	0.146	3.9367	3.9367	1.0000
8	3.80	Phosphate	BMB	0.433	4.1048	4.1048	1.0000
Total:			**0.000**	**7.988**		**63.02**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**R6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 07:22**	*Sample Weight:*	**1.0000**

Run Time:

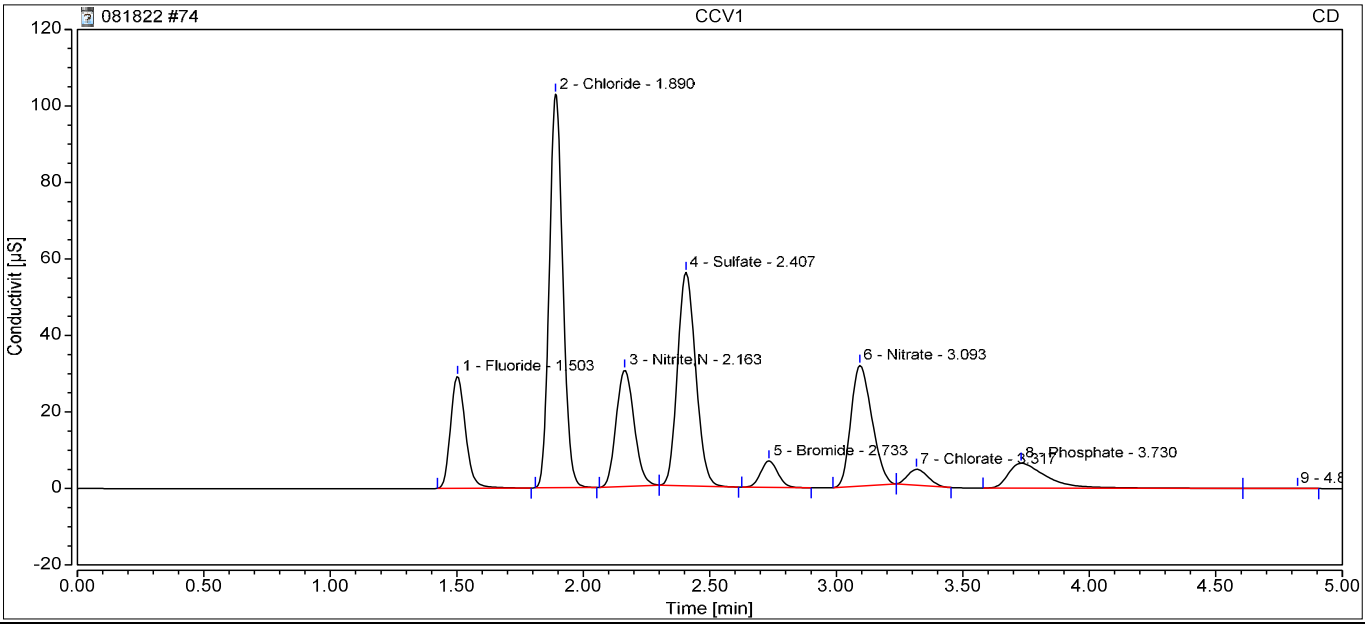


Integration Results

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
1	2.13	Nitrite,N	BMB	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.	Bromide	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**	

74 CCV1			
Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**R3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 20:10**	*Sample Weight:*	**1.0000**

Run Time:



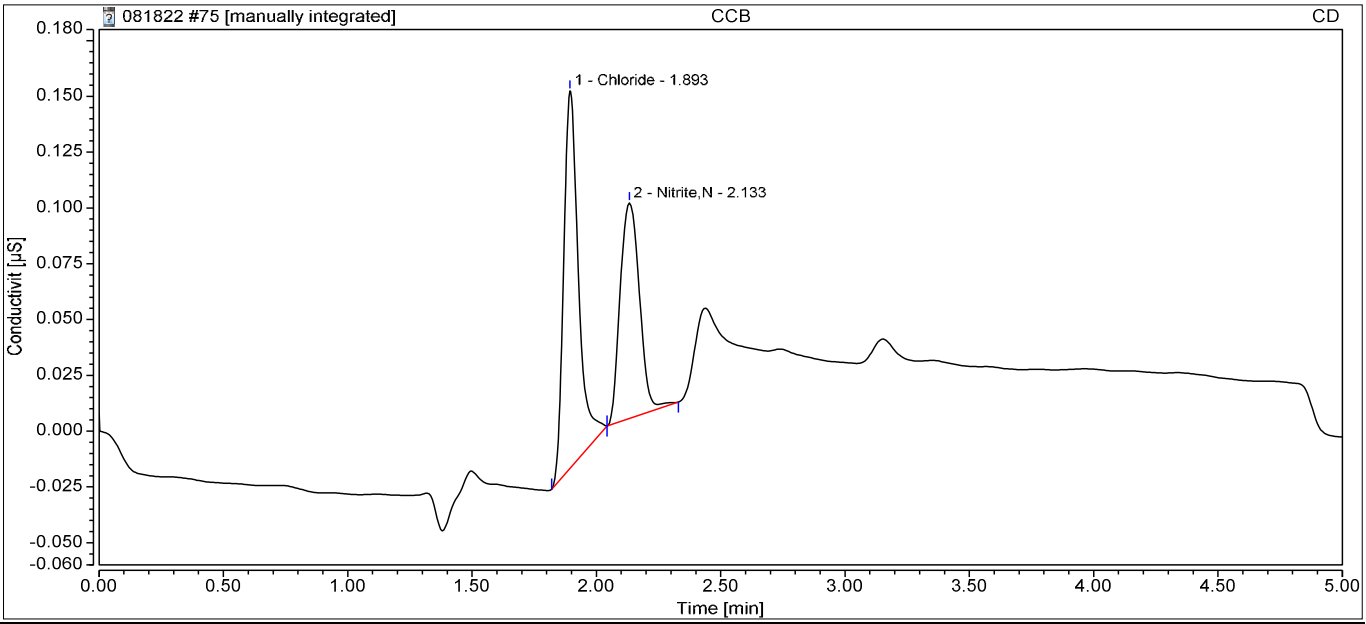
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	2.015	10.3426	10.3426	1.0000
2	1.89	Chloride	BMB	6.358	50.4528	50.4528	1.0000
3	2.16	Nitrite,N	BMB	2.502	10.5728	10.5728	1.0000
4	2.41	Sulfate	BMB	4.646	50.8151	50.8151	1.0000
5	2.73	Bromide	BMB	0.543	10.0197	10.0197	1.0000
6	3.09	Nitrate	BMB	3.026	10.1357	10.1357	1.0000
7	3.32	Chlorate	BMB	0.384	10.3251	10.3251	1.0000
8	3.73	Phosphate	BMB	1.136	10.2437	10.2437	1.0000
Total:			**0.000**	**20.610**		**162.91**	

75 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**R8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 20:21**	*Sample Weight:*	**1.0000**

Run Time:



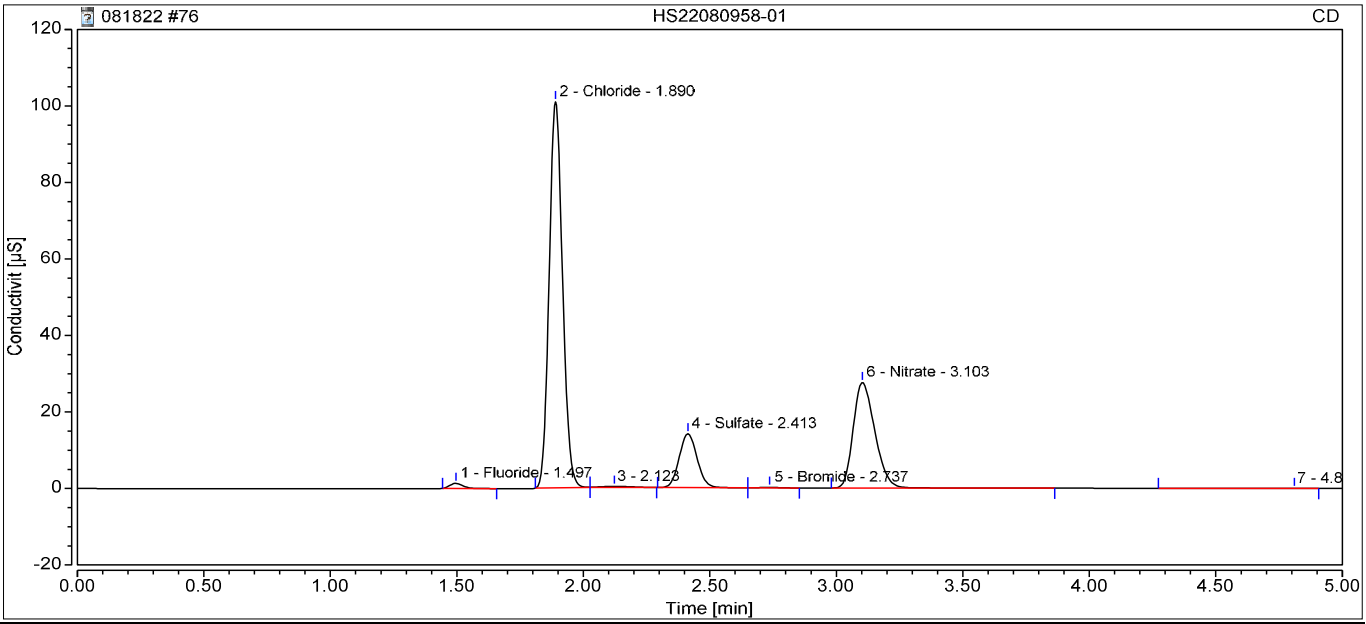
Integration Results

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	1.89	Chloride	BMB	0.012	0.1844	0.1844	1.0000
2	2.13	Nitrite,N	BMB	0.009	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.	Bromide	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**	**0.020**		**0.18**	

76 HS22080958-01

Sample Name:	**HS22080958-01**	*Injection Volume:*	**5.00**
Vial Number:	**GC6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 21:30**	*Sample Weight:*	**1.0000**

Run Time:



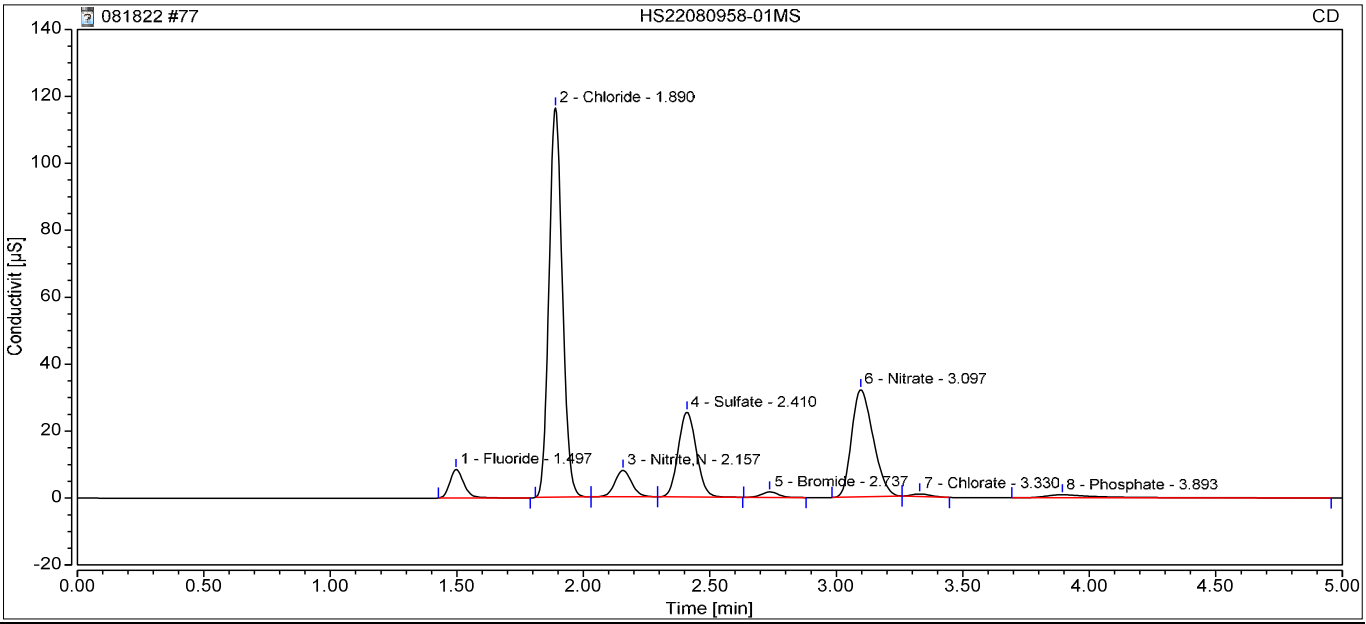
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.080	0.4100	0.4100	1.0000
2	1.89	Chloride	BMB	6.163	48.9093	48.9093	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
4	2.41	Sulfate	BMB	1.158	12.7517	12.7517	1.0000
5	2.74	Bromide	BMB	0.011	0.2461	0.2461	1.0000
6	3.10	Nitrate	BMB	2.732	9.1557	9.1557	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**	**10.145**		**71.47**	

77 HS22080958-01MS

Sample Name:	**HS22080958-01MS**	*Injection Volume:*	**5.00**
Vial Number:	**GC7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 21:35**	*Sample Weight:*	**1.0000**

Run Time:



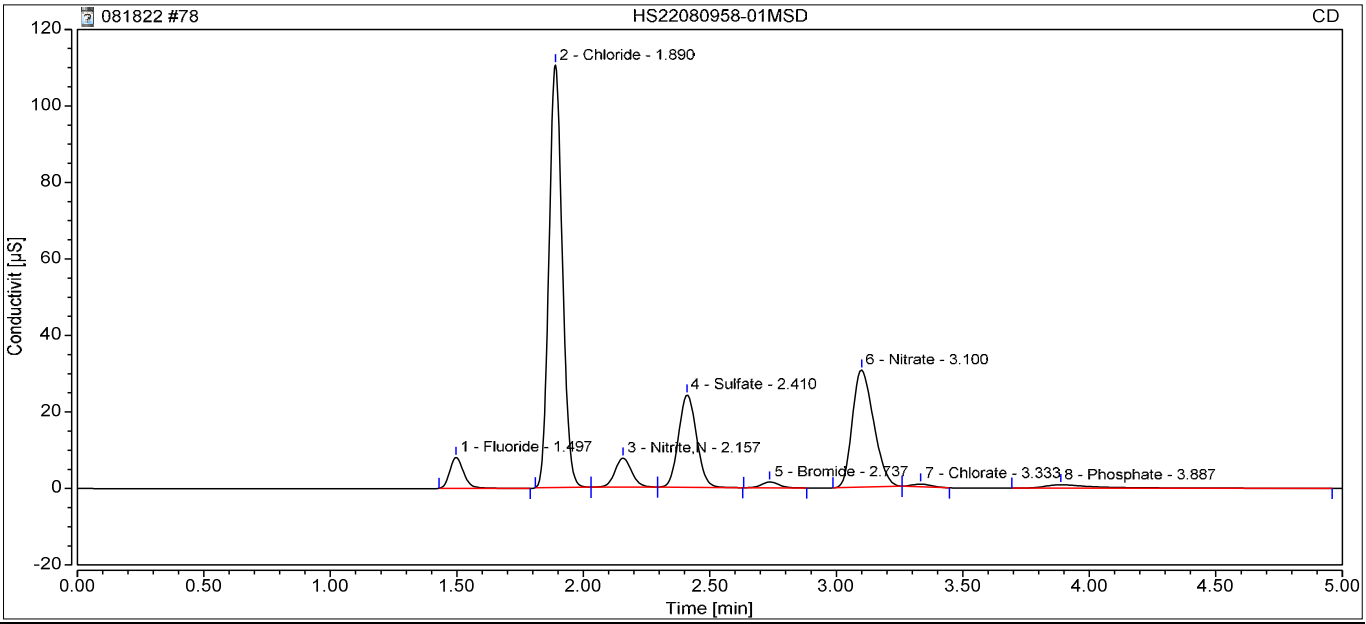
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.552	2.8313	2.8313	1.0000
2	1.89	Chloride	BMB	7.127	56.5488	56.5488	1.0000
3	2.16	Nitrite,N	BMB	0.610	2.5357	2.5357	1.0000
4	2.41	Sulfate	BMB	2.103	23.0673	23.0673	1.0000
5	2.74	Bromide	BMB	0.124	2.3263	2.3263	1.0000
6	3.10	Nitrate	BMB	3.159	10.5796	10.5796	1.0000
7	3.33	Chlorate	BMB	0.065	1.7698	1.7698	1.0000
8	3.89	Phosphate	BMB	0.226	2.1969	2.1969	1.0000
Total:			**0.000**	**13.967**		**101.86**	

78 HS22080958-01MSD

Sample Name:	**HS22080958-01MSD**	*Injection Volume:*	**5.00**
Vial Number:	**GC8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 21:40**	*Sample Weight:*	**1.0000**

Run Time:



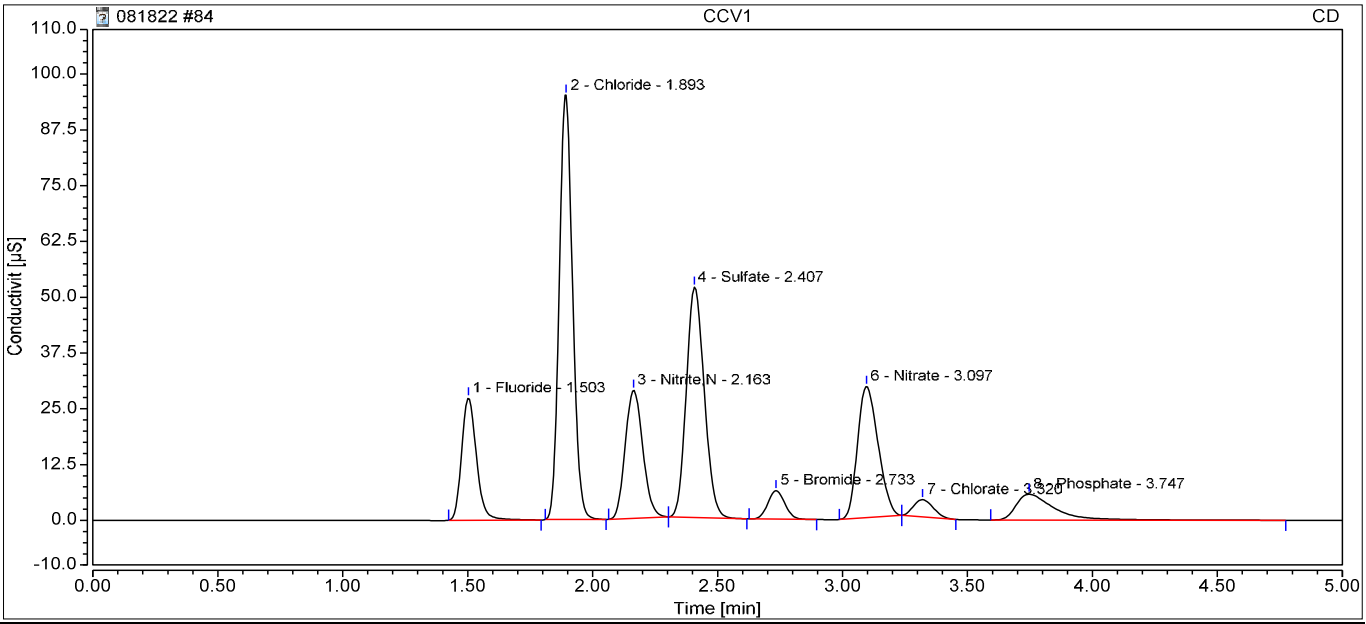
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	0.517	2.6536	2.6536	1.0000
2	1.89	Chloride	BMB	6.771	53.7259	53.7259	1.0000
3	2.16	Nitrite,N	BMB	0.582	2.4160	2.4160	1.0000
4	2.41	Sulfate	BMB	1.999	21.9248	21.9248	1.0000
5	2.74	Bromide	BMB	0.118	2.2093	2.2093	1.0000
6	3.10	Nitrate	BMB	3.006	10.0710	10.0710	1.0000
7	3.33	Chlorate	BMB	0.062	1.6920	1.6920	1.0000
8	3.89	Phosphate	BMB	0.222	2.1583	2.1583	1.0000
Total:			**0.000**	**13.277**		**96.85**	

84 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**R3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 22:17**	*Sample Weight:*	**1.0000**

Run Time:



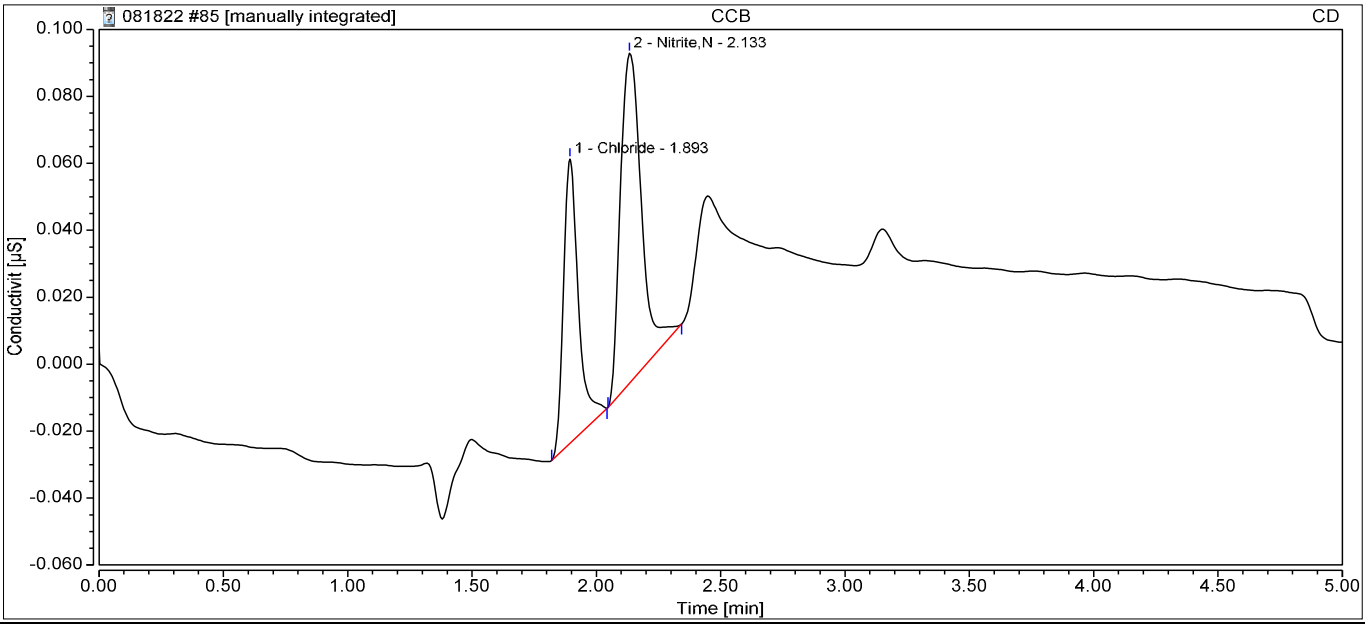
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB	1.884	9.6700	9.6700	1.0000
2	1.89	Chloride	BMB	5.887	46.7271	46.7271	1.0000
3	2.16	Nitrite,N	BMB	2.345	9.9058	9.9058	1.0000
4	2.41	Sulfate	BMB	4.307	47.1081	47.1081	1.0000
5	2.73	Bromide	BMB	0.502	9.2719	9.2719	1.0000
6	3.10	Nitrate	BMB	2.807	9.4058	9.4058	1.0000
7	3.32	Chlorate	BMB	0.357	9.5833	9.5833	1.0000
8	3.75	Phosphate	BMB	1.026	9.3126	9.3126	1.0000
Total:			**0.000**	**19.115**		**150.98**	

85 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**R8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 22:28**	*Sample Weight:*	**1.0000**

Run Time:



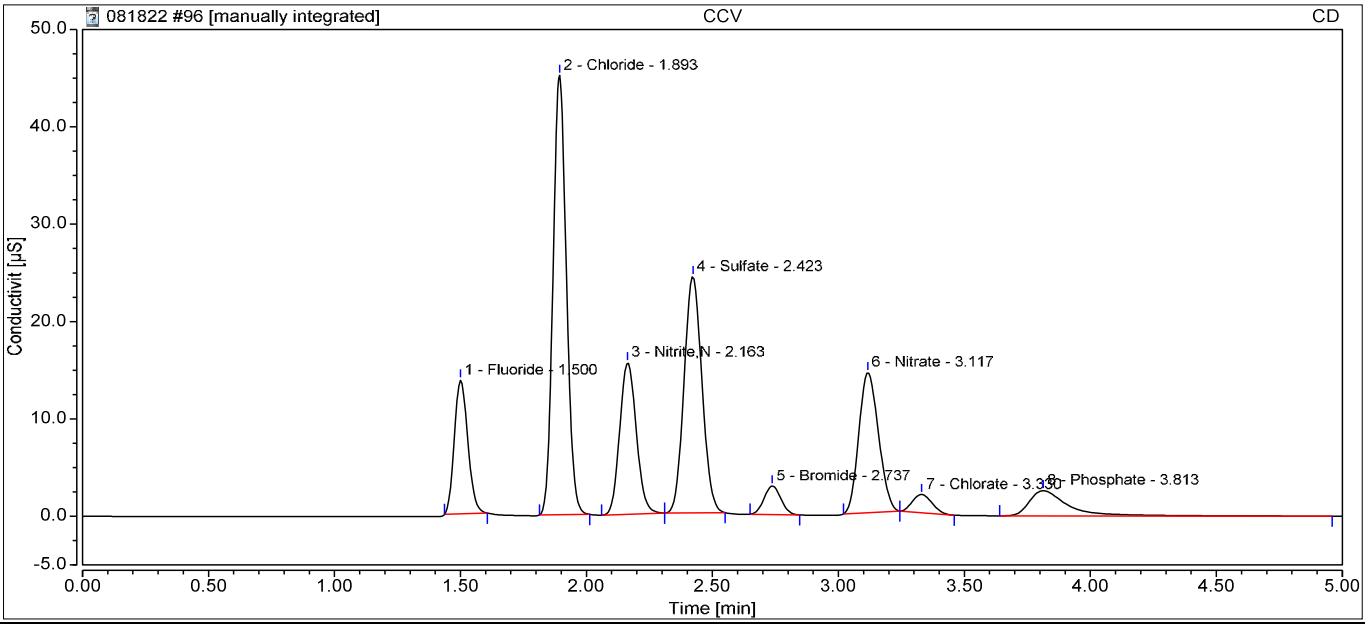
Integration Results

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	1.89	Chloride	BMB	0.006	0.1394	0.1394	1.0000
2	2.13	Nitrite,N	BMB	0.010	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.	Bromide	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**	**0.016**		**0.14**	

96 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**R1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 23:32**	*Sample Weight:*	**1.0000**

Run Time:



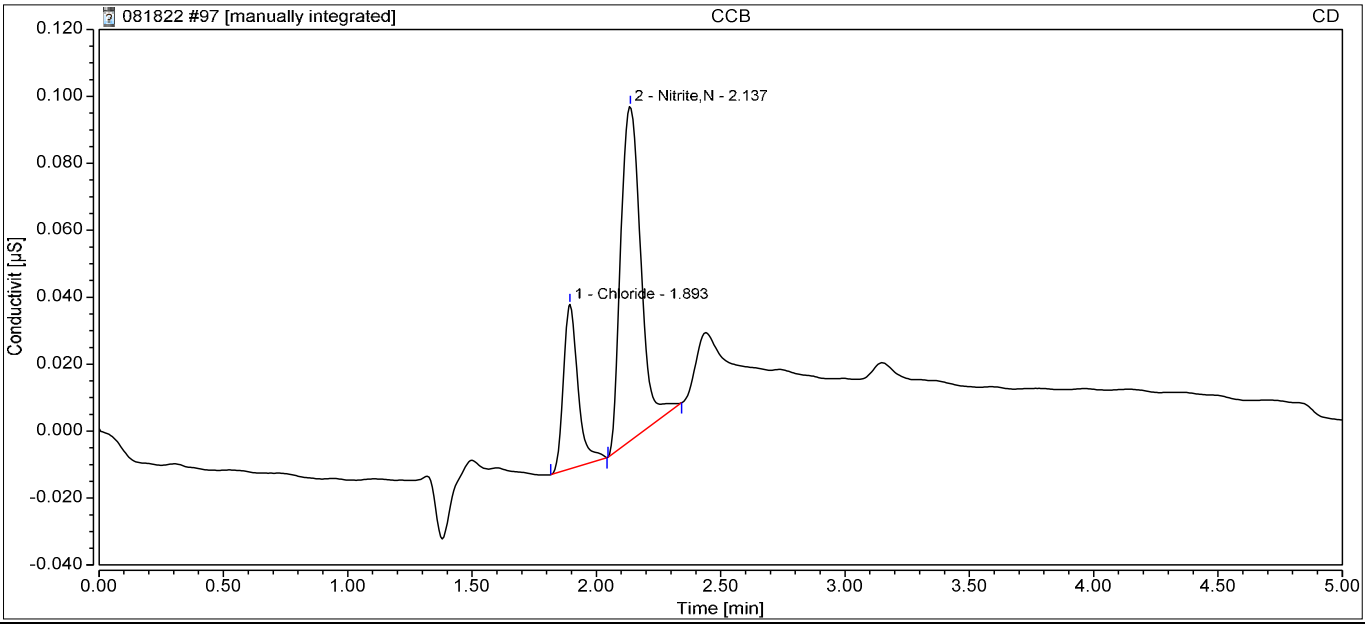
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB*	0.856	4.3896	4.3896	1.0000
2	1.89	Chloride	BMB*	2.765	21.9958	21.9958	1.0000
3	2.16	Nitrite,N	BMb*	1.191	5.0059	5.0059	1.0000
4	2.42	Sulfate	bMB*	1.995	21.8820	21.8820	1.0000
5	2.74	Bromide	BMB*	0.227	4.2085	4.2085	1.0000
6	3.12	Nitrate	BMB*	1.304	4.3866	4.3866	1.0000
7	3.33	Chlorate	BMB	0.170	4.5795	4.5795	1.0000
8	3.81	Phosphate	BMB	0.466	4.4012	4.4012	1.0000
Total:			**0.000**	**8.973**		**70.85**	

97 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**R6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2022 23:42**	*Sample Weight:*	**1.0000**

Run Time:



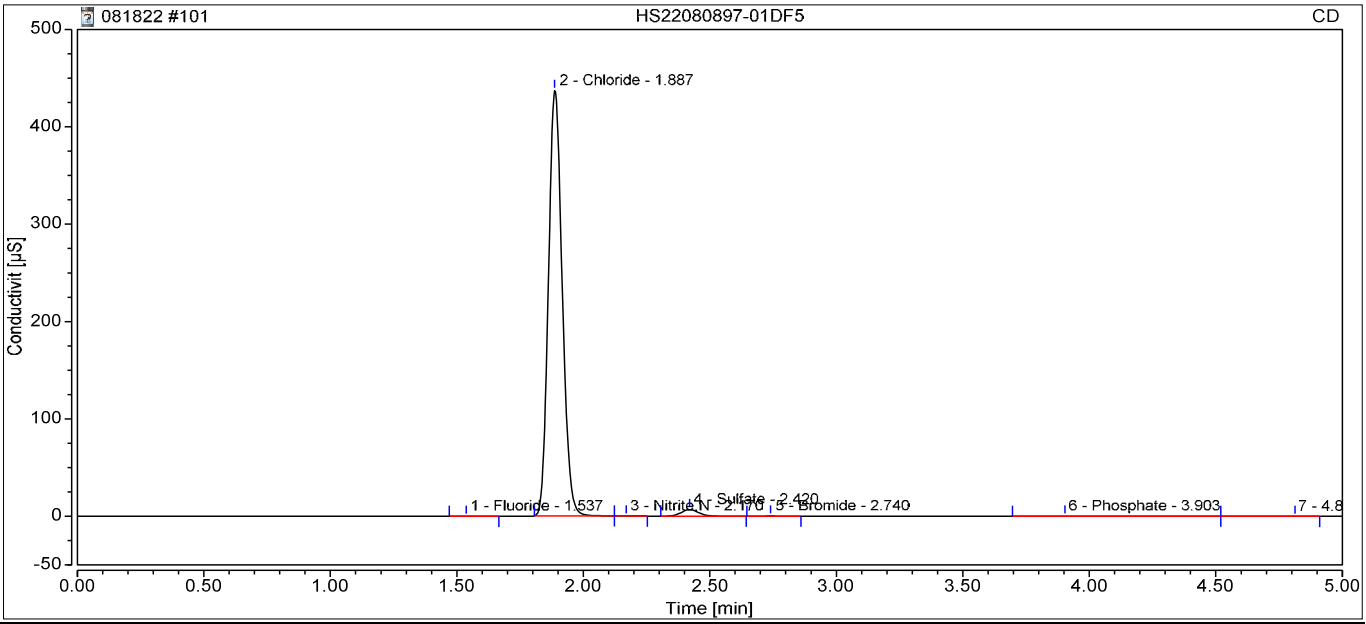
Integration Results

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	1.89	Chloride	BMB	0.003	0.1193	0.1193	1.0000
2	2.14	Nitrite,N	BMB	0.009	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.	Bromide	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**		**0.12**	

101 HS22080897-01DF5

Sample Name:	**HS22080897-01DF5**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**5.0000**
Recording Time:	**08/19/2022 00:03**	*Sample Weight:*	**1.0000**

Run Time:

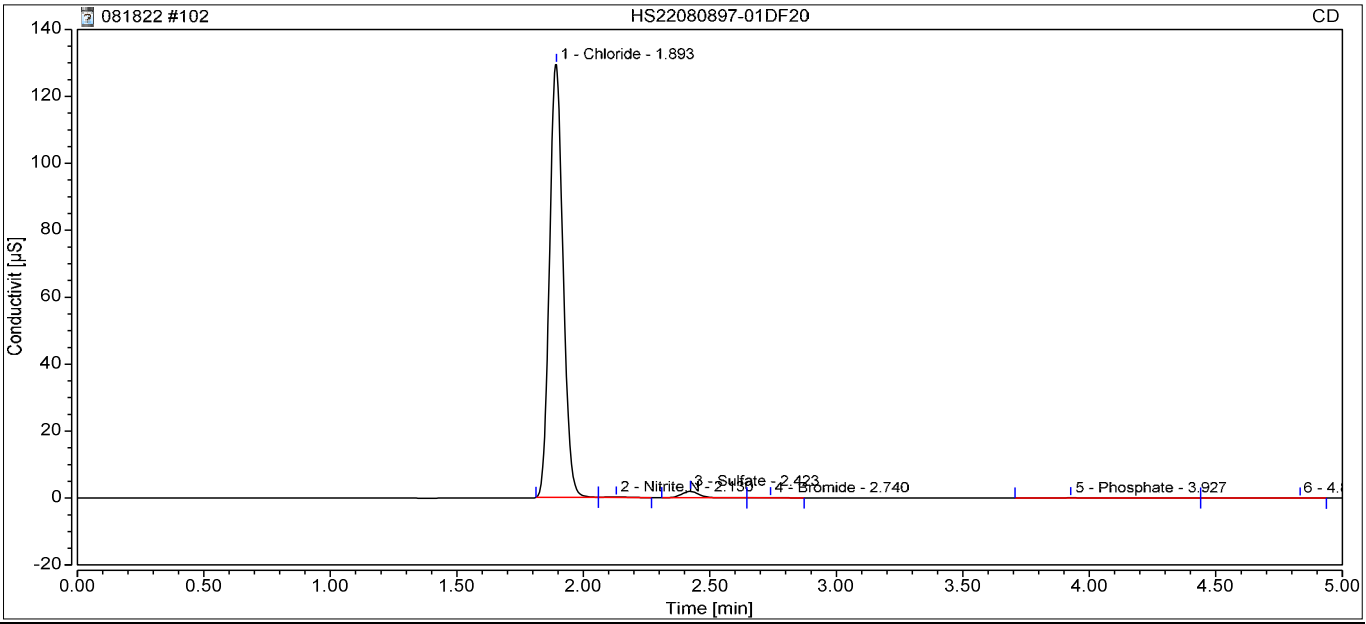


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.54	Fluoride	BMB	0.003	0.0110	0.0552	5.0000
2	1.89	Chloride	BMB	27.489	217.8451	1089.2256	5.0000
3	2.17	Nitrite,N	BMB	0.002	n.a.	n.a.	5.0000
4	2.42	Sulfate	BMB	0.535	5.9578	29.7890	5.0000
5	2.74	Bromide	BMB	0.012	0.2639	1.3193	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
6	3.90	Phosphate	BMB	0.043	0.4632	2.3162	5.0000
Total:			**0.000**	**28.085**		**1122.71**	

102 HS22080897-01DF20			
Sample Name:	**HS22080897-01DF20**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**20.0000**
Recording Time:	**08/19/2022 00:09**	*Sample Weight:*	**1.0000**

Run Time:



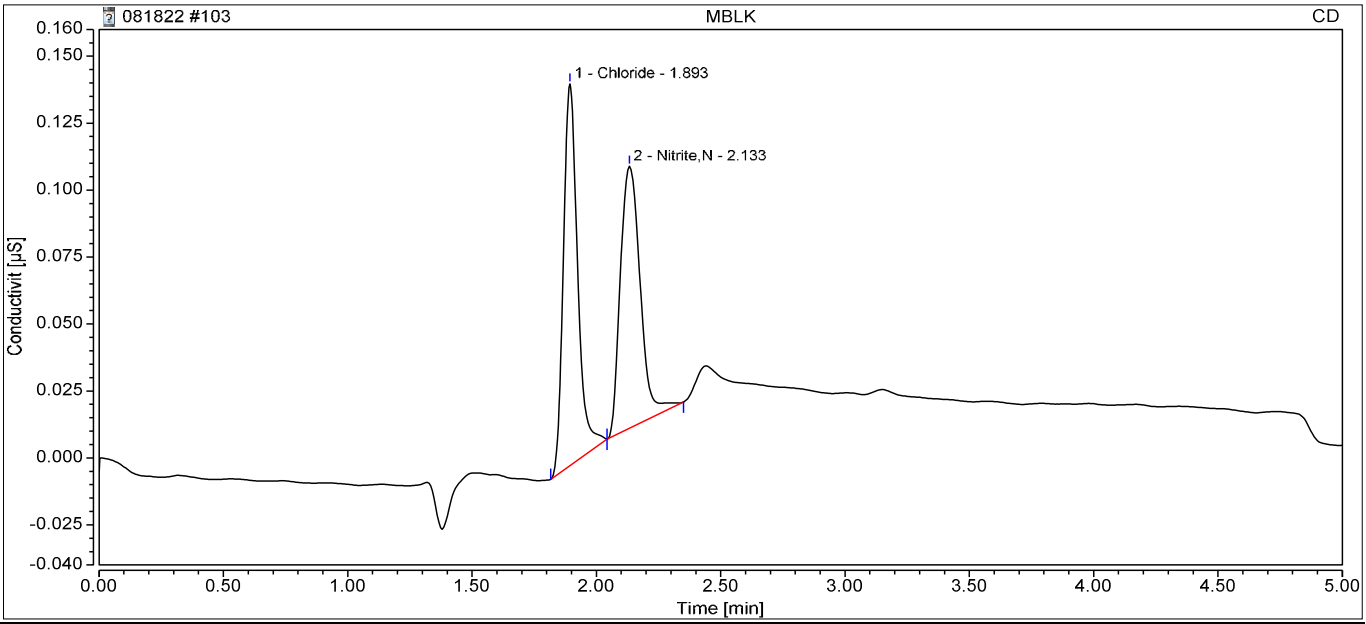
Integration Results

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.	20.0000
1	1.89	Chloride	BMB	8.006	63.5144	1270.2876	20.0000
2	2.13	Nitrite,N	BMB	0.010	n.a.	n.a.	20.0000
3	2.42	Sulfate	BMB	0.152	1.7715	35.4305	20.0000
4	2.74	Bromide	BMB	0.003	0.1024	2.0477	20.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	20.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	20.0000
5	3.93	Phosphate	BMB	0.011	0.1530	3.0605	20.0000
Total:			**0.000**	**8.183**		**1310.83**	

103 MBLK

Sample Name:	**MBLK**	*Injection Volume:*	**5.00**
Vial Number:	**R5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2022 00:19**	*Sample Weight:*	**1.0000**

Run Time:



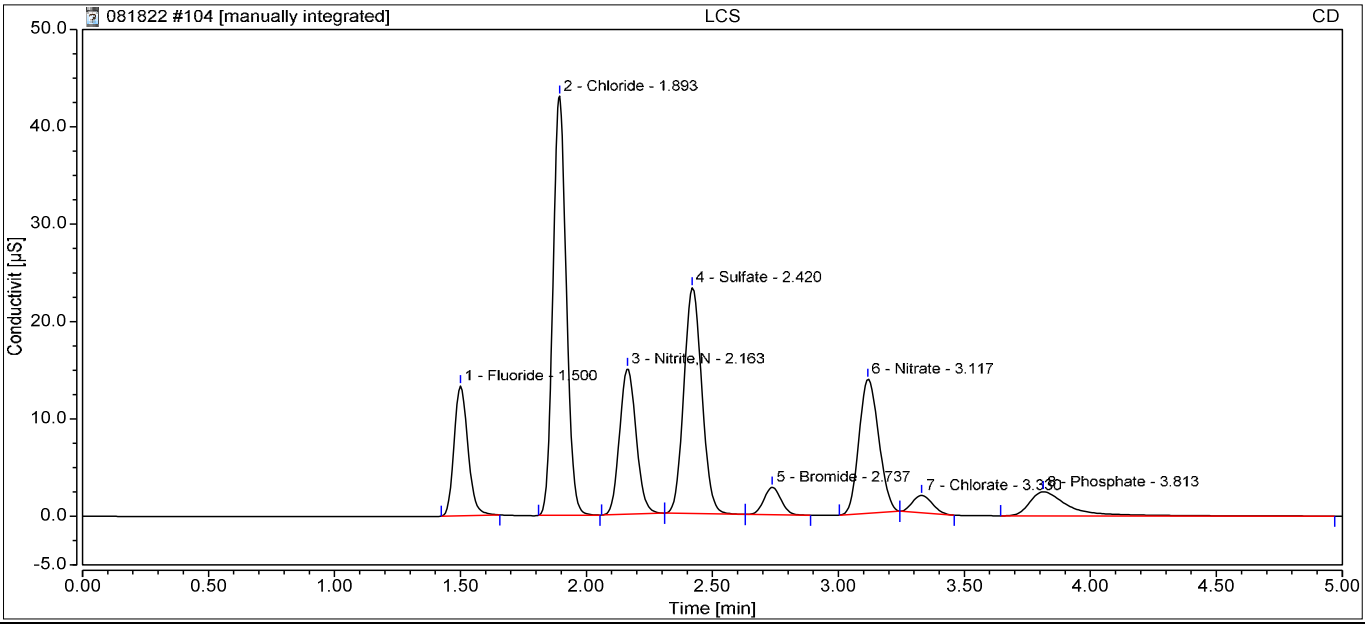
Integration Results

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	1.89	Chloride	BMB	0.009	0.1674	0.1674	1.0000
2	2.13	Nitrite,N	BMB	0.009	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.	Bromide	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**	**0.018**		**0.17**	

104 LCS

Sample Name:	**LCS**	*Injection Volume:*	**5.00**
Vial Number:	**R2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2022 00:25**	*Sample Weight:*	**1.0000**

Run Time:



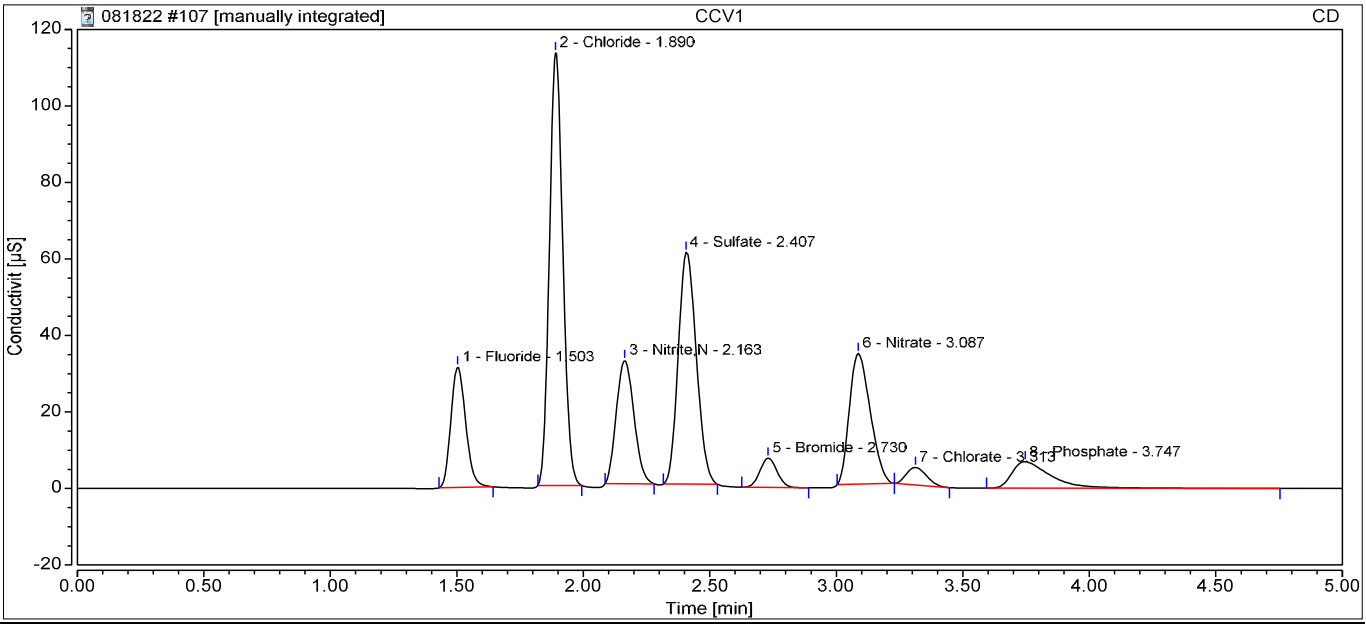
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB*	0.856	4.3932	4.3932	1.0000
2	1.89	Chloride	BMB	2.647	21.0600	21.0600	1.0000
3	2.16	Nitrite,N	BMB	1.141	4.7904	4.7904	1.0000
4	2.42	Sulfate	BMB	1.921	21.0761	21.0761	1.0000
5	2.74	Bromide	BMB	0.222	4.1128	4.1128	1.0000
6	3.12	Nitrate	BMB	1.254	4.2184	4.2184	1.0000
7	3.33	Chlorate	BMB	0.162	4.3719	4.3719	1.0000
8	3.81	Phosphate	BMB	0.449	4.2464	4.2464	1.0000
Total:			**0.000**	**8.651**		**68.27**	

107 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**R3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2022 00:46**	*Sample Weight:*	**1.0000**

Run Time:



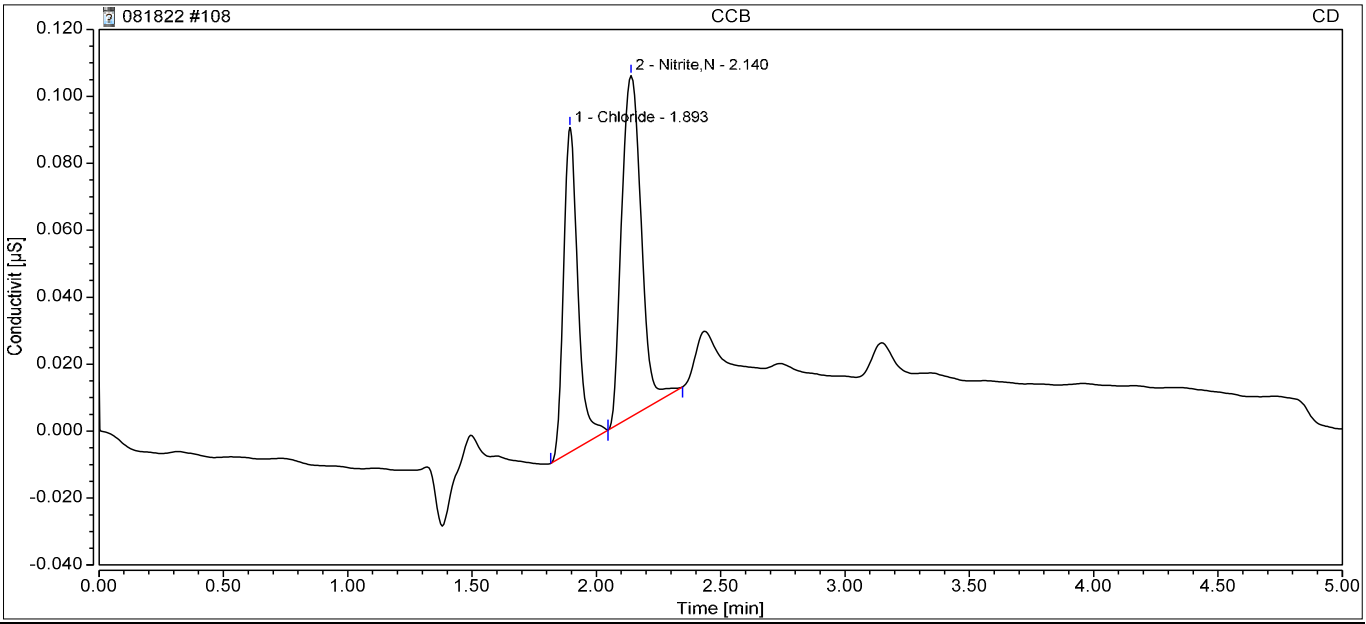
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	1.50	Fluoride	BMB*	2.142	10.9927	10.9927	1.0000
2	1.89	Chloride	BMB*	6.917	54.8863	54.8863	1.0000
3	2.16	Nitrite,N	BMB*	2.600	10.9901	10.9901	1.0000
4	2.41	Sulfate	BMB*	5.018	54.8662	54.8662	1.0000
5	2.73	Bromide	BMB	0.602	11.1029	11.1029	1.0000
6	3.09	Nitrate	BMB*	3.264	10.9297	10.9297	1.0000
7	3.31	Chlorate	BMB	0.426	11.4371	11.4371	1.0000
8	3.75	Phosphate	BMB	1.241	11.1199	11.1199	1.0000
Total:			**0.000**	**22.209**		**176.32**	

108 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**R8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Program ISO37mM 150mm short 0.4 Constant current**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method ISO**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2022 00:56**	*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	1.89	Chloride	BMB	0.006	0.1441	0.1441	1.0000
2	2.14	Nitrite,N	BMB	0.009	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.	Bromide	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**	**0.016**		**0.14**	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 01, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22081350**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 25, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22081350

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081350-01	LH18/24-SP650_082422	Water		24-Aug-2022 13:00	25-Aug-2022 09:30	☐
HS22081350-02	LH18/24-SP650_082422_AIX	Water		24-Aug-2022 13:00	25-Aug-2022 09:30	☐
HS22081350-03	LH18/24-SP650_082422_BIX	Water		24-Aug-2022 13:00	25-Aug-2022 09:30	☐

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22081350

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E415.1

Batch ID: R416335

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

WetChemistry by Method E350.3

Batch ID: R416076

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

WetChemistry by Method E365.3

Batch ID: R416032

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

ALS Houston, US

Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22081350

Sample ID: LH18/24-SP650_082422

Lab ID:HS22081350-01

Collection Date: 24-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: YP
Nitrogen, Ammonia (As N)	**16**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	29-Aug-2022 14:50
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: TH
Phosphorus, Total Orthophosphate (As P)	**4.74**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	26-Aug-2022 07:30
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.32**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Sep-2022 03:52

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

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22081350

Sample ID: LH18/24-SP650_082422_AIX Lab ID:HS22081350-02

Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Aug-2022 18:50

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

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22081350

Sample ID: LH18/24-SP650_082422_BIX Lab ID:HS22081350-03

Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Aug-2022 18:50

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

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081350

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R416032 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22081350-01	LH18/24-SP650_082422	24 Aug 2022 13:00			26 Aug 2022 07:30	10
Batch ID: R416076 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22081350-01	LH18/24-SP650_082422	24 Aug 2022 13:00			29 Aug 2022 14:50	1
Batch ID: R416294 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22081350-02	LH18/24-SP650_082422_AIX	24 Aug 2022 13:00			31 Aug 2022 18:50	1
HS22081350-03	LH18/24-SP650_082422_BIX	24 Aug 2022 13:00			31 Aug 2022 18:50	1
Batch ID: R416335 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22081350-01	LH18/24-SP650_082422	24 Aug 2022 13:00			01 Sep 2022 03:52	1

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081350

QC BATCH REPORT

Batch ID: R416032 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R416032** Units: **mg/L** Analysis Date: **26-Aug-2022 07:30**
Client ID: Run ID: **UV-2450_416032** SeqNo: **6824183** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R416032** Units: **mg/L** Analysis Date: **26-Aug-2022 07:30**
Client ID: Run ID: **UV-2450_416032** SeqNo: **6824182** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.265	0.0250	0.25	0	106	85 - 115				

LCSD Sample ID: **LCSD-R416032** Units: **mg/L** Analysis Date: **26-Aug-2022 07:30**
Client ID: Run ID: **UV-2450_416032** SeqNo: **6824181** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.265	0.0250	0.25	0	106	85 - 115	0.265	0	20	

MS Sample ID: **HS22081350-01MS** Units: **mg/L** Analysis Date: **26-Aug-2022 07:30**
Client ID: **LH18/24-SP650_082422** Run ID: **UV-2450_416032** SeqNo: **6824185** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	6.94	0.250	2.5	4.74	88.0	80 - 120				

MSD Sample ID: **HS22081350-01MSD** Units: **mg/L** Analysis Date: **26-Aug-2022 07:30**
Client ID: **LH18/24-SP650_082422** Run ID: **UV-2450_416032** SeqNo: **6824184** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	6.95	0.250	2.5	4.74	88.4	80 - 120	6.94	0.144	20	

The following samples were analyzed in this batch: HS22081350-01

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081350

QC BATCH REPORT

Batch ID: R416076 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK	Sample ID: **MBLK-R416076**			Units: **mg/L**		Analysis Date: **29-Aug-2022 14:50**				
Client ID:		Run ID: **WetChem_HS_416076**		SeqNo: **6825017**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS	Sample ID: **LCS-R416076**			Units: **mg/L**		Analysis Date: **29-Aug-2022 14:50**				
Client ID:		Run ID: **WetChem_HS_416076**		SeqNo: **6825016**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.867	0.20	10	0	98.7	80 - 120				

MS	Sample ID: **HS22081066-01MS**			Units: **mg/L**		Analysis Date: **29-Aug-2022 14:50**				
Client ID:		Run ID: **WetChem_HS_416076**		SeqNo: **6825019**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.56	0.20	10	0.687	98.7	80 - 120				

MSD	Sample ID: **HS22081066-01MSD**			Units: **mg/L**		Analysis Date: **29-Aug-2022 14:50**				
Client ID:		Run ID: **WetChem_HS_416076**		SeqNo: **6825018**		PrepDate:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.66	0.20	10	0.687	99.7	80 - 120	10.56	0.99	20	

The following samples were analyzed in this batch: HS22081350-01

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081350

QC BATCH REPORT

Batch ID: R416335 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-08312022** Units: **mg/L** Analysis Date: **01-Sep-2022 02:41**
Client ID: Run ID: **TOC_04_416335** SeqNo: **6830427** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-08312022** Units: **mg/L** Analysis Date: **01-Sep-2022 02:54**
Client ID: Run ID: **TOC_04_416335** SeqNo: **6830428** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.219	1.00	10	0	92.2	85 - 115				

LCSD Sample ID: **LCSD-08312022** Units: **mg/L** Analysis Date: **01-Sep-2022 03:07**
Client ID: Run ID: **TOC_04_416335** SeqNo: **6830429** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.339	1.00	10	0	93.4	85 - 115	9.219	1.29	20	

MS Sample ID: **HS22080966-01MS** Units: **mg/L** Analysis Date: **01-Sep-2022 03:30**
Client ID: Run ID: **TOC_04_416335** SeqNo: **6830431** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.34	1.00	10	3.965	93.8	80 - 120				

The following samples were analyzed in this batch: HS22081350-01

ALS Houston, US Date: 01-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22081350**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 01-Sep-22

Sample Receipt Checklist

Work Order ID: HS22081350 **Date/Time Received:** **25-Aug-2022 09:30**

Client Name: Bhate Environmental **Received by:** **Pablo Marinez**

Completed By:	/S/ Nilesh D. Ranchod	25-Aug-2022 11:05	**Reviewed by:**	/S/ Ragen Giga	29-Aug-2022 12:09
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **WATER** Carrier name: **FedEx Priority Overnight**

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:CLIENT
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):	1.9°C/1.7°C UC/C	IR 31
Cooler(s)/Kit(s):	47764	
Date/Time sample(s) sent to storage:	8/25/22 11:15	

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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Prepared By: Scott Beesinger

P.O. Number

HS22081350

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_082422	Water	08/24/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_082422	Water	08/24/22 / 13:00		1			X		NONE	
LH18/24–SP650_082422_AIX	Water	08/24/22 / 13:00		1				X	NONE	
LH18/24-SP650_082422_BIX	Water	08/24/22 / 13:00		1				X	NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
	08/24/22	13:30									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

47764

(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

47764

CUSTODY SEAL

Date: 8/23/22 Time: 1330
Name: Justin Berenger
Company: Battelle

Seal Broken By:
Date: 08/25/22

47764

Must Deliver Next Business Day
Time and Tempature Sensitive!

47764

ORIGIN ID:SGRA (903) 930-0133
SCOTT BEESINGER
APTIM ENVIROMENTAL & INFASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 28JAN21
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3408
DIMS: 19x16x13 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-18-8076391-DW

RMA:

FedEx Express

0473 0839 9407

PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

4730674 24Aug2022 CGGA 56067/F390/0088

August 31, 2022 Service Request No:E2200844

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22081350

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2022
For your reference, these analyses have been assigned our service request number **E2200844.**

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 Environmental – US	**Service Request No.:**	E2200844
Project:	HS22081350	**Date Received:**	08/29/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 08/29/22.

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:

EQ2200373-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200844
Project: HS22081350

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200844-001	LH18/24-SP650_082422_AIX	8/24/2022	1300
E2200844-002	LH18/24-SP650_082422_BIX	8/24/2022	1300

Service Request Summary

Folder #: **E2200844**
Client Name: ALS Environmental - US
Project Name: HS22081350
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081350
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200844-001	LH18/24-SP650_082422_AIX	Water	08/24/22 1300	**IV**
E2200844-002	LH18/24-SP650_082422_BIX	Water	08/24/22 1300	**IV**

Service Request Summary

Folder #: **E2200844**
Client Name: ALS Environmental - US
Project Name: HS22081350
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
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Phone Number: 281-575-2190
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Project Chemist: Corey Grandits
Originating Lab: HOUSTON
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Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081350
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	2	iv dUE 9/9

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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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:** 19583

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081350
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22081350-02**	**LH18/24-SP650_082422_AIX**	**Water**	**24 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			01 Sep 2022
2.	**HS22081350-03**	**LH18/24-SP650_082422_BIX**	**Water**	**24 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			01 Sep 2022

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: 8/25/22 11:10

Received By: _____ Date/Time: 8/25/22 1110

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID 1291

Date/Time Received: 8/29/22 Initials: CG Date/Time Logged in: 8/29/22 Initials CG

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 If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

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		8/29/22	1110	CG	3.0°	☒
						☐
						☐
						☐

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#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200824-001	MW3_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200824-002	18CPTMW22SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200824-003	MW20_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200824-004	18CPTMW22DW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2200824-005	18CPTMW22R_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2200824-006	18CPTMW26SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2200824-007	18CPTMW07_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2200824-008	18CPTMW24_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2200828-001	18CPTMW14_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2200828-002	18CPTMW12SW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2200828-003	18CPTMW12SW_081922_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2200828-004	18CPTMW12DW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2200828-005	MW7_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2200828-006	18CPTMW16_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2200844-001	LH18/24-SP650_082422_AIX	.01	6850/ClO4 DOD			Water	10mL	
16	E2200844-002	LH18/24-SP650_082422_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2200845-001	LH18/24-SP650_082422	.01	6850/ClO4 DOD			Water	10mL	
18	E2200846-001	LH18/24-SP140_082422	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2200373-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200373-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200373-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200373-02 1.00µL EQ2200373-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200824-001	100.00µL	E2200824-002	100.00µL	E2200824-003	100.00µL	E2200824-004	100.00µL	E2200824-005	100.00µL	E2200824-006	100.00µL
E2200824-007	100.00µL	E2200824-008	100.00µL	E2200828-001	100.00µL	E2200828-002	100.00µL	E2200828-003	100.00µL	E2200828-004	100.00µL
E2200828-005	100.00µL	E2200828-006	100.00µL	E2200844-001	100.00µL	E2200844-002	100.00µL	E2200845-001	100.00µL	E2200846-001	100.00µL
EQ2200373-01	100.00µL	EQ2200373-02	100.00µL	EQ2200373-03	100.00µL						

Preparation Information Benchsheet

Prep Run#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/26/22 14:00
Finished: 8/26/22 14:35
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/26/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ 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:**	E2200844
Project:	HS22081350	**Date Collected:**	8/24/22 1300
Sample Matrix:	Water	**Date Received:**	8/25/22
Sample Name:	LH18/24-SP650_082422_AIX	**Units:**	µg/L
Lab Code:	E2200844-001	**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	**0.626**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:53	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200844
Project:	HS22081350	**Date Collected:**	8/24/22 1300
Sample Matrix:	Water	**Date Received:**	8/25/22
Sample Name:	LH18/24-SP650_082422_BIX	**Units:**	µg/L
Lab Code:	E2200844-002	**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	**11.4**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 11:01	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200844
Project:	HS22081350	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200373-01	**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	8/26/22	8/31/22 10:28	405336	775985	

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: HS22081350
Sample Matrix: Water

Service Request: E2200844
Date Analyzed: 8/31/22

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: 405336

	Lab Control Sample EQ2200373-02			Duplicate Lab Control Sample EQ2200373-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0945	0.100	95	0.103	0.100	103	84 - 119	9	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:**	E2200844
Project:	HS22081350	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-02	**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	**0.0945**	J	0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:36	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200844
Project:	HS22081350	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-03	**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	**0.103**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:44	405336	775985	

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September 06, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22081352**

Laboratory Results for: **Groundwater Treatment Plant Quarterly Influent Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Aug 25, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS22081352

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081352-01	LH18/24-SP140_082422	Water		24-Aug-2022 13:00	25-Aug-2022 09:30	☐
HS22081352-02	Trip Blank	Water		24-Aug-2022 00:00	25-Aug-2022 09:30	☐

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS22081352

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Work Order Comments

• The analyses for Mercury was subcontracted to ALS Environmental in Holland, MI. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 183056

Sample ID: LCSD-183056

• LCSD RPD was above the upper control limit. The individual recoveries were in control. Surrogate (2-Fluorobiphenyl)

Sample ID: LH18/24-SP140_082422 (HS22081352-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R415980

Sample ID: HS22081409-03MS

• MS and MSD are for an unrelated sample

Sample ID: HS22081148-19MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020A

Batch ID: 182909

Sample ID: HS22081191-02MS

• MS and MSD are for an unrelated sample

Sample ID: HS22081191-02PDS

• PDS is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R416314

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

WetChemistry by Method E1664A

Batch ID: R416165

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Influent Samples
Work Order: HS22081352

WetChemistry by Method E410.4

Batch ID: R416096

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS22081352
Sample ID: LH18/24-SP140_082422 Lab ID:HS22081352-01
Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,1-Dichloroethane	**2.3**	J	**1.0**	**2.5**	**5.0**	**ug/L**	5	26-Aug-2022 15:00
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2-Dibromo-3-chloropropane	5.0	U	1.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,2-Dichloroethane	**11**		**1.0**	**2.5**	**5.0**	**ug/L**	5	26-Aug-2022 15:00
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
2-Butanone	5.0	U	2.5	5.0	10	ug/L	5	26-Aug-2022 15:00
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
2-Hexanone	10	U	5.0	10	10	ug/L	5	26-Aug-2022 15:00
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
4-Methyl-2-pentanone	10	U	3.5	10	10	ug/L	5	26-Aug-2022 15:00
Acetone	10	U	2.0	10	10	ug/L	5	26-Aug-2022 15:00
Benzene	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Bromobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Bromochloromethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Bromodichloromethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Bromoform	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Bromomethane	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Carbon disulfide	10	U	3.0	10	10	ug/L	5	26-Aug-2022 15:00
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Chlorobenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Chloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Chloroform	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS22081352
Sample ID: LH18/24-SP140_082422 Lab ID:HS22081352-01
Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
cis-1,2-Dichloroethene	**820**		**1.0**	**2.5**	**5.0**	**ug/L**	5	26-Aug-2022 15:00
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Dibromochloromethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Dibromomethane	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Ethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Isopropylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
m,p-Xylene	5.0	U	2.5	5.0	10	ug/L	5	26-Aug-2022 15:00
Methylene chloride	10	U	2.0	10	10	ug/L	5	26-Aug-2022 15:00
n-Butylbenzene	5.0	U	2.0	5.0	5.0	ug/L	5	26-Aug-2022 15:00
n-Propylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Naphthalene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
o-Xylene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Styrene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Tetrachloroethene	**7.0**		**1.5**	**5.0**	**5.0**	**ug/L**	5	26-Aug-2022 15:00
Toluene	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
trans-1,2-Dichloroethene	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	ug/L	5	26-Aug-2022 15:00
Trichloroethene	**1,100**		**10**	**25**	**50**	**ug/L**	50	26-Aug-2022 16:46
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	26-Aug-2022 15:00
Vinyl chloride	**55**		**1.0**	**2.5**	**5.0**	**ug/L**	5	26-Aug-2022 15:00
Surr: 1,2-Dichloroethane-d4	*94.0*			**0**	*81-118*	*%REC*	*5*	*26-Aug-2022 15:00*
Surr: 1,2-Dichloroethane-d4	*95.9*			**0**	*81-118*	*%REC*	*50*	*26-Aug-2022 16:46*
Surr: 4-Bromofluorobenzene	*93.4*			**0**	*85-114*	*%REC*	*5*	*26-Aug-2022 15:00*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*50*	*26-Aug-2022 16:46*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*5*	*26-Aug-2022 15:00*
Surr: Dibromofluoromethane	*96.8*			**0**	*80-119*	*%REC*	*50*	*26-Aug-2022 16:46*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*50*	*26-Aug-2022 16:46*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*26-Aug-2022 15:00*
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 31-Aug-2022		Analyst: MBG
1,4-Dioxane	**13**		**1.0**	**1.0**	**1.0**	**ug/L**	100	06-Sep-2022 13:45
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 13:45*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 13:45*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 13:45*

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder:HS22081352
Sample ID: LH18/24-SP140_082422
Lab ID:HS22081352-01
Collection Date: 24-Aug-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 26-Aug-2022		Analyst: YP
Aluminum	**0.0639**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	02-Sep-2022 12:32
Antimony	**0.00183**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Arsenic	**0.00122**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Barium	**0.305**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	02-Sep-2022 12:32
Cadmium	**0.000298**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	02-Sep-2022 12:32
Calcium	**27.0**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	02-Sep-2022 12:32
Chromium	**0.00214**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Cobalt	**0.00207**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Iron	**0.227**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:32
Lead	**0.000674**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Magnesium	**20.7**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:32
Manganese	**0.187**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Nickel	**0.00846**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Potassium	**1.54**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:32
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	02-Sep-2022 12:32
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	02-Sep-2022 12:32
Sodium	**232**		**0.280**	**1.00**	**4.00**	**mg/L**	20	02-Sep-2022 14:27
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	02-Sep-2022 12:32
Vanadium	**0.00100**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
Zinc	**0.302**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:32
OIL & GREASE (HEM) BY E1664A		**Method:E1664A**						Analyst: KAH
Oil and Grease	1.00	U	0.610	1.00	2.00	mg/L	1	30-Aug-2022 14:30
CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993		**Method:E410.4**						Analyst: TH
Chemical Oxygen Demand	**13.0**	J	**5.00**	**15.0**	**15.0**	**mg/L**	1	29-Aug-2022 16:00
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**325**		**2.00**	**5.00**	**5.00**	**mg/L**	10	31-Aug-2022 21:33
Sulfate	**32.3**		**0.200**	**0.500**	**0.500**	**mg/L**	1	31-Aug-2022 21:28
SUBCONTRACT ANALYSIS - MERCURY LOW		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	02-Sep-2022 13:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Aug-2022 18:50

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS22081352
Sample ID: Trip Blank Lab ID:HS22081352-02
Collection Date: 24-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 12:54
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	26-Aug-2022 12:54
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	26-Aug-2022 12:54
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 12:54
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	26-Aug-2022 12:54
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Influent Samples WorkOrder:HS22081352
Sample ID: Trip Blank Lab ID:HS22081352-02
Collection Date: 24-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 12:54
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 12:54
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 12:54
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 12:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 12:54
Surr: 1,2-Dichloroethane-d4	*94.3*			**0**	*81-118*	*%REC*	*1*	*26-Aug-2022 12:54*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*85-114*	*%REC*	*1*	*26-Aug-2022 12:54*
Surr: Dibromofluoromethane	*94.9*			**0**	*80-119*	*%REC*	*1*	*26-Aug-2022 12:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*26-Aug-2022 12:54*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.

Project: Groundwater Treatment Plant Quarterly Influent Samples

WorkOrder: HS22081352

Batch ID: 182909 **Start Date:** 26 Aug 2022 08:30 **End Date:** 26 Aug 2022 12:30

Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22081352-01		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 183056 **Start Date:** 31 Aug 2022 07:00 **End Date:** 31 Aug 2022 10:30

Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22081352-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 182909 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00		26 Aug 2022 08:30	02 Sep 2022 14:27	20
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00		26 Aug 2022 08:30	02 Sep 2022 12:32	1
Batch ID: 183056 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00		31 Aug 2022 07:39	06 Sep 2022 13:45	100
Batch ID: R415980 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			26 Aug 2022 16:46	50
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			26 Aug 2022 15:00	5
HS22081352-02	Trip Blank	24 Aug 2022 00:00			26 Aug 2022 12:54	1
Batch ID: R416096 (0)	**Test Name :** CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			29 Aug 2022 16:00	1
Batch ID: R416165 (0)	**Test Name :** OIL & GREASE (HEM) BY E1664A				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			30 Aug 2022 14:30	1
Batch ID: R416294 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			31 Aug 2022 18:50	1
Batch ID: R416314 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			31 Aug 2022 21:33	10
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			31 Aug 2022 21:28	1
Batch ID: R416444 (0)	**Test Name :** SUBCONTRACT ANALYSIS - MERCURY LOW				**Matrix:** Water	
HS22081352-01	LH18/24-SP140_082422	24 Aug 2022 13:00			02 Sep 2022 13:50	1

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-182909** Units: **mg/L** Analysis Date: **02-Sep-2022 11:44**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832441** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.004113	0.0100								J
Antimony	0.00125	0.00500								U
Arsenic	0.00125	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.000449	0.00500								J
Cobalt	0.000500	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00125	0.00500								U
Magnesium	0.01445	0.200								J
Manganese	0.00250	0.00500								U
Nickel	0.00125	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00125	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-182909** Units: **mg/L** Analysis Date: **02-Sep-2022 11:46**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832442** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1023	0.0100	0.1	0	102	84 - 117				
Antimony	0.05029	0.00500	0.05	0	101	85 - 117				
Arsenic	0.05488	0.00500	0.05	0	110	84 - 116				
Barium	0.05272	0.00500	0.05	0	105	86 - 114				
Beryllium	0.05173	0.00200	0.05	0	103	83 - 121				
Cadmium	0.05446	0.00200	0.05	0	109	87 - 115				
Calcium	5.051	0.500	5	0	101	87 - 118				
Chromium	0.05143	0.00500	0.05	0	103	85 - 116				
Cobalt	0.05056	0.00500	0.05	0	101	86 - 115				
Iron	5.302	0.200	5	0	106	87 - 118				
Lead	0.04886	0.00500	0.05	0	97.7	88 - 115				
Magnesium	5.244	0.200	5	0	105	83 - 118				
Manganese	0.05363	0.00500	0.05	0	107	87 - 115				
Nickel	0.05379	0.00500	0.05	0	108	85 - 117				
Potassium	5.351	0.200	5	0	107	87 - 115				
Selenium	0.05541	0.00500	0.05	0	111	80 - 120				
Silver	0.05181	0.00500	0.05	0	104	85 - 116				
Sodium	5.253	0.200	5	0	105	85 - 117				
Thallium	0.05198	0.00200	0.05	0	104	82 - 116				
Vanadium	0.05344	0.00500	0.05	0	107	86 - 115				
Zinc	0.05562	0.00500	0.05	0	111	83 - 119				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS22081191-02MS** Units: **mg/L** Analysis Date: **02-Sep-2022 12:22**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832458** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	29.16	0.0100	0.1	31.03	-1870	84 - 117				SEO
Antimony	0.04768	0.00500	0.05	0.000089	95.2	85 - 117				
Arsenic	0.05584	0.00500	0.05	0.003586	105	84 - 116				
Barium	0.06335	0.00500	0.05	0.01351	99.7	86 - 114				
Beryllium	0.06476	0.00200	0.05	0.01298	104	83 - 121				
Cadmium	0.06112	0.00200	0.05	0.01168	98.9	87 - 115				
Calcium	509.5	0.500	5	537.3	-555	87 - 118				SEO
Chromium	0.08276	0.00500	0.05	0.03548	94.6	85 - 116				
Cobalt	0.2578	0.00500	0.05	0.2188	78.0	86 - 115				SO
Iron	5.365	0.200	5	0.3653	100.0	87 - 118				
Lead	0.05081	0.00500	0.05	0.00311	95.4	88 - 115				
Magnesium	256.2	0.200	5	264.1	-158	83 - 118				SEO
Manganese	3.805	0.00500	0.05	3.936	-263	87 - 115				SEO
Nickel	1.135	0.00500	0.05	1.136	-3.53	85 - 117				SO
Potassium	14.21	0.200	5	9.699	90.2	87 - 115				
Selenium	0.1279	0.00500	0.05	0.07832	99.1	80 - 120				
Silver	0.04498	0.00500	0.05	0.000095	89.8	85 - 116				
Sodium	202.7	0.200	5	207.3	-92.0	85 - 117				SEO
Thallium	0.05255	0.00200	0.05	0.000436	104	82 - 116				
Vanadium	0.05309	0.00500	0.05	0.000453	105	86 - 115				
Zinc	0.7351	0.00500	0.05	0.7267	16.8	83 - 119				SO

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS22081191-02MSD** Units: **mg/L** Analysis Date: **02-Sep-2022 12:24**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832459** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	29.16	0.0100	0.1	31.03	-1870	84 - 117	29.16	0.00172	20	SEO
Antimony	0.0484	0.00500	0.05	0.000089	96.6	85 - 117	0.04768	1.5	20	
Arsenic	0.05753	0.00500	0.05	0.003586	108	84 - 116	0.05584	2.99	20	
Barium	0.06466	0.00500	0.05	0.01351	102	86 - 114	0.06335	2.05	20	
Beryllium	0.06879	0.00200	0.05	0.01298	112	83 - 121	0.06476	6.03	20	
Cadmium	0.06235	0.00200	0.05	0.01168	101	87 - 115	0.06112	1.99	20	
Calcium	522	0.500	5	537.3	-306	87 - 118	509.5	2.42	20	SEO
Chromium	0.08472	0.00500	0.05	0.03548	98.5	85 - 116	0.08276	2.34	20	
Cobalt	0.2675	0.00500	0.05	0.2188	97.4	86 - 115	0.2578	3.68	20	O
Iron	5.532	0.200	5	0.3653	103	87 - 118	5.365	3.07	20	
Lead	0.05298	0.00500	0.05	0.00311	99.7	88 - 115	0.05081	4.19	20	
Magnesium	258	0.200	5	264.1	-121	83 - 118	256.2	0.729	20	SEO
Manganese	3.819	0.00500	0.05	3.936	-234	87 - 115	3.805	0.38	20	SEO
Nickel	1.155	0.00500	0.05	1.136	38.0	85 - 117	1.135	1.81	20	SO
Potassium	14.51	0.200	5	9.699	96.3	87 - 115	14.21	2.12	20	
Selenium	0.1261	0.00500	0.05	0.07832	95.5	80 - 120	0.1279	1.41	20	
Silver	0.04619	0.00500	0.05	0.000095	92.2	85 - 116	0.04498	2.66	20	
Sodium	207.8	0.200	5	207.3	8.60	85 - 117	202.7	2.45	20	SEO
Thallium	0.05578	0.00200	0.05	0.000436	111	82 - 116	0.05255	5.96	20	
Vanadium	0.05421	0.00500	0.05	0.000453	108	86 - 115	0.05309	2.09	20	
Zinc	0.7509	0.00500	0.05	0.7267	48.6	83 - 119	0.7351	2.14	20	SO

PDS Sample ID: **HS22081191-02PDS** Units: **mg/L** Analysis Date: **02-Sep-2022 15:47**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6833102** PrepDate: **26-Aug-2022** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	39.55	1.00	10	31.15	84.0	80 - 120				
Calcium	1478	50.0	1000	529.2	94.9	80 - 120				
Magnesium	1311	20.0	1000	290	102	80 - 120				
Manganese	14.01	0.500	10	3.942	101	80 - 120				
Sodium	1282	20.0	1000	231.3	105	80 - 120				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22081191-02PDS** Units: **mg/L** Analysis Date: **02-Sep-2022 12:26**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832460** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1956	0.00500	0.2	0	97.8	80 - 120				
Arsenic	0.2064	0.00500	0.2	0.003586	101	80 - 120				
Barium	0.2102	0.00500	0.2	0.01351	98.3	80 - 120				
Cadmium	0.2036	0.00200	0.2	0.01168	95.9	80 - 120				
Chromium	0.2366	0.00500	0.2	0.03548	101	80 - 120				
Cobalt	0.3935	0.00500	0.2	0.2188	87.3	80 - 120				
Iron	19.73	0.200	20	0.3653	96.8	80 - 120				
Lead	0.2103	0.00500	0.2	0.00311	104	80 - 120				
Nickel	1.239	0.00500	0.2	1.136	51.4	80 - 120				SO
Potassium	28.14	0.200	20	9.699	92.2	80 - 120				
Selenium	0.2701	0.00500	0.2	0.07832	95.9	80 - 120				
Silver	0.1883	0.00500	0.2	0	94.1	80 - 120				
Thallium	0.2034	0.00200	0.2	0.000436	101	80 - 120				
Vanadium	0.2354	0.00500	0.2	0	118	80 - 120				
Zinc	0.9274	0.00500	0.2	0.7267	100	80 - 120				

SD Sample ID: **HS22081191-02SD** Units: **mg/L** Analysis Date: **02-Sep-2022 15:44**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6833101** PrepDate: **26-Aug-2022** DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	29.92	5.00					31.15	3.96	10	
Calcium	542	250					529.2	2.41	10	
Magnesium	266.3	100					290	8.16	10	
Manganese	3.904	2.50					3.942	0.957	10	
Sodium	236.3	100					231.3	2.2	10	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22081191-02SD** Units: **mg/L** Analysis Date: **02-Sep-2022 12:20**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832457** PrepDate: **26-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	0.00625	0.0250					0.000089	0	10	U
Arsenic	0.003563	0.0250					0.003586	0	10	J
Barium	0.01356	0.0250					0.01351	0	10	J
Beryllium	0.0129	0.0100					0.01298	0.624	10	
Cadmium	0.01218	0.0100					0.01168	4.26	10	
Chromium	0.03627	0.0250					0.03548	2.23	10	
Cobalt	0.2022	0.0250					0.2188	7.58	10	
Iron	0.3378	1.00					0.3653	0	10	J
Lead	0.003058	0.0250					0.00311	0	10	J
Nickel	1.043	0.0250					1.136	8.22	10	
Potassium	9.93	1.00					9.699	2.38	10	
Selenium	0.07401	0.0250					0.07832	5.5	10	
Silver	0.00250	0.0250					0.000095	0	10	U
Thallium	0.00250	0.0100					0.000436	0	10	U
Vanadium	0.00625	0.0250					0.000453	0	10	U
Zinc	0.7521	0.0250					0.7267	3.5	10	

The following samples were analyzed in this batch: HS22081352-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: 183056 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:05**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835581** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.05561*	*0*	*0.08*	*0*	*69.5*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04848*	*0*	*0.08*	*0*	*60.6*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07154*	*0*	*0.08*	*0*	*89.4*	*40 - 140*				

LCS Sample ID: **LCS-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:23**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835582** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1025	0.010	0.08	0	128	40 - 140				
Surr: 2-Fluorobiphenyl	*0.06029*	*0*	*0.08*	*0*	*75.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04743*	*0*	*0.08*	*0*	*59.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05728*	*0*	*0.08*	*0*	*71.6*	*40 - 140*				

LCSD Sample ID: **LCSD-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:41**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835583** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.09708	0.010	0.08	0	121	40 - 140	0.1025	5.46	20	
Surr: 2-Fluorobiphenyl	*0.07566*	*0*	*0.08*	*0*	*94.6*	*40 - 140*	*0.06029*	*22.6*	*20*	R
Surr: 4-Terphenyl-d14	*0.04514*	*0*	*0.08*	*0*	*56.4*	*40 - 140*	*0.04743*	*4.95*	*20*	
Surr: Nitrobenzene-d5	*0.0555*	*0*	*0.08*	*0*	*69.4*	*40 - 140*	*0.05728*	*3.17*	*20*	

The following samples were analyzed in this batch: HS22081352-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 12:33**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 12:33**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*46.97*	*1.0*	*50*	*0*	*93.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.46*	*1.0*	*50*	*0*	*96.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.33*	*1.0*	*50*	*0*	*94.7*	*80 - 119*				
Surr: Toluene-d8	*53.91*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 11:51**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.42	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	20.85	1.0	20	0	104	74 - 131				
1,1,2,2-Tetrachloroethane	19.34	1.0	20	0	96.7	71 - 121				
1,1,2-Trichloroethane	19.99	1.0	20	0	100.0	80 - 119				
1,1-Dichloroethane	20.73	1.0	20	0	104	77 - 125				
1,1-Dichloroethene	19.48	1.0	20	0	97.4	71 - 131				
1,1-Dichloropropene	20.85	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	19.01	1.0	20	0	95.0	69 - 129				
1,2,3-Trichloropropane	20.45	1.0	20	0	102	73 - 122				
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	69 - 130				
1,2,4-Trimethylbenzene	21.06	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	17.79	1.0	20	0	89.0	62 - 128				
1,2-Dibromoethane	19.69	1.0	20	0	98.5	77 - 121				
1,2-Dichlorobenzene	19.87	1.0	20	0	99.3	80 - 119				
1,2-Dichloroethane	20.28	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	20.39	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	21.07	1.0	20	0	105	75 - 124				
1,3-Dichlorobenzene	20.57	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	19.55	1.0	20	0	97.7	80 - 119				
1,4-Dichlorobenzene	20.41	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	21.38	1.0	20	0	107	60 - 139				
2-Butanone	37.88	2.0	40	0	94.7	56 - 143				
2-Chlorotoluene	20.1	1.0	20	0	101	79 - 122				
2-Hexanone	38.04	2.0	40	0	95.1	57 - 139				
4-Chlorotoluene	20.7	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	21.72	1.0	20	0	109	77 - 127				
4-Methyl-2-pentanone	38.68	2.0	40	0	96.7	67 - 130				
Acetone	41.56	2.0	40	0	104	39 - 160				
Benzene	20.1	1.0	20	0	100	79 - 120				
Bromobenzene	20.41	1.0	20	0	102	80 - 120				
Bromochloromethane	19.58	1.0	20	0	97.9	78 - 123				
Bromodichloromethane	20.52	1.0	20	0	103	79 - 125				
Bromoform	19.07	1.0	20	0	95.3	66 - 130				
Bromomethane	20.94	1.0	20	0	105	53 - 141				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 11:51**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.3	2.0	40	0	106	64 - 133				
Carbon tetrachloride	19.97	1.0	20	0	99.9	72 - 136				
Chlorobenzene	20.8	1.0	20	0	104	82 - 118				
Chloroethane	19.29	1.0	20	0	96.5	60 - 138				
Chloroform	20.78	1.0	20	0	104	79 - 124				
Chloromethane	21.89	1.0	20	0	109	50 - 139				
cis-1,2-Dichloroethene	20.99	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	20.48	1.0	20	0	102	75 - 124				
Dibromochloromethane	20.01	1.0	20	0	100	74 - 126				
Dibromomethane	19.94	1.0	20	0	99.7	79 - 123				
Dichlorodifluoromethane	20.59	1.0	20	0	103	32 - 152				
Ethylbenzene	21.16	1.0	20	0	106	79 - 121				
Hexachlorobutadiene	20.31	1.0	20	0	102	66 - 134				
Isopropylbenzene	21.26	1.0	20	0	106	72 - 131				
m,p-Xylene	42.76	2.0	40	0	107	80 - 121				
Methylene chloride	21.59	2.0	20	0	108	74 - 124				
Naphthalene	18.26	1.0	20	0	91.3	61 - 128				
n-Butylbenzene	22.11	1.0	20	0	111	75 - 128				
n-Propylbenzene	21.91	1.0	20	0	110	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	21.53	1.0	20	0	108	77 - 126				
Styrene	20.58	1.0	20	0	103	78 - 123				
tert-Butylbenzene	21.38	1.0	20	0	107	78 - 124				
Tetrachloroethene	20.28	1.0	20	0	101	74 - 129				
Toluene	20.44	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	20.61	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.33	1.0	20	0	102	73 - 127				
Trichloroethene	20.42	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.6	1.0	20	0	98.0	65 - 141				
Vinyl chloride	19.38	1.0	20	0	96.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.29*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.24*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*53.38*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*51.17*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081409-03MS** Units: **ug/L** Analysis Date: **26-Aug-2022 15:22**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.87	1.0	20	0	99.3	78 - 124				
1,1,1-Trichloroethane	18.9	1.0	20	0	94.5	74 - 131				
1,1,2,2-Tetrachloroethane	19.34	1.0	20	0	96.7	71 - 121				
1,1,2-Trichloroethane	18.74	1.0	20	0	93.7	80 - 119				
1,1-Dichloroethane	17.95	1.0	20	0	89.7	77 - 125				
1,1-Dichloroethene	15.66	1.0	20	0	78.3	71 - 131				
1,1-Dichloropropene	19.98	1.0	20	0	99.9	78 - 125				
1,2,3-Trichlorobenzene	15.04	1.0	20	0	75.2	69 - 129				
1,2,3-Trichloropropane	18.89	1.0	20	0	94.5	73 - 122				
1,2,4-Trichlorobenzene	17.52	1.0	20	0	87.6	69 - 130				
1,2,4-Trimethylbenzene	21.12	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.74	1.0	20	0	93.7	62 - 128				
1,2-Dibromoethane	18.44	1.0	20	0	92.2	77 - 121				
1,2-Dichlorobenzene	20.07	1.0	20	0	100	80 - 119				
1,2-Dichloroethane	18.44	1.0	20	0	92.2	73 - 128				
1,2-Dichloropropane	18.35	1.0	20	0	91.7	78 - 122				
1,3,5-Trimethylbenzene	21.22	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.46	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	18.84	1.0	20	0	94.2	80 - 119				
1,4-Dichlorobenzene	20.73	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	18.71	1.0	20	0	93.6	60 - 139				
2-Butanone	28.59	2.0	40	0	71.5	56 - 143				
2-Chlorotoluene	20.49	1.0	20	0	102	79 - 122				
2-Hexanone	37.99	2.0	40	0	95.0	57 - 139				
4-Chlorotoluene	20.72	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	22.23	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	39.45	2.0	40	0	98.6	67 - 130				
Acetone	25.28	2.0	40	0	63.2	39 - 160				
Benzene	18.44	1.0	20	0	92.2	79 - 120				
Bromobenzene	20.22	1.0	20	0	101	80 - 120				
Bromochloromethane	16.34	1.0	20	0	81.7	78 - 123				
Bromodichloromethane	18.72	1.0	20	0	93.6	79 - 125				
Bromoform	18.27	1.0	20	0	91.4	66 - 130				
Bromomethane	12.22	1.0	20	0	61.1	53 - 141				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081409-03MS** Units: **ug/L** Analysis Date: **26-Aug-2022 15:22**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	28.82	2.0	40	0	72.1	64 - 133				
Carbon tetrachloride	18.87	1.0	20	0	94.3	72 - 136				
Chlorobenzene	20.22	1.0	20	0	101	82 - 118				
Chloroethane	13.34	1.0	20	0	66.7	60 - 138				
Chloroform	18.13	1.0	20	0	90.6	79 - 124				
Chloromethane	7.448	1.0	20	0	37.2	50 - 139				S
cis-1,2-Dichloroethene	18.25	1.0	20	0	91.3	78 - 123				
cis-1,3-Dichloropropene	18.62	1.0	20	0	93.1	75 - 124				
Dibromochloromethane	19.05	1.0	20	0	95.2	74 - 126				
Dibromomethane	18.31	1.0	20	0	91.6	79 - 123				
Dichlorodifluoromethane	2.494	1.0	20	0	12.5	32 - 152				S
Ethylbenzene	20.37	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	20.9	1.0	20	0	105	66 - 134				
Isopropylbenzene	21.41	1.0	20	0	107	72 - 131				
m,p-Xylene	41.31	2.0	40	0	103	80 - 121				
Methylene chloride	16.82	2.0	20	0	84.1	74 - 124				
Naphthalene	13.39	1.0	20	0	67.0	61 - 128				
n-Butylbenzene	22.53	1.0	20	0	113	75 - 128				
n-Propylbenzene	22.27	1.0	20	0	111	76 - 126				
o-Xylene	20.01	1.0	20	0	100	78 - 122				
sec-Butylbenzene	22.13	1.0	20	0	111	77 - 126				
Styrene	20.01	1.0	20	0	100	78 - 123				
tert-Butylbenzene	21.89	1.0	20	0	109	78 - 124				
Tetrachloroethene	20.01	1.0	20	0	100	74 - 129				
Toluene	19.66	1.0	20	0	98.3	80 - 121				
trans-1,2-Dichloroethene	17.32	1.0	20	0	86.6	75 - 124				
trans-1,3-Dichloropropene	18.9	1.0	20	0	94.5	73 - 127				
Trichloroethene	19.36	1.0	20	0	96.8	79 - 123				
Trichlorofluoromethane	14.93	1.0	20	0	74.7	65 - 141				
Vinyl chloride	9.461	1.0	20	0	47.3	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*48.92*	*1.0*	*50*	*0*	*97.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.78*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*49.15*	*1.0*	*50*	*0*	*98.3*	*80 - 119*				
Surr: Toluene-d8	*52.55*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081148-19MS** Units: **ug/L** Analysis Date: **26-Aug-2022 16:04**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822664** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.24	1.0	20	0	96.2	78 - 124				
1,1,1-Trichloroethane	18.43	1.0	20	0	92.1	74 - 131				
1,1,2,2-Tetrachloroethane	18.76	1.0	20	0	93.8	71 - 121				
1,1,2-Trichloroethane	18.41	1.0	20	0	92.0	80 - 119				
1,1-Dichloroethane	16.8	1.0	20	0	84.0	77 - 125				
1,1-Dichloroethene	15.21	1.0	20	0	76.0	71 - 131				
1,1-Dichloropropene	18.98	1.0	20	0	94.9	78 - 125				
1,2,3-Trichlorobenzene	20.89	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	18.45	1.0	20	0	92.2	73 - 122				
1,2,4-Trichlorobenzene	21.33	1.0	20	0	107	69 - 130				
1,2,4-Trimethylbenzene	21.11	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.41	1.0	20	0	92.0	62 - 128				
1,2-Dibromoethane	18.11	1.0	20	0	90.5	77 - 121				
1,2-Dichlorobenzene	20.51	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	17.42	1.0	20	0	87.1	73 - 128				
1,2-Dichloropropane	17.72	1.0	20	0	88.6	78 - 122				
1,3,5-Trimethylbenzene	20.85	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	18.33	1.0	20	0	91.7	80 - 119				
1,4-Dichlorobenzene	20.11	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	17.81	1.0	20	0	89.0	60 - 139				
2-Butanone	29.9	2.0	40	0	74.7	56 - 143				
2-Chlorotoluene	19.75	1.0	20	0	98.7	79 - 122				
2-Hexanone	38.67	2.0	40	0	96.7	57 - 139				
4-Chlorotoluene	20.15	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	22.11	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	39.22	2.0	40	0	98.0	67 - 130				
Acetone	23.51	2.0	40	0	58.8	39 - 160				
Benzene	17.65	1.0	20	0	88.3	79 - 120				
Bromobenzene	19.61	1.0	20	0	98.1	80 - 120				
Bromochloromethane	15.94	1.0	20	0	79.7	78 - 123				
Bromodichloromethane	18.2	1.0	20	0	91.0	79 - 125				
Bromoform	17.76	1.0	20	0	88.8	66 - 130				
Bromomethane	10.02	1.0	20	0	50.1	53 - 141				S

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081148-19MS** Units: **ug/L** Analysis Date: **26-Aug-2022 16:04**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822664** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	28.28	2.0	40	0	70.7	64 - 133				
Carbon tetrachloride	18.16	1.0	20	0	90.8	72 - 136				
Chlorobenzene	19.72	1.0	20	0	98.6	82 - 118				
Chloroethane	11.86	1.0	20	0	59.3	60 - 138				S
Chloroform	17.27	1.0	20	0	86.4	79 - 124				
Chloromethane	7.451	1.0	20	0	37.3	50 - 139				S
cis-1,2-Dichloroethene	17.49	1.0	20	0	87.5	78 - 123				
cis-1,3-Dichloropropene	18.05	1.0	20	0	90.2	75 - 124				
Dibromochloromethane	18.48	1.0	20	0	92.4	74 - 126				
Dibromomethane	17.29	1.0	20	0	86.4	79 - 123				
Dichlorodifluoromethane	2.44	1.0	20	0	12.2	32 - 152				S
Ethylbenzene	20.25	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	22.03	1.0	20	0	110	66 - 134				
Isopropylbenzene	21.37	1.0	20	0	107	72 - 131				
m,p-Xylene	40.98	2.0	40	0	102	80 - 121				
Methylene chloride	16.07	2.0	20	0	80.3	74 - 124				
Naphthalene	21.26	1.0	20	0	106	61 - 128				
n-Butylbenzene	23.4	1.0	20	0	117	75 - 128				
n-Propylbenzene	21.85	1.0	20	0	109	76 - 126				
o-Xylene	19.92	1.0	20	0	99.6	78 - 122				
sec-Butylbenzene	22.62	1.0	20	0	113	77 - 126				
Styrene	20.12	1.0	20	0	101	78 - 123				
tert-Butylbenzene	21.98	1.0	20	0	110	78 - 124				
Tetrachloroethene	19.44	1.0	20	0	97.2	74 - 129				
Toluene	19.07	1.0	20	0	95.3	80 - 121				
trans-1,2-Dichloroethene	16.56	1.0	20	0	82.8	75 - 124				
trans-1,3-Dichloropropene	17.96	1.0	20	0	89.8	73 - 127				
Trichloroethene	18.18	1.0	20	0	90.9	79 - 123				
Trichlorofluoromethane	14.89	1.0	20	0	74.4	65 - 141				
Vinyl chloride	9.04	1.0	20	0	45.2	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*48.39*	*1.0*	*50*	*0*	*96.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.09*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*48.33*	*1.0*	*50*	*0*	*96.7*	*80 - 119*				
Surr: Toluene-d8	*52.78*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081409-03MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 15:43**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822663** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.15	1.0	20	0	95.7	78 - 124	19.87	3.69	20	
1,1,1-Trichloroethane	17.82	1.0	20	0	89.1	74 - 131	18.9	5.88	20	
1,1,2,2-Tetrachloroethane	19.4	1.0	20	0	97.0	71 - 121	19.34	0.311	20	
1,1,2-Trichloroethane	19.16	1.0	20	0	95.8	80 - 119	18.74	2.2	20	
1,1-Dichloroethane	17.29	1.0	20	0	86.4	77 - 125	17.95	3.72	20	
1,1-Dichloroethene	15.02	1.0	20	0	75.1	71 - 131	15.66	4.2	20	
1,1-Dichloropropene	18.69	1.0	20	0	93.4	78 - 125	19.98	6.67	20	
1,2,3-Trichlorobenzene	19.1	1.0	20	0	95.5	69 - 129	15.04	23.7	20	R
1,2,3-Trichloropropane	19.09	1.0	20	0	95.5	73 - 122	18.89	1.04	20	
1,2,4-Trichlorobenzene	19.68	1.0	20	0	98.4	69 - 130	17.52	11.6	20	
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	76 - 124	21.12	4.28	20	
1,2-Dibromo-3-chloropropane	19.27	1.0	20	0	96.4	62 - 128	18.74	2.79	20	
1,2-Dibromoethane	18.3	1.0	20	0	91.5	77 - 121	18.44	0.765	20	
1,2-Dichlorobenzene	20.2	1.0	20	0	101	80 - 119	20.07	0.645	20	
1,2-Dichloroethane	17.74	1.0	20	0	88.7	73 - 128	18.44	3.91	20	
1,2-Dichloropropane	17.93	1.0	20	0	89.6	78 - 122	18.35	2.31	20	
1,3,5-Trimethylbenzene	20.36	1.0	20	0	102	75 - 124	21.22	4.16	20	
1,3-Dichlorobenzene	20.19	1.0	20	0	101	80 - 119	20.46	1.29	20	
1,3-Dichloropropane	18.72	1.0	20	0	93.6	80 - 119	18.84	0.61	20	
1,4-Dichlorobenzene	19.99	1.0	20	0	99.9	79 - 118	20.73	3.65	20	
2,2-Dichloropropane	17.8	1.0	20	0	89.0	60 - 139	18.71	4.97	20	
2-Butanone	30.44	2.0	40	0	76.1	56 - 143	28.59	6.27	20	
2-Chlorotoluene	19.45	1.0	20	0	97.2	79 - 122	20.49	5.21	20	
2-Hexanone	38.81	2.0	40	0	97.0	57 - 139	37.99	2.14	20	
4-Chlorotoluene	20.16	1.0	20	0	101	78 - 122	20.72	2.73	20	
4-Isopropyltoluene	21.29	1.0	20	0	106	77 - 127	22.23	4.31	20	
4-Methyl-2-pentanone	39.35	2.0	40	0	98.4	67 - 130	39.45	0.24	20	
Acetone	26.31	2.0	40	0	65.8	39 - 160	25.28	3.97	20	
Benzene	17.73	1.0	20	0	88.6	79 - 120	18.44	3.96	20	
Bromobenzene	19.53	1.0	20	0	97.6	80 - 120	20.22	3.49	20	
Bromochloromethane	16.11	1.0	20	0	80.6	78 - 123	16.34	1.42	20	
Bromodichloromethane	18.59	1.0	20	0	92.9	79 - 125	18.72	0.709	20	
Bromoform	18.25	1.0	20	0	91.2	66 - 130	18.27	0.151	20	
Bromomethane	11.16	1.0	20	0	55.8	53 - 141	12.22	9.08	20	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081409-03MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 15:43**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822663** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	27.33	2.0	40	0	68.3	64 - 133	28.82	5.31	20	
Carbon tetrachloride	17.81	1.0	20	0	89.0	72 - 136	18.87	5.77	20	
Chlorobenzene	19.23	1.0	20	0	96.2	82 - 118	20.22	4.99	20	
Chloroethane	13.41	1.0	20	0	67.1	60 - 138	13.34	0.556	20	
Chloroform	17.51	1.0	20	0	87.6	79 - 124	18.13	3.46	20	
Chloromethane	7.22	1.0	20	0	36.1	50 - 139	7.448	3.11	20	S
cis-1,2-Dichloroethene	17.22	1.0	20	0	86.1	78 - 123	18.25	5.84	20	
cis-1,3-Dichloropropene	18.2	1.0	20	0	91.0	75 - 124	18.62	2.24	20	
Dibromochloromethane	18.85	1.0	20	0	94.3	74 - 126	19.05	1.04	20	
Dibromomethane	17.73	1.0	20	0	88.6	79 - 123	18.31	3.23	20	
Dichlorodifluoromethane	2.385	1.0	20	0	11.9	32 - 152	2.494	4.46	20	S
Ethylbenzene	19.36	1.0	20	0	96.8	79 - 121	20.37	5.13	20	
Hexachlorobutadiene	20.37	1.0	20	0	102	66 - 134	20.9	2.6	20	
Isopropylbenzene	20.27	1.0	20	0	101	72 - 131	21.41	5.5	20	
m,p-Xylene	39.38	2.0	40	0	98.5	80 - 121	41.31	4.78	20	
Methylene chloride	15.92	2.0	20	0	79.6	74 - 124	16.82	5.49	20	
Naphthalene	17.4	1.0	20	0	87.0	61 - 128	13.39	26	20	R
n-Butylbenzene	21.55	1.0	20	0	108	75 - 128	22.53	4.44	20	
n-Propylbenzene	21.04	1.0	20	0	105	76 - 126	22.27	5.7	20	
o-Xylene	19.27	1.0	20	0	96.3	78 - 122	20.01	3.79	20	
sec-Butylbenzene	21.19	1.0	20	0	106	77 - 126	22.13	4.35	20	
Styrene	19.33	1.0	20	0	96.6	78 - 123	20.01	3.47	20	
tert-Butylbenzene	21.03	1.0	20	0	105	78 - 124	21.89	4.04	20	
Tetrachloroethene	18.77	1.0	20	0	93.8	74 - 129	20.01	6.41	20	
Toluene	18.64	1.0	20	0	93.2	80 - 121	19.66	5.31	20	
trans-1,2-Dichloroethene	16.6	1.0	20	0	83.0	75 - 124	17.32	4.26	20	
trans-1,3-Dichloropropene	18.5	1.0	20	0	92.5	73 - 127	18.9	2.14	20	
Trichloroethene	18.22	1.0	20	0	91.1	79 - 123	19.36	6.05	20	
Trichlorofluoromethane	14.47	1.0	20	0	72.4	65 - 141	14.93	3.14	20	
Vinyl chloride	8.624	1.0	20	0	43.1	58 - 137	9.461	9.25	20	S
Surr: 1,2-Dichloroethane-d4	*48.28*	*1.0*	*50*	*0*	*96.6*	*81 - 118*	*48.92*	*1.31*	*20*	
Surr: 4-Bromofluorobenzene	*50.27*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.78*	*1.01*	*20*	
Surr: Dibromofluoromethane	*47.9*	*1.0*	*50*	*0*	*95.8*	*80 - 119*	*49.15*	*2.56*	*20*	
Surr: Toluene-d8	*51.94*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.55*	*1.17*	*20*	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081148-19MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 16:25**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822665** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.5	78 - 124	19.24	3.39	20	
1,1,1-Trichloroethane	18.57	1.0	20	0	92.8	74 - 131	18.43	0.736	20	
1,1,2,2-Tetrachloroethane	20.71	1.0	20	0	104	71 - 121	18.76	9.87	20	
1,1,2-Trichloroethane	19.46	1.0	20	0	97.3	80 - 119	18.41	5.59	20	
1,1-Dichloroethane	17.44	1.0	20	0	87.2	77 - 125	16.8	3.7	20	
1,1-Dichloroethene	15.51	1.0	20	0	77.5	71 - 131	15.21	1.93	20	
1,1-Dichloropropene	19.15	1.0	20	0	95.8	78 - 125	18.98	0.913	20	
1,2,3-Trichlorobenzene	23.89	1.0	20	0	119	69 - 129	20.89	13.4	20	
1,2,3-Trichloropropane	20.38	1.0	20	0	102	73 - 122	18.45	9.96	20	
1,2,4-Trichlorobenzene	22.72	1.0	20	0	114	69 - 130	21.33	6.34	20	
1,2,4-Trimethylbenzene	22.12	1.0	20	0	111	76 - 124	21.11	4.67	20	
1,2-Dibromo-3-chloropropane	21.71	1.0	20	0	109	62 - 128	18.41	16.4	20	
1,2-Dibromoethane	18.99	1.0	20	0	94.9	77 - 121	18.11	4.72	20	
1,2-Dichlorobenzene	21.82	1.0	20	0	109	80 - 119	20.51	6.2	20	
1,2-Dichloroethane	17.61	1.0	20	0	88.1	73 - 128	17.42	1.08	20	
1,2-Dichloropropane	18.24	1.0	20	0	91.2	78 - 122	17.72	2.88	20	
1,3,5-Trimethylbenzene	22.07	1.0	20	0	110	75 - 124	20.85	5.68	20	
1,3-Dichlorobenzene	21.77	1.0	20	0	109	80 - 119	20.33	6.82	20	
1,3-Dichloropropane	18.86	1.0	20	0	94.3	80 - 119	18.33	2.84	20	
1,4-Dichlorobenzene	22.09	1.0	20	0	110	79 - 118	20.11	9.41	20	
2,2-Dichloropropane	18.41	1.0	20	0	92.1	60 - 139	17.81	3.36	20	
2-Butanone	29.41	2.0	40	0	73.5	56 - 143	29.9	1.66	20	
2-Chlorotoluene	20.94	1.0	20	0	105	79 - 122	19.75	5.85	20	
2-Hexanone	38.57	2.0	40	0	96.4	57 - 139	38.67	0.258	20	
4-Chlorotoluene	21.8	1.0	20	0	109	78 - 122	20.15	7.87	20	
4-Isopropyltoluene	23.48	1.0	20	0	117	77 - 127	22.11	6.02	20	
4-Methyl-2-pentanone	40.73	2.0	40	0	102	67 - 130	39.22	3.79	20	
Acetone	25.19	2.0	40	0	63.0	39 - 160	23.51	6.92	20	
Benzene	17.85	1.0	20	0	89.3	79 - 120	17.65	1.13	20	
Bromobenzene	21.04	1.0	20	0	105	80 - 120	19.61	7.04	20	
Bromochloromethane	16.67	1.0	20	0	83.3	78 - 123	15.94	4.45	20	
Bromodichloromethane	18.67	1.0	20	0	93.3	79 - 125	18.2	2.53	20	
Bromoform	18.65	1.0	20	0	93.3	66 - 130	17.76	4.93	20	
Bromomethane	9.864	1.0	20	0	49.3	53 - 141	10.02	1.58	20	S

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081148-19MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 16:25**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822665** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	28.39	2.0	40	0	71.0	64 - 133	28.28	0.406	20	
Carbon tetrachloride	18.45	1.0	20	0	92.2	72 - 136	18.16	1.56	20	
Chlorobenzene	20.19	1.0	20	0	101	82 - 118	19.72	2.36	20	
Chloroethane	11.48	1.0	20	0	57.4	60 - 138	11.86	3.32	20	S
Chloroform	17.83	1.0	20	0	89.2	79 - 124	17.27	3.19	20	
Chloromethane	7.091	1.0	20	0	35.5	50 - 139	7.451	4.95	20	S
cis-1,2-Dichloroethene	17.57	1.0	20	0	87.8	78 - 123	17.49	0.424	20	
cis-1,3-Dichloropropene	18.19	1.0	20	0	90.9	75 - 124	18.05	0.753	20	
Dibromochloromethane	19.17	1.0	20	0	95.8	74 - 126	18.48	3.68	20	
Dibromomethane	17.97	1.0	20	0	89.8	79 - 123	17.29	3.87	20	
Dichlorodifluoromethane	2.485	1.0	20	0	12.4	32 - 152	2.44	1.82	20	S
Ethylbenzene	20.34	1.0	20	0	102	79 - 121	20.25	0.432	20	
Hexachlorobutadiene	23.05	1.0	20	0	115	66 - 134	22.03	4.55	20	
Isopropylbenzene	21.46	1.0	20	0	107	72 - 131	21.37	0.395	20	
m,p-Xylene	41.63	2.0	40	0	104	80 - 121	40.98	1.59	20	
Methylene chloride	16.23	2.0	20	0	81.2	74 - 124	16.07	1.04	20	
Naphthalene	23.48	1.0	20	0	117	61 - 128	21.26	9.94	20	
n-Butylbenzene	24.26	1.0	20	0	121	75 - 128	23.4	3.61	20	
n-Propylbenzene	23.17	1.0	20	0	116	76 - 126	21.85	5.86	20	
o-Xylene	20.24	1.0	20	0	101	78 - 122	19.92	1.6	20	
sec-Butylbenzene	23.97	1.0	20	0	120	77 - 126	22.62	5.76	20	
Styrene	20.31	1.0	20	0	102	78 - 123	20.12	0.966	20	
tert-Butylbenzene	23.36	1.0	20	0	117	78 - 124	21.98	6.06	20	
Tetrachloroethene	19.91	1.0	20	0	99.5	74 - 129	19.44	2.37	20	
Toluene	19.52	1.0	20	0	97.6	80 - 121	19.07	2.36	20	
trans-1,2-Dichloroethene	16.89	1.0	20	0	84.4	75 - 124	16.56	1.93	20	
trans-1,3-Dichloropropene	18.26	1.0	20	0	91.3	73 - 127	17.96	1.65	20	
Trichloroethene	18.63	1.0	20	0	93.2	79 - 123	18.18	2.45	20	
Trichlorofluoromethane	14.96	1.0	20	0	74.8	65 - 141	14.89	0.467	20	
Vinyl chloride	9.151	1.0	20	0	45.8	58 - 137	9.04	1.23	20	S
Surr: 1,2-Dichloroethane-d4	*48.58*	*1.0*	*50*	*0*	*97.2*	*81 - 118*	*48.39*	*0.396*	*20*	
Surr: 4-Bromofluorobenzene	*50.2*	*1.0*	*50*	*0*	*100*	*85 - 114*	*51.09*	*1.76*	*20*	
Surr: Dibromofluoromethane	*47.84*	*1.0*	*50*	*0*	*95.7*	*80 - 119*	*48.33*	*1*	*20*	
Surr: Toluene-d8	*52.72*	*1.0*	*50*	*0*	*105*	*89 - 112*	*52.78*	*0.12*	*20*	

ALS Houston, US Date: 06-Sep-22

Client:	Bhate Environmental Associates, Inc.
Project:	Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder:	HS22081352

QC BATCH REPORT

Batch ID:	**R415980 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22081352-01	HS22081352-02

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R416096 (0) **Instrument: WetChem_HS** **Method: CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993**

MBLK Sample ID: **MBLK-R416096** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825372** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	15.0	15.0								U

LCS Sample ID: **LCS-R416096** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825371** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	99	15.0	100	0	99.0	85 - 115				

MS Sample ID: **HS22081262-01MS** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825374** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	90	15.0	50	42	96.0	80 - 120				

MSD Sample ID: **HS22081262-01MSD** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825373** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	90	15.0	50	42	96.0	80 - 120	90	0	20	

The following samples were analyzed in this batch: HS22081352-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R416165 (0) **Instrument: Balance1** **Method: OIL & GREASE (HEM) BY E1664A**

MBLK Sample ID: **WBLKW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826895** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	1.00	2.00								U

LCS Sample ID: **WLCSW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826897** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	37	2.00	40	0	92.5	78 - 114				

LCSD Sample ID: **WLCSDW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826896** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	38.6	2.00	40	0	96.5	78 - 114	37	4.23	18	

MS Sample ID: **HS22081369-01MS** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826894** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	38.5	2.00	40	2.4	90.2	78 - 114				

The following samples were analyzed in this batch: HS22081352-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: HS22081352

QC BATCH REPORT

Batch ID: R416314 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **31-Aug-2022 12:36**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830037** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **31-Aug-2022 12:41**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830038** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.17	0.500	20	0	95.9	80 - 120				
Sulfate	19.47	0.500	20	0	97.4	80 - 120				

MS Sample ID: **HS22081664-07MS** Units: **mg/L** Analysis Date: **31-Aug-2022 13:08**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830039** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.81	0.500	10	21.56	103	80 - 120				
Sulfate	20.84	0.500	10	10.12	107	80 - 120				

MSD Sample ID: **HS22081664-07MSD** Units: **mg/L** Analysis Date: **31-Aug-2022 13:13**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830040** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.69	0.500	10	21.56	101	80 - 120	31.81	0.378	20	
Sulfate	20.77	0.500	10	10.12	106	80 - 120	20.84	0.3	20	

The following samples were analyzed in this batch: HS22081352-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Influent Samples
WorkOrder: **HS22081352**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 06-Sep-22

Sample Receipt Checklist

Work Order ID: HS22081352 **Date/Time Received:** 25-Aug-2022 09:30

Client Name: Bhate Environmental **Received by:** Nilesh D. Ranchod

Completed By: /S/ Nilesh D. Ranchod (eSignature) 25-Aug-2022 11:15 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 29-Aug-2022 12:22 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	1.9C/1.7C U/C	IR31	
Cooler(s)/Kit(s):	47764		
Date/Time sample(s) sent to storage:	08/25/2022 11:30		
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:

HS22081352

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, Tx. 77099 ATTN: Dane Wacasey

Bhate Environmental Associates, Inc.
Groundwater Treatment Plant Quarterly Influent Sample

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT QUARTERLY INFLUENT SAMPLES**	
Prepared By: Scott Beesinger	P. O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	ROD Volatiles	Total Metals	Oil & Grease	Chemical Oxygen Demand	Chloride & Sulfate	1, 4 - DIOXANE	Perchlorate				Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_082422	Water	08/24/22 / 13:00		4	3		1								HCL	
LH18/24-SP140_082422	Water	08/24/22 / 13:00		1		1									HNO3	
LH18/24-SP140_082422	Water	08/24/22 / 13:00		2					1	1					NONE	
LH18/24-SP140_082422	Water	08/24/22 / 13:00		1				1							H2SO4	
LH18/24-SP140_082422	Water	08/24/22 / 13:00		1							1				NONE	
Trip Blank	Water	08/24/22		2	2										HCL	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/24/22	13:30		8/24/22	1915						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

(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

U7764

CUSTODY SEAL
Date: 8/23/22 Time: 1332
Name: Scott Beesinger
Company: Battelle

Seal Broken By:
Date: 8/25/22

U7764

Must Deliver Next Business Day
Time and Tempature Sensitive!

U7764

ORIGIN ID:SGRA (903) 930-0133
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 29JAN21
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3402
DIMS: 19x16x13 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-16-B076391-DW

RMA:

FedEx Express

TRK# 9473 0839 9407

PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

August 31, 2022 Service Request No:E2200846

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22081352

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2022
For your reference, these analyses have been assigned our service request number **E2200846.**

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

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 Environmental - US	**Service Request No.:**	E2200846
Project:	HS22081352	**Date Received:**	08/29/22
Sample Matrix:	Water		

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

One sample was received for analysis at ALS Environmental in Houston on 08/29/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200373-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The recoveries passed.

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:**E2200846
Project: HS22081352

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200846-001	LH18/24-SP140_082422	8/24/2022	1300

Service Request Summary

Folder #: **E2200846**
Client Name: ALS Environmental - US
Project Name: HS22081352
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081352
EDD: BASIC_WQC_CASNo_LOD

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200846-001	LH18/24-SP140_082422	Water	08/24/22 1300	**IV**

Service Request Summary

Folder #: **E2200846**
Client Name: ALS Environmental - US
Project Name: HS22081352
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081352
EDD: BASIC_WQC_CASNo_LOD

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	iv dUE 9/9

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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: Colorado **COC ID:** 19584

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081352
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22081352-01**	**LH18/24-SP140_082422**	**Water**	**24 Aug 2022 13:00**
	SUB_Perch-6850			01 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time: 8/25/22 11:10

Received By: COURIER Date/Time: 8/25/22 1116

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID IR91

Date/Time Received: 8/29/22 Initials: CG Date/Time Logged in: 8/29/22 Initials CG

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 If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

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		8/29/22	1110	CG	3.0°	☒
						☐
						☐
						☐

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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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#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200824-001	MW3_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200824-002	18CPTMW22SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200824-003	MW20_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200824-004	18CPTMW22DW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2200824-005	18CPTMW22R_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2200824-006	18CPTMW26SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2200824-007	18CPTMW07_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2200824-008	18CPTMW24_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2200828-001	18CPTMW14_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2200828-002	18CPTMW12SW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2200828-003	18CPTMW12SW_081922_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2200828-004	18CPTMW12DW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2200828-005	MW7_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2200828-006	18CPTMW16_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2200844-001	LH18/24-SP650_082422_AIX	.01	6850/ClO4 DOD			Water	10mL	
16	E2200844-002	LH18/24-SP650_082422_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2200845-001	LH18/24-SP650_082422	.01	6850/ClO4 DOD			Water	10mL	
18	E2200846-001	LH18/24-SP140_082422	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2200373-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200373-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200373-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200373-02 1.00µL EQ2200373-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200824-001	100.00µL	E2200824-002	100.00µL	E2200824-003	100.00µL	E2200824-004	100.00µL	E2200824-005	100.00µL	E2200824-006	100.00µL
E2200824-007	100.00µL	E2200824-008	100.00µL	E2200828-001	100.00µL	E2200828-002	100.00µL	E2200828-003	100.00µL	E2200828-004	100.00µL
E2200828-005	100.00µL	E2200828-006	100.00µL	E2200844-001	100.00µL	E2200844-002	100.00µL	E2200845-001	100.00µL	E2200846-001	100.00µL
EQ2200373-01	100.00µL	EQ2200373-02	100.00µL	EQ2200373-03	100.00µL						

Preparation Information Benchsheet

Prep Run#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/26/22 14:00
Finished: 8/26/22 14:35
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

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:**	E2200846
Project:	HS22081352	**Date Collected:**	8/24/22 1300
Sample Matrix:	Water	**Date Received:**	8/25/22
Sample Name:	LH18/24-SP140_082422	**Units:**	µg/L
Lab Code:	E2200846-001	**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	**12700**		100	50.0	25.0	1000	8/26/22	8/31/22 16:06	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200846
Project:	HS22081352	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200373-01	**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	8/26/22	8/31/22 10:28	405336	775985	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22081352
Sample Matrix: Water

Service Request: E2200846
Date Analyzed: 8/31/22

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: 405336

	Lab Control Sample EQ2200373-02			Duplicate Lab Control Sample EQ2200373-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0945	0.100	95	0.103	0.100	103	84 - 119	9	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:**	E2200846
Project:	HS22081352	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-02	**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	**0.0945**	J	0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:36	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200846
Project:	HS22081352	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-03	**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	**0.103**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:44	405336	775985	

ALS Environmental
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1317 South 13th Avenue
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September 02, 2022 **Analytical Report for Service Request No:** K2210050

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS22081352

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 01, 2022
For your reference, these analyses have been assigned our service request number **K2210050.**

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 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Luke Rahn
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.
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.
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: HS22081352
Sample Matrix: Water

Service Request: K2210050
Date Received: 09/01/2022

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:

One water sample was received for analysis at ALS Environmental on 09/01/2022. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/02/2022

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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K2210050

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F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **19651**

SUBCONTRACT TO:

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

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081352
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22081352-01**	**LH18/24-SP140_082422**	**Water**	**24 Aug 2022 13:00**
	HG_W_DOD - Report to LOD			01 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above. (EDDGenericLessThan) (DOD IV)

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: AUG 2 9 2022 18:00

Received By: _____ Date/Time: 8/29/22 1010

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

PM LR

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K22 10050

Received: 9/1/22 Opened: 9/1/22 By: ZH Unloaded: 9/1/22 By: ZH

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? 1 front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

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
	21.4	1B2	191651			578919974353	

4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column above:
   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*

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
15. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Under filled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

RUSH

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

Notes, Discrepancies, Resolutions: Temp not an issue, samples for metals analysis.

1/13/22 *Page* ____ *of* ____

Metals

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:**	K2210050
Project:	HS22081352	**Date Collected:**	08/24/22 13:00
Sample Matrix:	Water	**Date Received:**	09/01/22 10:10
Sample Name:	LH18/24-SP140_082422	**Basis:**	NA
Lab Code:	K2210050-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/02/22 12:24	09/01/22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2210050
Project:	HS22081352	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2214913-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/02/22 12:00	09/01/22	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22081352
Sample Matrix: Water

Service Request: K2210050
Date Analyzed: 09/02/22

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2214913-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	4.84	5.00	97	82-119

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352
Sample Matrix: Water

Metals

Prep Method: Method **Extraction Lot:** 405732
Analytical Method: 7470A **Extraction Date:** 09/01/22 14:07

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
LH18/24-SP140_082422	K2210050-001	8/24/22	9/1/22	10.0000 mL	10 mL	
Method Blank	KQ2214913-01MB	NA	NA	10.0000 mL	10 mL	
Lab Control Sample	KQ2214913-02LCS	NA	NA	10.0000 mL	10 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 09/02/22 11:03						
Mercury	7470A	776316	5.00	5.00	100	90-110
CCV 09/02/22 11:08						
Mercury	7470A	776316	5.13	5.00	103	90-110
CCV 09/02/22 11:27						
Mercury	7470A	776316	5.19	5.00	104	90-110
CCV 09/02/22 11:47						
Mercury	7470A	776316	5.27	5.00	105	90-110
CCV 09/02/22 12:06						
Mercury	7470A	776316	5.29	5.00	106	90-110
CCV 09/02/22 12:54						
Mercury	7470A	776316	5.24	5.00	105	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	C
ICB 09/02/22 11:05				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:10				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:29				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:48				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 12:08				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 12:55				
Mercury	7470A	776316	0.02	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV							
Mercury	7470A	776316	0.20	0.2	100	50-150	09/02/22 11:06

Superset Reference:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352/

Detection Limits

Instrument: K-CVAA-04 **Matrix:** Water

Analyte	Wavelength (nm)	Units	LOQ	LOD	MDL
Mercury	253	ug/L	0.2	0.05	0.02

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352/

Analysis Run Log

Instrument ID: **K-CVAA-04** **Analytical BatchID:** **776316**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/02/22 10:53	
ZZZZZZ	1	09/02/22 10:55	
ZZZZZZ	1	09/02/22 10:57	
ZZZZZZ	1	09/02/22 10:58	
ZZZZZZ	1	09/02/22 11:00	
ZZZZZZ	1	09/02/22 11:01	
ICV1	1	09/02/22 11:03	X
ICB1	1	09/02/22 11:05	X
LLICV1	1	09/02/22 11:06	X
CCV1	1	09/02/22 11:08	X
CCB1	1	09/02/22 11:10	X
ZZZZZZ	1	09/02/22 11:11	
ZZZZZZ	1	09/02/22 11:13	
ZZZZZZ	5	09/02/22 11:14	
ZZZZZZ	5	09/02/22 11:16	
ZZZZZZ	1	09/02/22 11:18	
ZZZZZZ	1	09/02/22 11:19	
ZZZZZZ	1	09/02/22 11:21	
ZZZZZZ	1	09/02/22 11:23	
ZZZZZZ	1	09/02/22 11:24	
ZZZZZZ	1	09/02/22 11:26	
CCV2	1	09/02/22 11:27	X
CCB2	1	09/02/22 11:29	X
ZZZZZZ	1	09/02/22 11:31	
ZZZZZZ	1	09/02/22 11:32	
ZZZZZZ	1	09/02/22 11:34	
ZZZZZZ	1	09/02/22 11:35	
ZZZZZZ	1	09/02/22 11:37	
ZZZZZZ	1	09/02/22 11:39	
ZZZZZZ	1	09/02/22 11:40	
ZZZZZZ	1	09/02/22 11:42	
ZZZZZZ	1	09/02/22 11:44	
ZZZZZZ	1	09/02/22 11:45	
CCV3	1	09/02/22 11:47	X
CCB3	1	09/02/22 11:48	X
ZZZZZZ	1	09/02/22 11:50	
ZZZZZZ	1	09/02/22 11:52	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210050
Project: HS22081352/

Analysis Run Log

Instrument ID: **K-CVAA-04** **Analytical BatchID:** **776316**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/02/22 11:53	
ZZZZZZ	1	09/02/22 11:55	
ZZZZZZ	1	09/02/22 11:57	
ZZZZZZ	1	09/02/22 11:58	
KQ2214913-01MB	1	09/02/22 12:00	X
KQ2214913-02LCS	1	09/02/22 12:01	X
ZZZZZZ	1	09/02/22 12:03	
ZZZZZZ	1	09/02/22 12:05	
CCV4	1	09/02/22 12:06	X
CCB4	1	09/02/22 12:08	X
ZZZZZZ	1	09/02/22 12:10	
ZZZZZZ	1	09/02/22 12:11	
ZZZZZZ	1	09/02/22 12:13	
ZZZZZZ	1	09/02/22 12:14	
ZZZZZZ	1	09/02/22 12:16	
ZZZZZZ	1	09/02/22 12:18	
ZZZZZZ	1	09/02/22 12:19	
ZZZZZZ	1	09/02/22 12:21	
ZZZZZZ	1	09/02/22 12:22	
K2210050-001	1	09/02/22 12:24	X
ZZZZZZ	1	09/02/22 12:26	
CCV5	1	09/02/22 12:54	X
CCB5	1	09/02/22 12:55	X

Raw Data

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Metals

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CVAA Mercury Water Data Review Form

K-CVAA-04

Element:	Hg		
Analysis Lot #:	090222A HG4		
Starlims #:	776316		
Cal. STD/CCV Source:	HG3-85-L		
Pipette IDs:	HG-41585305/HG-38883934		
16mL Tube Lot #:	P7554803		
KMnO4:	HG3-85-B	Expiration Date:	8/29/2023
K2S2O8:	HG3-84-L	Expiration Date:	8/4/2023
NH2OH-HCl/NaCl	HG3-84-T	Expiration Date:	8/25/2023
SnCl2/HCl:	HG3-85-E	Expiration Date:	7/1/2023

Service Request Numbers:

K2209972, K2210016, K2210034, K2210036, K2210037, K2210038, K2210039, K2210049, K2210050

	Yes	No	NA
1) Appropriate standardization completed	X		
2) ICV within 10% of true value	X		
3) CCVs in control (+/- 10%)	X		
4) CCBs and or ICBs below MRL	X		
5) CCV/CCB check run every 10 samples	X		
6) All reported samples within calibration range	X		
7) Calculations correct	X		

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: _____ (Initials)

Primary Reviewed By: _____ Date: 9/2/22

Secondary Reviewed By: _____ Date: 9/2/22

Data Review Form

Instrument ID#: **K-CVAA-04**
DataFile Name: **R:\ICP\WIP\DATA\K-CVAA-04 (M-7600)\090222A HG4.csv**
RUNNO: **776316**

K2209972

No exceptions to report.

K2210016

No exceptions to report.

K2210034

No exceptions to report.

K2210036

No exceptions to report.

K2210037

No exceptions to report.

K2210038

No exceptions to report.

K2210039

No exceptions to report.

K2210049

No exceptions to report.

K2210050

No exceptions to report.

Primary Approver: 9/2/22
Secondary Approver: 9/2/22

CVAA Hg ANALYTICAL WORKSHEET

Method: 7470	Cal. Inter. Std* (100ppb): HG3-85-L 2nd Source Inter Std** (1ppm): HG3-84-V

Analysis For: Hg **DATA**

Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
1	Cal. Blk.	0.000	~	~		
2	Std 0.2*	0.200	~	(0.1-50mL)		
3	Std 0.5*	0.500	~	(0.25-50mL)		
4	Std 1.0*	1.000	~	(0.5-50mL)		
5	Std 5.0*	5.000	~	(2.5-50mL)		
6	Std 10.0*	10.000	~	(5.0-50mL)		
7	ICV1**	5.002	~	100%		
8	ICB1	-0.014	~			
9	LLICV1*	0.199	~	100%		
10	CCV1*	5.126	~	103%		
11	CCB1	-0.009	~			
12	KQ2214912-01	-0.002	~			
13	KQ2214912-02	4.657	~	93%		
14	K2209972-001 5X	-0.007	5		Cx=	-0.005
15	K2209972-001A 5X	3.300	5	66%		
16	~~NS~~	~~-0.063~~	~			9/2/22 SF
17	K2210016-005	0.001	~			
18	K2210034-001	0.006	~			
19	KQ2214912-03	4.640	~	93%		
20	KQ2214912-04	4.621	~	92%		
21	K2210034-001A	5.391	~	108%		
22	CCV2	5.185	~	104%		
23	CCB2	-0.010	~			
24	K2210034-002	0.003	~			
25	K2210034-003	0.003	~			
26	K2210034-004	0.001	~			
27	K2210036-001	0.005	~			
28	K2210036-002	0.006	~			
29	K2210036-003	0.003	~			
30	K2210036-004	0.005	~			
31	K2210036-005	0.019	~			
32	K2210037-001	0.003	~			

Comments:

R:\ICP\MISC\Document Control\CVAA Controlled - HgRunForm 10-17-17

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg **DATA**

Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
33	K2210037-002	0.013	~			
34	CCV3	5.266	~	105%		
35	CCB3	-0.008	~			
36	K2210037-003	0.006	~			
37	K2210037-004	0.001	~			
38	K2210037-005	0.003	~			
39	K2210039-001	0.004	~			
40	K2210039-002	0.022	~			
41	K2210039-003	-0.002	~			
42	KQ2214913-01	0.002	~			
43	KQ2214913-02	4.835	~	97%		
44	K2210038-001	-0.003	~			
45	KQ2214913-03	4.799	~	96%		
46	CCV4	5.285	~	106%		
47	CCB4	-0.011	~			
48	KQ2214913-04	4.750	~	95%		
49	K2210038-001A	5.287	~	106%		
50	K2210038-002	-0.001	~			
51	K2210038-003	0.078	~			
52	K2210038-004	0.080	~			
53	K2210038-005	0.002	~			
54	K2210038-006	0.004	~			
55	K2210038-007	0.004	~			
56	K2210049-001	0.005	~			
57	K2210050-001	0.003	~			
58	~~CCV5~~	~~0.169~~	~			Solution Low 9/12/22
59	CCV5	5.241	~	105%		
60	CCB5	-0.011	~			
61						
62						
63						
64						

Comments:

Soil/Tissue Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

[CVAA Controlled - HgRunForm 10-17-17] HG2.XLS

Report Generated By Teledyne Leeman QuickTrace

Analyst: alkls.nouser

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\090222B HG4.wszf

Creation Date: 9/2/2022 10:10:58 AM

Comment:

Results

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
Calibration Blank				STD		0.000		14	168.27				
		1.0000					N/A						
Replicates	26.3	-14.9	39.1	5.8									
Standard #1 (0.2 ug/L)				STD		0.200		1504	2.29	-1.47%			
		1.0000					N/A						
Replicates	1455.7	1506.0	1536.7	1516.0									
Standard #2 (1 ug/L)				STD		0.500		3703	1.42	-2.40%			
		1.0000					N/A						
Replicates	3659.0	3660.4	3724.2	3767.1									
Standard #3 (2.5 ug/L)				STD		1.000		7425	1.77	-1.95%			
		1.0000					N/A						
Replicates	7245.5	7411.8	7505.2	7538.5									
Standard #4 (5 ug/L)				STD		5.000		38627	1.54	2.17%			
		1.0000					N/A						
Replicates	37826.6	38542.1	38973.6	39166.1									
Standard #5 (10 ug/L)				STD		10.000		75214	1.73	-0.52%			
		1.0000					N/A						
Replicates	73530.6	74911.9	75896.4	76517.3									

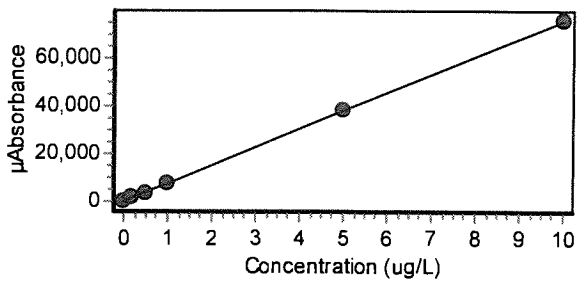
Calibration

Equation: Abs = 7558.940x + 14.077

R2: 0.99979 RSE: 2.36%

SEE: 532.8993

Flags:



ICV1				ICV		5.002		37826	1.95				
		1.0000					100.04						
Replicates	36868.7	37669.2	38193.4	38571.4									
ICB1				ICB		-0.014		-89	30.10				
		1.0000					N/A						
Replicates	-63.8	-63.7	-100.2	-127.4									
LLICV1				CRDL		0.199		1518	3.24				
		1.0000					99.49						
Replicates	1470.4	1492.3	1528.1	1582.0									

Sample Name	Type	Conc (ug/L)	µAbs	%RSD	Residual Flags	Wt. (g)	Vol (ml)
Aliq. Vol.	Diln. Vol	DF	Spike Vol	% Recovery			
CCV1	CCV	5.126	38759	1.64			
	1.0000		102.51				
Replicates	37917.4	38652.1	39073.6	39391.4			
CCB1	CCB	-0.009	-54	48.00			
	1.0000		N/A				
Replicates	-50.1	-88.6	-64.3	-11.1			
KQ2214912-01	UNK	-0.002	0	190.90			
	1.0000		N/A				
Replicates	13.9	23.4	0.5	-38.0			
KQ2214912-02	UNK	4.657	35215	1.46			
	1.0000		N/A				
Replicates	34558.0	35098.5	35440.7	35764.2			
K2209972-001 5X	UNK	-0.007	-39	38.29			
	1.0000		N/A				
Replicates	-46.6	-42.2	-9.6	-55.9			
K2209972-001A 5X	UNK	3.300	24957	1.64			
	1.0000		N/A				
Replicates	24427.6	24869.0	25166.0	25367.0			
NS	UNK	-0.063	-462	4.81			
	1.0000		N/A				
Replicates	-480.6	-432.7	-454.0	-479.4			
K2210016-005	UNK	0.001	22	353.07			
	1.0000		N/A				
Replicates	60.7	5.5	6.4	13.5			
K2210034-001	UNK	0.006	61	64.52			
	1.0000		N/A				
Replicates	27.0	43.7	85.0	87.4			
KQ2214912-03	UNK	4.640	35088	1.64			
	1.0000		N/A				
Replicates	34351.8	34931.3	35422.5	35648.0			
KQ2214912-04	UNK	4.621	34941	1.37			
	1.0000		N/A				
Replicates	34359.0	34777.0	35164.8	35463.8			
K2210034-001A	UNK	5.391	40763	1.42			
	1.0000		N/A				
Replicates	40024.0	40611.1	41071.8	41343.4			
CCV2	CCV	5.185	39205	2.78			
	1.0000		103.69				
Replicates	37808.2	38895.7	39878.0	40238.0			
CCB2	CCB	-0.010	-64	30.34			
	1.0000		N/A				
Replicates	-32.6	-81.1	-83.4	-58.9			

9/2/22

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual Flags	Wt. (g)	Vol (ml)
K2210034-002				UNK		0.003		33	124.28			
		1.0000					N/A					
Replicates	30.4	55.9	45.8	1.1								
K2210034-003				UNK		0.003		37	126.24			
		1.0000					N/A					
Replicates	80.0	22.2	26.7	18.9								
K2210034-004				UNK		0.001		20	572.22			
		1.0000					N/A					
Replicates	-27.3	41.7	36.5	27.7								
K2210036-001				UNK		0.005		51	25.48			
		1.0000					N/A					
Replicates	64.1	41.7	48.2	50.7								
K2210036-002				UNK		0.006		63	80.86			
		1.0000					N/A					
Replicates	7.5	62.5	87.2	95.7								
K2210036-003				UNK		0.003		40	90.54			
		1.0000					N/A					
Replicates	63.6	15.5	24.8	56.3								
K2210036-004				UNK		0.005		49	80.99			
		1.0000					N/A					
Replicates	12.5	40.9	71.9	71.3								
K2210036-005				UNK		0.019		154	18.86			
		1.0000					N/A					
Replicates	189.9	147.2	153.4	126.4								
K2210037-001				UNK		0.003		39	108.38			
		1.0000					N/A					
Replicates	15.0	16.1	62.1	61.6								
K2210037-002				UNK		0.013		115	26.79			
		1.0000					N/A					
Replicates	146.8	91.4	93.9	128.5								
CCV3				CCV		5.266		39822	1.71			
		1.0000					105.33					
Replicates	38917.6	39708.3	40187.3	40473.3								
CCB3				CCB		-0.008		-50	45.33			
		1.0000					N/A					
Replicates	-7.6	-56.3	-72.8	-62.5								
K2210037-003				UNK		0.006		59	84.65			
		1.0000					N/A					
Replicates	32.3	20.5	95.6	85.6								
K2210037-004				UNK		0.001		24	236.03			
		1.0000					N/A					
Replicates	55.4	21.1	-4.4	25.6								

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
K2210037-005				UNK		0.003		37	130.02				
		1.0000					N/A						
Replicates	11.3	11.3	67.6	59.4									
K2210039-001				UNK		0.004		42	99.24				
		1.0000					N/A						
Replicates	84.0	33.2	26.2	25.8									
K2210039-002				UNK		0.022		184	25.35				
		1.0000					N/A						
Replicates	147.8	146.5	213.2	228.7									
K2210039-003				UNK		-0.002		2	330.06				
		1.0000					N/A						
Replicates	58.3	-8.4	-10.4	-29.9									
KQ2214913-01				UNK		0.002		26	240.38				
		1.0000					N/A						
Replicates	6.5	3.0	29.5	64.0									
KQ2214913-02				UNK		4.835		36563	1.08				
		1.0000					N/A						
Replicates	36052.1	36493.7	36728.8	36979.0									
K2210038-001				UNK		-0.003		-7	106.94				
		1.0000					N/A						
Replicates	-14.9	-21.7	-18.2	26.6									
KQ2214913-03				UNK		4.799		36286	1.20				
		1.0000					N/A						
Replicates	35718.9	36197.1	36506.8	36722.9									
CCV4				CCV		5.285		39966	1.59				
		1.0000					105.71						
Replicates	39134.0	39855.2	40257.4	40618.9									
CCB4				CCB		-0.011		-67	40.99				
		1.0000					N/A						
Replicates	-32.7	-50.7	-74.0	-109.4									
KQ2214913-04				UNK		4.750		35917	1.26				
		1.0000					N/A						
Replicates	35333.9	35813.5	36155.7	36366.2									
K2210038-001A				UNK		5.287		39980	1.17				
		1.0000					N/A						
Replicates	39334.4	39957.2	40238.0	40389.2									
K2210038-002				UNK		-0.001		8	402.93				
		1.0000					N/A						
Replicates	16.6	-23.8	2.8	35.8									
K2210038-003				UNK		0.078		607	4.91				
		1.0000					N/A						
Replicates	632.5	615.4	614.4	565.0									

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
K2210038-004				UNK		0.080		618	3.99				
		1.0000					N/A						
Replicates	600.7		622.7		597.6		649.6						
K2210038-005				UNK		0.002		29	323.24				
		1.0000					N/A						
Replicates	71.6		73.1		-8.4		-18.4						
K2210038-006				UNK		0.004		42	70.77				
		1.0000					N/A						
Replicates	32.6		42.2		23.4		68.7						
K2210038-007				UNK		0.004		41	89.78				
		1.0000					N/A						
Replicates	49.2		40.9		64.5		8.0						
K2210049-001				UNK		0.005		51	38.02				
		1.0000					N/A						
Replicates	59.4		34.7		44.4		65.5						
K2210050-001				UNK		0.003		39	61.55				
		1.0000					N/A						
Replicates	44.6		45.9		48.4		16.1						
CCV5				CCV		0.169		1290	22.27		Q		9/2/22
		1.0000					~~3.38~~						
Replicates	927.1		1201.3		1504.5		1528.3						
CCV5				CCV		5.241		39631	1.80				
		1.0000					104.82						
Replicates	38724.5		39459.7		39953.9		40387.2						
CCB5				CCB		-0.011		-73	24.81				
		1.0000					N/A						
Replicates	-78.4		-65.5		-48.2		-99.3						

Preparation Information Benchsheet

Prep Run#: 405730
Team: Metals/JHINSON
Number of Copies to make: 6

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ2214912-01	MB		7470A/Hg T		Liquid	10.0000mL	10.00mL	
2	KQ2214912-02	LCS		7470A/Hg T		Liquid	10.0000mL	10.00mL	
3	K2209972-001	083122	.03	7470A/Hg T		Water	2.5000mL	10.00mL	
4	K2210016-005	Metals Q2	.10	7470A/Hg T		Water	10.0000mL	10.00mL	
5	K2210034-001	18CPTMW14_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
6	KQ2214912-03	K2210034-001 MS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
7	KQ2214912-04	K2210034-001 DMS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
8	K2210034-002	19CPTMW12SW_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
9	K2210034-003	18CPTMW12SW_081922_a	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
10	K2210034-004	18CPTMW12DW_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
11	K2210036-001	MW3_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
12	K2210036-002	18CPTMW22SW_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
13	K2210036-003	MW20_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
14	K2210036-004	18CPTMW22DW_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
15	K2210036-005	18CPTMW22R_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
16	K2210037-001	18CPTMW10DW_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
17	K2210037-002	MW9_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
18	K2210037-003	18WW19_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
19	K2210037-004	18WW19_082322_a	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
20	K2210037-005	18WW20_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
21	K2210039-001	MW22_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
22	K2210039-002	18WW09_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
23	K2210039-003	18CPTMW19SW_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 224676 Logbook Ref: HG3-84-V Expires On: 09/25/2022

KQ2214912-02 0.05mL KQ2214912-03 0.05mL KQ2214912-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube 2106023 (220673)
K-MET 16 mL Tube GL5221 (223546)
K-MET H2SO4 Hg 61139 (219381)
K-MET HNO3 Hg 22E1062003 (223986)

Preparation Information Benchsheet

Prep Run#: 405730
Team: Metals/JHINSON

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

Preparation Steps

Step: Digestion
Started: 9/1/22 14:07
Finished: 9/1/22 16:07
By: JHINSON
Comments

Preparation Equipment

K-Block-Digester-14	Digestion	IR Thermometer ID: IR03		K-Block-Digester-14	Digestion	Temperature	94.8 deg C
K-Block-Digester-14	Digestion	Temperature Check Location	21	K-BlockDigester-17	Digestion	IR Thermometer ID: IR03	
K-BlockDigester-17	Digestion	Temperature	94.7 deg C	K-BlockDigester-17	Digestion	Temperature Check Location	64
K-U52540	Digestion			K-U72662	Digestion		
HG-39591307	Digestion						

Comments: Cal Std: HG3-85-L.

Reviewed By: _____ Date: 9/2/22

9/2
Rush

Preparation Information Benchsheet

Prep Run#: 405730 **Prep WorkFlow:** HgDigAq **Status:** Draft
Team: Metals **Prep Method:** **Prep Date/Time:** 9/1/22 09:52 AM
Number of Copies to make: 6

#	Lab Code	Client ID	B#	√	Test	Matrix	Amt Ext.	pH	Int Vol	Final Vol	Surr Added	Spike Added
1	KQ2214912-01	Method Blank			7470A/Hg T	Liquid						
2	KQ2214912-02	Lab Control Sample			7470A/Hg T	Liquid						
3	K2209972-001	083122	.03		7470A/Hg T	Water	2.5mL	25 L4	Cx=	-0.005		
4	K2210016-005	Metals Q2	.10		7470A/Hg T	Water						
5	K2210034-001	18CPTMW14_081922	.01		7470A/Hg T	Water						
6	KQ2214912-03	Matrix Spike	.01		7470A/Hg T	Liquid						
7	KQ2214912-04	Duplicate Matrix Spike	.01		7470A/Hg T	Liquid						
8	K2210034-002	19CPTMW12SW_081922	.01		7470A/Hg T	Water						
9	K2210034-003	18CPTMW12SW_081922_a	.01		7470A/Hg T	Water						
10	K2210034-004	18CPTMW12DW_081922	.01		7470A/Hg T	Water						
11	K2210036-001	MW3_081822	.01		7470A/Hg T	Water						
12	K2210036-002	18CPTMW22SW_081822	.01		7470A/Hg T	Water						
13	K2210036-003	MW20_081822	.01		7470A/Hg T	Water						
14	K2210036-004	18CPTMW22DW_081822	.01		7470A/Hg T	Water						
15	K2210036-005	18CPTMW22R_081822	.01		7470A/Hg T	Water						
16	K2210037-001	18CPTMW10DW_082322	.01		7470A/Hg T	Water						
17	K2210037-002	MW9_082322	.01		7470A/Hg T	Water						
18	K2210037-003	18WW19_082322	.01		7470A/Hg T	Water						
19	K2210037-004	18WW19_082322_a	.01		7470A/Hg T	Water						
20	K2210037-005	18WW20_082322	.01		7470A/Hg T	Water						
21	K2210039-001	MW22_081122	.01		7470A/Hg T	Water						
22	K2210039-002	18WW09_081122	.01		7470A/Hg T	Water						
23	K2210039-003	18CPTMW19SW_081122	.01		7470A/Hg T	Water						

Comments: Cal Std HG3-85-L 7IK 14|94-8|21 1210-1410 7IK 17|94-7|64 1407-1607

Surrogate ID: _____ Spike ID: _____

Witnessed By: _____

Analyst: _____ Assisted By: 776316

Preparation Information Benchsheet

Prep Run#: 405732
Team: Metals/JHINSON
Number of Copies to make: 3

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ2214913-01	MB		7470A/Hg T		Liquid	10.0000mL	10.00mL	
2	KQ2214913-02	LCS		7470A/Hg T		Liquid	10.0000mL	10.00mL	
3	K2210038-001	AWD3_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
4	KQ2214913-03	K2210038-001 MS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
5	KQ2214913-04	K2210038-001 DMS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
6	K2210038-002	AWD3_081622_a	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
7	K2210038-003	102_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
8	K2210038-004	102_081622_a	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
9	K2210038-005	18WW03_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
10	K2210038-006	CO3_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
11	K2210038-007	18WW18_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
12	K2210049-001	LH18/24-SP650_082422	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
13	K2210050-001	LH18/24-SP140_082422	.01	7470A/Hg T		Water	10.0000mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 224676 Logbook Ref: HG3-84-V Expires On: 09/25/2022

KQ2214913-02 0.05mL KQ2214913-03 0.05mL KQ2214913-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	2106023 (220673)	K-MET 16 mL Tube	GL5221 (223546)	K-MET H2SO4 Hg	61139 (21938I)
K-MET HNO3 Hg	22E1062003 (223986)				

Preparation Steps

Step: Digestion
Started: 9/1/22 14:07
Finished: 9/1/22 16:07
By: JHINSON
Comments

Preparation Equipment

K-Block-Digester-14	Digestion	IR Thermometer ID: IR03		K-Block-Digester-14	Digestion	Temperature	94.8 deg C
K-Block-Digester-14	Digestion	Temperature Check Location	21	K-BlockDigester-17	Digestion	IR Thermometer ID: IR03	
K-BlockDigester-17	Digestion	Temperature	94.7 deg C	K-BlockDigester-17	Digestion	Temperature Check Location	64
HG-39591307	Digestion			K-U72662	Digestion		
K-U52540	Digestion						

Preparation Information Benchsheet

Prep Run#: 405732
Team: Metals/JHINSON

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

Comments: Cal Std: HG3-85-L.

Reviewed By: _____ Date: 9/2/22

RUSH 9/5

Preparation Information Benchsheet

Prep Run#: 405732 **Prep WorkFlow:** HgDigAq **Status:** Draft
Team: Metals **Prep Method:** **Prep Date/Time:** 9/1/22 09:55 AM
Number of Copies to make: 3

#	Lab Code	Client ID	B#	√	Test	Matrix	Amt Ext.	pH	Int Vol	Final Vol	Surr Added	Spike Added
1	KQ2214913-01	Method Blank			7470A/Hg T	Liquid						
2	KQ2214913-02	Lab Control Sample			7470A/Hg T	Liquid						
3	K2210038-001	AWD3_081622	.01		7470A/Hg T	Water						
4	KQ2214913-03	Matrix Spike	.01		7470A/Hg T	Liquid						
5	KQ2214913-04	Duplicate Matrix Spike	.01		7470A/Hg T	Liquid						
6	K2210038-002	AWD3_081622_a	.01		7470A/Hg T	Water						
7	K2210038-003	102_081622	.01		7470A/Hg T	Water						
8	K2210038-004	102_081622_a	.01		7470A/Hg T	Water						
9	K2210038-005	18WW03_081622	.01		7470A/Hg T	Water						
10	K2210038-006	CO3_081622	.01		7470A/Hg T	Water						
11	K2210038-007	18WW18_081622	.01		7470A/Hg T	Water						
12	K2210049-001	LH18/24-SP650_082422	.01		7470A/Hg T	Water						
13	K2210050-001	LH18/24-SP140_082422	.01		7470A/Hg T	Water						

Comments: Cal Std Hg-35-L BLK 1414-8/21 1210-1410 BLK 17/94.7 169 1407-1607

Surrogate ID: _____ Spike ID: _____

Witnessed By: _____

Analyst: _____ Assisted By: _____

10450 Stancliff Rd. Suite 210
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T: +1 281 530 5656
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September 06, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22081354**

Laboratory Results for: **Groundwater Treatment Plant Quarterly Effluent Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Aug 25, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
Work Order: HS22081354

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081354-01	LH18/24-SP650_082422	Water		24-Aug-2022 13:00	25-Aug-2022 09:30	☐
HS22081354-02	Trip Blank	Water		24-Aug-2022 00:00	25-Aug-2022 09:30	☐

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Effluent Samples
Work Order: HS22081354

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Work Order Comments

• The analyses for Mercury was subcontracted to ALS Environmental in Holland, MI. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 183056

Sample ID: LCSD-183056

• LCSD RPD was above the upper control limit. The individual recoveries were in control. (2-Fluorobiphenyl)

Sample ID: LH18/24-SP650_082422 (HS22081354-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R415980

Sample ID: Trip Blank (HS22081354-02)

• Trichlorofluomethane hit confirmed.

Sample ID: HS22081409-03MS

• MS and MSD are for an unrelated sample

Sample ID: HS22081148-19MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020A

Batch ID: 182909

Sample ID: HS22081191-02MS

• MS and MSD are for an unrelated sample

Sample ID: HS22081191-02PDS

• PDS is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R416314

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

WetChemistry by Method E1664A

Batch ID: R416165

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Groundwater Treatment Plant Quarterly Effluent Samples
Work Order: HS22081354

WetChemistry by Method E410.4

Batch ID: R416096

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Effluent Samples WorkOrder:HS22081354
Sample ID: LH18/24-SP650_082422 Lab ID:HS22081354-01
Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 13:36
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	26-Aug-2022 13:36
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	26-Aug-2022 13:36
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 13:36
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	26-Aug-2022 13:36
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Effluent Samples WorkOrder:HS22081354
Sample ID: LH18/24-SP650_082422 Lab ID:HS22081354-01
Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
cis-1,2-Dichloroethene	**3.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	26-Aug-2022 13:36
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 13:36
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 13:36
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:36
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:36
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:36
Surr: 1,2-Dichloroethane-d4	*95.1*			**0**	*81-118*	*%REC*	*1*	*26-Aug-2022 13:36*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*85-114*	*%REC*	*1*	*26-Aug-2022 13:36*
Surr: Dibromofluoromethane	*95.9*			**0**	*80-119*	*%REC*	*1*	*26-Aug-2022 13:36*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*26-Aug-2022 13:36*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 31-Aug-2022		Analyst: MBG
1,4-Dioxane	**18**		**1.0**	**1.0**	**1.0**	**ug/L**	100	06-Sep-2022 14:03
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 14:03*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 14:03*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*06-Sep-2022 14:03*

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Effluent Samples WorkOrder:HS22081354
Sample ID: LH18/24-SP650_082422 Lab ID:HS22081354-01
Collection Date: 24-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 26-Aug-2022		Analyst: YP
Aluminum	**0.0139**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	02-Sep-2022 12:34
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	02-Sep-2022 12:34
Arsenic	**0.000455**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Barium	**0.358**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	02-Sep-2022 12:34
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	02-Sep-2022 12:34
Calcium	**16.6**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	02-Sep-2022 12:34
Chromium	**0.000882**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Cobalt	**0.000205**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Iron	**0.109**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:34
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	02-Sep-2022 12:34
Magnesium	**15.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:34
Manganese	**0.0672**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Nickel	**0.000878**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Potassium	**2.57**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	02-Sep-2022 12:34
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	02-Sep-2022 12:34
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	02-Sep-2022 12:34
Sodium	**817**		**0.280**	**1.00**	**4.00**	**mg/L**	20	02-Sep-2022 14:29
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	02-Sep-2022 12:34
Vanadium	**0.000682**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
Zinc	**0.0226**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	02-Sep-2022 12:34
OIL & GREASE (HEM) BY E1664A		**Method:E1664A**						Analyst: KAH
Oil and Grease	1.00	U	0.610	1.00	2.00	mg/L	1	30-Aug-2022 14:30
CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993		**Method:E410.4**						Analyst: TH
Chemical Oxygen Demand	**36.0**		**5.00**	**15.0**	**15.0**	**mg/L**	1	29-Aug-2022 16:00
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,140**		**10.0**	**25.0**	**25.0**	**mg/L**	50	31-Aug-2022 21:44
Sulfate	**32.0**		**0.200**	**0.500**	**0.500**	**mg/L**	1	31-Aug-2022 21:39
SUBCONTRACT ANALYSIS - MERCURY LOW		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	02-Sep-2022 13:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Aug-2022 18:50

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Effluent Samples WorkOrder:HS22081354
Sample ID: Trip Blank Lab ID:HS22081354-02
Collection Date: 24-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 13:15
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	26-Aug-2022 13:15
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	26-Aug-2022 13:15
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 13:15
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	26-Aug-2022 13:15
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15

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

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Groundwater Treatment Plant Quarterly Effluent Samples WorkOrder:HS22081354
Sample ID: Trip Blank Lab ID:HS22081354-02
Collection Date: 24-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	26-Aug-2022 13:15
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	26-Aug-2022 13:15
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	26-Aug-2022 13:15
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	26-Aug-2022 13:15
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Trichlorofluoromethane	**4.1**		**0.30**	**1.0**	**1.0**	**ug/L**	1	26-Aug-2022 13:15
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	26-Aug-2022 13:15
Surr: 1,2-Dichloroethane-d4	*95.5*			**0**	*81-118*	*%REC*	*1*	*26-Aug-2022 13:15*
Surr: 4-Bromofluorobenzene	*94.1*			**0**	*85-114*	*%REC*	*1*	*26-Aug-2022 13:15*
Surr: Dibromofluoromethane	*96.4*			**0**	*80-119*	*%REC*	*1*	*26-Aug-2022 13:15*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*26-Aug-2022 13:15*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

Batch ID: 182909 **Start Date:** 26 Aug 2022 08:30 **End Date:** 26 Aug 2022 12:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22081354-01		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 183056 **Start Date:** 31 Aug 2022 07:00 **End Date:** 31 Aug 2022 10:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22081354-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 182909 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00		26 Aug 2022 08:30	02 Sep 2022 14:29	20
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00		26 Aug 2022 08:30	02 Sep 2022 12:34	1
Batch ID: 183056 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00		31 Aug 2022 07:39	06 Sep 2022 14:03	100
Batch ID: R415980 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			26 Aug 2022 13:36	1
HS22081354-02	Trip Blank	24 Aug 2022 00:00			26 Aug 2022 13:15	1
Batch ID: R416096 (0)	**Test Name :** CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			29 Aug 2022 16:00	1
Batch ID: R416165 (0)	**Test Name :** OIL & GREASE (HEM) BY E1664A				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			30 Aug 2022 14:30	1
Batch ID: R416294 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			31 Aug 2022 18:50	1
Batch ID: R416314 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			31 Aug 2022 21:44	50
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			31 Aug 2022 21:39	1
Batch ID: R416444 (0)	**Test Name :** SUBCONTRACT ANALYSIS - MERCURY LOW				**Matrix:** Water	
HS22081354-01	LH18/24-SP650_082422	24 Aug 2022 13:00			02 Sep 2022 13:50	1

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-182909** Units: **mg/L** Analysis Date: **02-Sep-2022 11:44**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832441** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.004113	0.0100								J
Antimony	0.00125	0.00500								U
Arsenic	0.00125	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.000449	0.00500								J
Cobalt	0.000500	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00125	0.00500								U
Magnesium	0.01445	0.200								J
Manganese	0.00250	0.00500								U
Nickel	0.00125	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00125	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-182909** Units: **mg/L** Analysis Date: **02-Sep-2022 11:46**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832442** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1023	0.0100	0.1	0	102	84 - 117				
Antimony	0.05029	0.00500	0.05	0	101	85 - 117				
Arsenic	0.05488	0.00500	0.05	0	110	84 - 116				
Barium	0.05272	0.00500	0.05	0	105	86 - 114				
Beryllium	0.05173	0.00200	0.05	0	103	83 - 121				
Cadmium	0.05446	0.00200	0.05	0	109	87 - 115				
Calcium	5.051	0.500	5	0	101	87 - 118				
Chromium	0.05143	0.00500	0.05	0	103	85 - 116				
Cobalt	0.05056	0.00500	0.05	0	101	86 - 115				
Iron	5.302	0.200	5	0	106	87 - 118				
Lead	0.04886	0.00500	0.05	0	97.7	88 - 115				
Magnesium	5.244	0.200	5	0	105	83 - 118				
Manganese	0.05363	0.00500	0.05	0	107	87 - 115				
Nickel	0.05379	0.00500	0.05	0	108	85 - 117				
Potassium	5.351	0.200	5	0	107	87 - 115				
Selenium	0.05541	0.00500	0.05	0	111	80 - 120				
Silver	0.05181	0.00500	0.05	0	104	85 - 116				
Sodium	5.253	0.200	5	0	105	85 - 117				
Thallium	0.05198	0.00200	0.05	0	104	82 - 116				
Vanadium	0.05344	0.00500	0.05	0	107	86 - 115				
Zinc	0.05562	0.00500	0.05	0	111	83 - 119				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS22081191-02MS** Units: **mg/L** Analysis Date: **02-Sep-2022 12:22**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832458** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	29.16	0.0100	0.1	31.03	-1870	84 - 117				SEO
Antimony	0.04768	0.00500	0.05	0.000089	95.2	85 - 117				
Arsenic	0.05584	0.00500	0.05	0.003586	105	84 - 116				
Barium	0.06335	0.00500	0.05	0.01351	99.7	86 - 114				
Beryllium	0.06476	0.00200	0.05	0.01298	104	83 - 121				
Cadmium	0.06112	0.00200	0.05	0.01168	98.9	87 - 115				
Calcium	509.5	0.500	5	537.3	-555	87 - 118				SEO
Chromium	0.08276	0.00500	0.05	0.03548	94.6	85 - 116				
Cobalt	0.2578	0.00500	0.05	0.2188	78.0	86 - 115				SO
Iron	5.365	0.200	5	0.3653	100.0	87 - 118				
Lead	0.05081	0.00500	0.05	0.00311	95.4	88 - 115				
Magnesium	256.2	0.200	5	264.1	-158	83 - 118				SEO
Manganese	3.805	0.00500	0.05	3.936	-263	87 - 115				SEO
Nickel	1.135	0.00500	0.05	1.136	-3.53	85 - 117				SO
Potassium	14.21	0.200	5	9.699	90.2	87 - 115				
Selenium	0.1279	0.00500	0.05	0.07832	99.1	80 - 120				
Silver	0.04498	0.00500	0.05	0.000095	89.8	85 - 116				
Sodium	202.7	0.200	5	207.3	-92.0	85 - 117				SEO
Thallium	0.05255	0.00200	0.05	0.000436	104	82 - 116				
Vanadium	0.05309	0.00500	0.05	0.000453	105	86 - 115				
Zinc	0.7351	0.00500	0.05	0.7267	16.8	83 - 119				SO

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS22081191-02MSD** Units: **mg/L** Analysis Date: **02-Sep-2022 12:24**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832459** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	29.16	0.0100	0.1	31.03	-1870	84 - 117	29.16	0.00172	20	SEO
Antimony	0.0484	0.00500	0.05	0.000089	96.6	85 - 117	0.04768	1.5	20	
Arsenic	0.05753	0.00500	0.05	0.003586	108	84 - 116	0.05584	2.99	20	
Barium	0.06466	0.00500	0.05	0.01351	102	86 - 114	0.06335	2.05	20	
Beryllium	0.06879	0.00200	0.05	0.01298	112	83 - 121	0.06476	6.03	20	
Cadmium	0.06235	0.00200	0.05	0.01168	101	87 - 115	0.06112	1.99	20	
Calcium	522	0.500	5	537.3	-306	87 - 118	509.5	2.42	20	SEO
Chromium	0.08472	0.00500	0.05	0.03548	98.5	85 - 116	0.08276	2.34	20	
Cobalt	0.2675	0.00500	0.05	0.2188	97.4	86 - 115	0.2578	3.68	20	O
Iron	5.532	0.200	5	0.3653	103	87 - 118	5.365	3.07	20	
Lead	0.05298	0.00500	0.05	0.00311	99.7	88 - 115	0.05081	4.19	20	
Magnesium	258	0.200	5	264.1	-121	83 - 118	256.2	0.729	20	SEO
Manganese	3.819	0.00500	0.05	3.936	-234	87 - 115	3.805	0.38	20	SEO
Nickel	1.155	0.00500	0.05	1.136	38.0	85 - 117	1.135	1.81	20	SO
Potassium	14.51	0.200	5	9.699	96.3	87 - 115	14.21	2.12	20	
Selenium	0.1261	0.00500	0.05	0.07832	95.5	80 - 120	0.1279	1.41	20	
Silver	0.04619	0.00500	0.05	0.000095	92.2	85 - 116	0.04498	2.66	20	
Sodium	207.8	0.200	5	207.3	8.60	85 - 117	202.7	2.45	20	SEO
Thallium	0.05578	0.00200	0.05	0.000436	111	82 - 116	0.05255	5.96	20	
Vanadium	0.05421	0.00500	0.05	0.000453	108	86 - 115	0.05309	2.09	20	
Zinc	0.7509	0.00500	0.05	0.7267	48.6	83 - 119	0.7351	2.14	20	SO

PDS Sample ID: **HS22081191-02PDS** Units: **mg/L** Analysis Date: **02-Sep-2022 15:47**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6833102** PrepDate: **26-Aug-2022** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	39.55	1.00	10	31.15	84.0	80 - 120				
Calcium	1478	50.0	1000	529.2	94.9	80 - 120				
Magnesium	1311	20.0	1000	290	102	80 - 120				
Manganese	14.01	0.500	10	3.942	101	80 - 120				
Sodium	1282	20.0	1000	231.3	105	80 - 120				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22081191-02PDS** Units: **mg/L** Analysis Date: **02-Sep-2022 12:26**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832460** PrepDate: **26-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1956	0.00500	0.2	0	97.8	80 - 120				
Arsenic	0.2064	0.00500	0.2	0.003586	101	80 - 120				
Barium	0.2102	0.00500	0.2	0.01351	98.3	80 - 120				
Cadmium	0.2036	0.00200	0.2	0.01168	95.9	80 - 120				
Chromium	0.2366	0.00500	0.2	0.03548	101	80 - 120				
Cobalt	0.3935	0.00500	0.2	0.2188	87.3	80 - 120				
Iron	19.73	0.200	20	0.3653	96.8	80 - 120				
Lead	0.2103	0.00500	0.2	0.00311	104	80 - 120				
Nickel	1.239	0.00500	0.2	1.136	51.4	80 - 120				SO
Potassium	28.14	0.200	20	9.699	92.2	80 - 120				
Selenium	0.2701	0.00500	0.2	0.07832	95.9	80 - 120				
Silver	0.1883	0.00500	0.2	0	94.1	80 - 120				
Thallium	0.2034	0.00200	0.2	0.000436	101	80 - 120				
Vanadium	0.2354	0.00500	0.2	0	118	80 - 120				
Zinc	0.9274	0.00500	0.2	0.7267	100	80 - 120				

SD Sample ID: **HS22081191-02SD** Units: **mg/L** Analysis Date: **02-Sep-2022 15:44**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6833101** PrepDate: **26-Aug-2022** DF: **500**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	29.92	5.00					31.15	3.96	10	
Calcium	542	250					529.2	2.41	10	
Magnesium	266.3	100					290	8.16	10	
Manganese	3.904	2.50					3.942	0.957	10	
Sodium	236.3	100					231.3	2.2	10	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 182909 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22081191-02SD** Units: **mg/L** Analysis Date: **02-Sep-2022 12:20**
Client ID: Run ID: **ICPMS07_416426** SeqNo: **6832457** PrepDate: **26-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	0.00625	0.0250					0.000089	0	10	U
Arsenic	0.003563	0.0250					0.003586	0	10	J
Barium	0.01356	0.0250					0.01351	0	10	J
Beryllium	0.0129	0.0100					0.01298	0.624	10	
Cadmium	0.01218	0.0100					0.01168	4.26	10	
Chromium	0.03627	0.0250					0.03548	2.23	10	
Cobalt	0.2022	0.0250					0.2188	7.58	10	
Iron	0.3378	1.00					0.3653	0	10	J
Lead	0.003058	0.0250					0.00311	0	10	J
Nickel	1.043	0.0250					1.136	8.22	10	
Potassium	9.93	1.00					9.699	2.38	10	
Selenium	0.07401	0.0250					0.07832	5.5	10	
Silver	0.00250	0.0250					0.000095	0	10	U
Thallium	0.00250	0.0100					0.000436	0	10	U
Vanadium	0.00625	0.0250					0.000453	0	10	U
Zinc	0.7521	0.0250					0.7267	3.5	10	

The following samples were analyzed in this batch: HS22081354-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: 183056 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:05**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835581** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.05561*	*0*	*0.08*	*0*	*69.5*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04848*	*0*	*0.08*	*0*	*60.6*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07154*	*0*	*0.08*	*0*	*89.4*	*40 - 140*				

LCS Sample ID: **LCS-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:23**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835582** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1025	0.010	0.08	0	128	40 - 140				
Surr: 2-Fluorobiphenyl	*0.06029*	*0*	*0.08*	*0*	*75.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04743*	*0*	*0.08*	*0*	*59.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05728*	*0*	*0.08*	*0*	*71.6*	*40 - 140*				

LCSD Sample ID: **LCSD-183056** Units: **ug/L** Analysis Date: **06-Sep-2022 12:41**
Client ID: Run ID: **SV-6_416566** SeqNo: **6835583** PrepDate: **31-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.09708	0.010	0.08	0	121	40 - 140	0.1025	5.46	20	
Surr: 2-Fluorobiphenyl	*0.07566*	*0*	*0.08*	*0*	*94.6*	*40 - 140*	*0.06029*	*22.6*	*20*	R
Surr: 4-Terphenyl-d14	*0.04514*	*0*	*0.08*	*0*	*56.4*	*40 - 140*	*0.04743*	*4.95*	*20*	
Surr: Nitrobenzene-d5	*0.0555*	*0*	*0.08*	*0*	*69.4*	*40 - 140*	*0.05728*	*3.17*	*20*	

The following samples were analyzed in this batch: HS22081354-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 12:33**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 12:33**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*46.97*	*1.0*	*50*	*0*	*93.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.46*	*1.0*	*50*	*0*	*96.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.33*	*1.0*	*50*	*0*	*94.7*	*80 - 119*				
Surr: Toluene-d8	*53.91*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 11:51**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.42	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	20.85	1.0	20	0	104	74 - 131				
1,1,2,2-Tetrachloroethane	19.34	1.0	20	0	96.7	71 - 121				
1,1,2-Trichloroethane	19.99	1.0	20	0	100.0	80 - 119				
1,1-Dichloroethane	20.73	1.0	20	0	104	77 - 125				
1,1-Dichloroethene	19.48	1.0	20	0	97.4	71 - 131				
1,1-Dichloropropene	20.85	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	19.01	1.0	20	0	95.0	69 - 129				
1,2,3-Trichloropropane	20.45	1.0	20	0	102	73 - 122				
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	69 - 130				
1,2,4-Trimethylbenzene	21.06	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	17.79	1.0	20	0	89.0	62 - 128				
1,2-Dibromoethane	19.69	1.0	20	0	98.5	77 - 121				
1,2-Dichlorobenzene	19.87	1.0	20	0	99.3	80 - 119				
1,2-Dichloroethane	20.28	1.0	20	0	101	73 - 128				
1,2-Dichloropropane	20.39	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	21.07	1.0	20	0	105	75 - 124				
1,3-Dichlorobenzene	20.57	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	19.55	1.0	20	0	97.7	80 - 119				
1,4-Dichlorobenzene	20.41	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	21.38	1.0	20	0	107	60 - 139				
2-Butanone	37.88	2.0	40	0	94.7	56 - 143				
2-Chlorotoluene	20.1	1.0	20	0	101	79 - 122				
2-Hexanone	38.04	2.0	40	0	95.1	57 - 139				
4-Chlorotoluene	20.7	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	21.72	1.0	20	0	109	77 - 127				
4-Methyl-2-pentanone	38.68	2.0	40	0	96.7	67 - 130				
Acetone	41.56	2.0	40	0	104	39 - 160				
Benzene	20.1	1.0	20	0	100	79 - 120				
Bromobenzene	20.41	1.0	20	0	102	80 - 120				
Bromochloromethane	19.58	1.0	20	0	97.9	78 - 123				
Bromodichloromethane	20.52	1.0	20	0	103	79 - 125				
Bromoform	19.07	1.0	20	0	95.3	66 - 130				
Bromomethane	20.94	1.0	20	0	105	53 - 141				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220826** Units: **ug/L** Analysis Date: **26-Aug-2022 11:51**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.3	2.0	40	0	106	64 - 133				
Carbon tetrachloride	19.97	1.0	20	0	99.9	72 - 136				
Chlorobenzene	20.8	1.0	20	0	104	82 - 118				
Chloroethane	19.29	1.0	20	0	96.5	60 - 138				
Chloroform	20.78	1.0	20	0	104	79 - 124				
Chloromethane	21.89	1.0	20	0	109	50 - 139				
cis-1,2-Dichloroethene	20.99	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	20.48	1.0	20	0	102	75 - 124				
Dibromochloromethane	20.01	1.0	20	0	100	74 - 126				
Dibromomethane	19.94	1.0	20	0	99.7	79 - 123				
Dichlorodifluoromethane	20.59	1.0	20	0	103	32 - 152				
Ethylbenzene	21.16	1.0	20	0	106	79 - 121				
Hexachlorobutadiene	20.31	1.0	20	0	102	66 - 134				
Isopropylbenzene	21.26	1.0	20	0	106	72 - 131				
m,p-Xylene	42.76	2.0	40	0	107	80 - 121				
Methylene chloride	21.59	2.0	20	0	108	74 - 124				
Naphthalene	18.26	1.0	20	0	91.3	61 - 128				
n-Butylbenzene	22.11	1.0	20	0	111	75 - 128				
n-Propylbenzene	21.91	1.0	20	0	110	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	21.53	1.0	20	0	108	77 - 126				
Styrene	20.58	1.0	20	0	103	78 - 123				
tert-Butylbenzene	21.38	1.0	20	0	107	78 - 124				
Tetrachloroethene	20.28	1.0	20	0	101	74 - 129				
Toluene	20.44	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	20.61	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.33	1.0	20	0	102	73 - 127				
Trichloroethene	20.42	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.6	1.0	20	0	98.0	65 - 141				
Vinyl chloride	19.38	1.0	20	0	96.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.29*	*1.0*	*50*	*0*	*109*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.24*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*53.38*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*51.17*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081409-03MS** Units: **ug/L** Analysis Date: **26-Aug-2022 15:22**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.87	1.0	20	0	99.3	78 - 124				
1,1,1-Trichloroethane	18.9	1.0	20	0	94.5	74 - 131				
1,1,2,2-Tetrachloroethane	19.34	1.0	20	0	96.7	71 - 121				
1,1,2-Trichloroethane	18.74	1.0	20	0	93.7	80 - 119				
1,1-Dichloroethane	17.95	1.0	20	0	89.7	77 - 125				
1,1-Dichloroethene	15.66	1.0	20	0	78.3	71 - 131				
1,1-Dichloropropene	19.98	1.0	20	0	99.9	78 - 125				
1,2,3-Trichlorobenzene	15.04	1.0	20	0	75.2	69 - 129				
1,2,3-Trichloropropane	18.89	1.0	20	0	94.5	73 - 122				
1,2,4-Trichlorobenzene	17.52	1.0	20	0	87.6	69 - 130				
1,2,4-Trimethylbenzene	21.12	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.74	1.0	20	0	93.7	62 - 128				
1,2-Dibromoethane	18.44	1.0	20	0	92.2	77 - 121				
1,2-Dichlorobenzene	20.07	1.0	20	0	100	80 - 119				
1,2-Dichloroethane	18.44	1.0	20	0	92.2	73 - 128				
1,2-Dichloropropane	18.35	1.0	20	0	91.7	78 - 122				
1,3,5-Trimethylbenzene	21.22	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.46	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	18.84	1.0	20	0	94.2	80 - 119				
1,4-Dichlorobenzene	20.73	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	18.71	1.0	20	0	93.6	60 - 139				
2-Butanone	28.59	2.0	40	0	71.5	56 - 143				
2-Chlorotoluene	20.49	1.0	20	0	102	79 - 122				
2-Hexanone	37.99	2.0	40	0	95.0	57 - 139				
4-Chlorotoluene	20.72	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	22.23	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	39.45	2.0	40	0	98.6	67 - 130				
Acetone	25.28	2.0	40	0	63.2	39 - 160				
Benzene	18.44	1.0	20	0	92.2	79 - 120				
Bromobenzene	20.22	1.0	20	0	101	80 - 120				
Bromochloromethane	16.34	1.0	20	0	81.7	78 - 123				
Bromodichloromethane	18.72	1.0	20	0	93.6	79 - 125				
Bromoform	18.27	1.0	20	0	91.4	66 - 130				
Bromomethane	12.22	1.0	20	0	61.1	53 - 141				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081409-03MS** Units: **ug/L** Analysis Date: **26-Aug-2022 15:22**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822662** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	28.82	2.0	40	0	72.1	64 - 133				
Carbon tetrachloride	18.87	1.0	20	0	94.3	72 - 136				
Chlorobenzene	20.22	1.0	20	0	101	82 - 118				
Chloroethane	13.34	1.0	20	0	66.7	60 - 138				
Chloroform	18.13	1.0	20	0	90.6	79 - 124				
Chloromethane	7.448	1.0	20	0	37.2	50 - 139				S
cis-1,2-Dichloroethene	18.25	1.0	20	0	91.3	78 - 123				
cis-1,3-Dichloropropene	18.62	1.0	20	0	93.1	75 - 124				
Dibromochloromethane	19.05	1.0	20	0	95.2	74 - 126				
Dibromomethane	18.31	1.0	20	0	91.6	79 - 123				
Dichlorodifluoromethane	2.494	1.0	20	0	12.5	32 - 152				S
Ethylbenzene	20.37	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	20.9	1.0	20	0	105	66 - 134				
Isopropylbenzene	21.41	1.0	20	0	107	72 - 131				
m,p-Xylene	41.31	2.0	40	0	103	80 - 121				
Methylene chloride	16.82	2.0	20	0	84.1	74 - 124				
Naphthalene	13.39	1.0	20	0	67.0	61 - 128				
n-Butylbenzene	22.53	1.0	20	0	113	75 - 128				
n-Propylbenzene	22.27	1.0	20	0	111	76 - 126				
o-Xylene	20.01	1.0	20	0	100	78 - 122				
sec-Butylbenzene	22.13	1.0	20	0	111	77 - 126				
Styrene	20.01	1.0	20	0	100	78 - 123				
tert-Butylbenzene	21.89	1.0	20	0	109	78 - 124				
Tetrachloroethene	20.01	1.0	20	0	100	74 - 129				
Toluene	19.66	1.0	20	0	98.3	80 - 121				
trans-1,2-Dichloroethene	17.32	1.0	20	0	86.6	75 - 124				
trans-1,3-Dichloropropene	18.9	1.0	20	0	94.5	73 - 127				
Trichloroethene	19.36	1.0	20	0	96.8	79 - 123				
Trichlorofluoromethane	14.93	1.0	20	0	74.7	65 - 141				
Vinyl chloride	9.461	1.0	20	0	47.3	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*48.92*	*1.0*	*50*	*0*	*97.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.78*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*49.15*	*1.0*	*50*	*0*	*98.3*	*80 - 119*				
Surr: Toluene-d8	*52.55*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081148-19MS** Units: **ug/L** Analysis Date: **26-Aug-2022 16:04**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822664** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.24	1.0	20	0	96.2	78 - 124				
1,1,1-Trichloroethane	18.43	1.0	20	0	92.1	74 - 131				
1,1,2,2-Tetrachloroethane	18.76	1.0	20	0	93.8	71 - 121				
1,1,2-Trichloroethane	18.41	1.0	20	0	92.0	80 - 119				
1,1-Dichloroethane	16.8	1.0	20	0	84.0	77 - 125				
1,1-Dichloroethene	15.21	1.0	20	0	76.0	71 - 131				
1,1-Dichloropropene	18.98	1.0	20	0	94.9	78 - 125				
1,2,3-Trichlorobenzene	20.89	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	18.45	1.0	20	0	92.2	73 - 122				
1,2,4-Trichlorobenzene	21.33	1.0	20	0	107	69 - 130				
1,2,4-Trimethylbenzene	21.11	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.41	1.0	20	0	92.0	62 - 128				
1,2-Dibromoethane	18.11	1.0	20	0	90.5	77 - 121				
1,2-Dichlorobenzene	20.51	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	17.42	1.0	20	0	87.1	73 - 128				
1,2-Dichloropropane	17.72	1.0	20	0	88.6	78 - 122				
1,3,5-Trimethylbenzene	20.85	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	18.33	1.0	20	0	91.7	80 - 119				
1,4-Dichlorobenzene	20.11	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	17.81	1.0	20	0	89.0	60 - 139				
2-Butanone	29.9	2.0	40	0	74.7	56 - 143				
2-Chlorotoluene	19.75	1.0	20	0	98.7	79 - 122				
2-Hexanone	38.67	2.0	40	0	96.7	57 - 139				
4-Chlorotoluene	20.15	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	22.11	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	39.22	2.0	40	0	98.0	67 - 130				
Acetone	23.51	2.0	40	0	58.8	39 - 160				
Benzene	17.65	1.0	20	0	88.3	79 - 120				
Bromobenzene	19.61	1.0	20	0	98.1	80 - 120				
Bromochloromethane	15.94	1.0	20	0	79.7	78 - 123				
Bromodichloromethane	18.2	1.0	20	0	91.0	79 - 125				
Bromoform	17.76	1.0	20	0	88.8	66 - 130				
Bromomethane	10.02	1.0	20	0	50.1	53 - 141				S

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22081148-19MS** Units: **ug/L** Analysis Date: **26-Aug-2022 16:04**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822664** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	28.28	2.0	40	0	70.7	64 - 133				
Carbon tetrachloride	18.16	1.0	20	0	90.8	72 - 136				
Chlorobenzene	19.72	1.0	20	0	98.6	82 - 118				
Chloroethane	11.86	1.0	20	0	59.3	60 - 138				S
Chloroform	17.27	1.0	20	0	86.4	79 - 124				
Chloromethane	7.451	1.0	20	0	37.3	50 - 139				S
cis-1,2-Dichloroethene	17.49	1.0	20	0	87.5	78 - 123				
cis-1,3-Dichloropropene	18.05	1.0	20	0	90.2	75 - 124				
Dibromochloromethane	18.48	1.0	20	0	92.4	74 - 126				
Dibromomethane	17.29	1.0	20	0	86.4	79 - 123				
Dichlorodifluoromethane	2.44	1.0	20	0	12.2	32 - 152				S
Ethylbenzene	20.25	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	22.03	1.0	20	0	110	66 - 134				
Isopropylbenzene	21.37	1.0	20	0	107	72 - 131				
m,p-Xylene	40.98	2.0	40	0	102	80 - 121				
Methylene chloride	16.07	2.0	20	0	80.3	74 - 124				
Naphthalene	21.26	1.0	20	0	106	61 - 128				
n-Butylbenzene	23.4	1.0	20	0	117	75 - 128				
n-Propylbenzene	21.85	1.0	20	0	109	76 - 126				
o-Xylene	19.92	1.0	20	0	99.6	78 - 122				
sec-Butylbenzene	22.62	1.0	20	0	113	77 - 126				
Styrene	20.12	1.0	20	0	101	78 - 123				
tert-Butylbenzene	21.98	1.0	20	0	110	78 - 124				
Tetrachloroethene	19.44	1.0	20	0	97.2	74 - 129				
Toluene	19.07	1.0	20	0	95.3	80 - 121				
trans-1,2-Dichloroethene	16.56	1.0	20	0	82.8	75 - 124				
trans-1,3-Dichloropropene	17.96	1.0	20	0	89.8	73 - 127				
Trichloroethene	18.18	1.0	20	0	90.9	79 - 123				
Trichlorofluoromethane	14.89	1.0	20	0	74.4	65 - 141				
Vinyl chloride	9.04	1.0	20	0	45.2	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*48.39*	*1.0*	*50*	*0*	*96.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.09*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*48.33*	*1.0*	*50*	*0*	*96.7*	*80 - 119*				
Surr: Toluene-d8	*52.78*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081409-03MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 15:43**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822663** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.15	1.0	20	0	95.7	78 - 124	19.87	3.69	20	
1,1,1-Trichloroethane	17.82	1.0	20	0	89.1	74 - 131	18.9	5.88	20	
1,1,2,2-Tetrachloroethane	19.4	1.0	20	0	97.0	71 - 121	19.34	0.311	20	
1,1,2-Trichloroethane	19.16	1.0	20	0	95.8	80 - 119	18.74	2.2	20	
1,1-Dichloroethane	17.29	1.0	20	0	86.4	77 - 125	17.95	3.72	20	
1,1-Dichloroethene	15.02	1.0	20	0	75.1	71 - 131	15.66	4.2	20	
1,1-Dichloropropene	18.69	1.0	20	0	93.4	78 - 125	19.98	6.67	20	
1,2,3-Trichlorobenzene	19.1	1.0	20	0	95.5	69 - 129	15.04	23.7	20	R
1,2,3-Trichloropropane	19.09	1.0	20	0	95.5	73 - 122	18.89	1.04	20	
1,2,4-Trichlorobenzene	19.68	1.0	20	0	98.4	69 - 130	17.52	11.6	20	
1,2,4-Trimethylbenzene	20.24	1.0	20	0	101	76 - 124	21.12	4.28	20	
1,2-Dibromo-3-chloropropane	19.27	1.0	20	0	96.4	62 - 128	18.74	2.79	20	
1,2-Dibromoethane	18.3	1.0	20	0	91.5	77 - 121	18.44	0.765	20	
1,2-Dichlorobenzene	20.2	1.0	20	0	101	80 - 119	20.07	0.645	20	
1,2-Dichloroethane	17.74	1.0	20	0	88.7	73 - 128	18.44	3.91	20	
1,2-Dichloropropane	17.93	1.0	20	0	89.6	78 - 122	18.35	2.31	20	
1,3,5-Trimethylbenzene	20.36	1.0	20	0	102	75 - 124	21.22	4.16	20	
1,3-Dichlorobenzene	20.19	1.0	20	0	101	80 - 119	20.46	1.29	20	
1,3-Dichloropropane	18.72	1.0	20	0	93.6	80 - 119	18.84	0.61	20	
1,4-Dichlorobenzene	19.99	1.0	20	0	99.9	79 - 118	20.73	3.65	20	
2,2-Dichloropropane	17.8	1.0	20	0	89.0	60 - 139	18.71	4.97	20	
2-Butanone	30.44	2.0	40	0	76.1	56 - 143	28.59	6.27	20	
2-Chlorotoluene	19.45	1.0	20	0	97.2	79 - 122	20.49	5.21	20	
2-Hexanone	38.81	2.0	40	0	97.0	57 - 139	37.99	2.14	20	
4-Chlorotoluene	20.16	1.0	20	0	101	78 - 122	20.72	2.73	20	
4-Isopropyltoluene	21.29	1.0	20	0	106	77 - 127	22.23	4.31	20	
4-Methyl-2-pentanone	39.35	2.0	40	0	98.4	67 - 130	39.45	0.24	20	
Acetone	26.31	2.0	40	0	65.8	39 - 160	25.28	3.97	20	
Benzene	17.73	1.0	20	0	88.6	79 - 120	18.44	3.96	20	
Bromobenzene	19.53	1.0	20	0	97.6	80 - 120	20.22	3.49	20	
Bromochloromethane	16.11	1.0	20	0	80.6	78 - 123	16.34	1.42	20	
Bromodichloromethane	18.59	1.0	20	0	92.9	79 - 125	18.72	0.709	20	
Bromoform	18.25	1.0	20	0	91.2	66 - 130	18.27	0.151	20	
Bromomethane	11.16	1.0	20	0	55.8	53 - 141	12.22	9.08	20	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081409-03MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 15:43**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822663** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	27.33	2.0	40	0	68.3	64 - 133	28.82	5.31	20	
Carbon tetrachloride	17.81	1.0	20	0	89.0	72 - 136	18.87	5.77	20	
Chlorobenzene	19.23	1.0	20	0	96.2	82 - 118	20.22	4.99	20	
Chloroethane	13.41	1.0	20	0	67.1	60 - 138	13.34	0.556	20	
Chloroform	17.51	1.0	20	0	87.6	79 - 124	18.13	3.46	20	
Chloromethane	7.22	1.0	20	0	36.1	50 - 139	7.448	3.11	20	S
cis-1,2-Dichloroethene	17.22	1.0	20	0	86.1	78 - 123	18.25	5.84	20	
cis-1,3-Dichloropropene	18.2	1.0	20	0	91.0	75 - 124	18.62	2.24	20	
Dibromochloromethane	18.85	1.0	20	0	94.3	74 - 126	19.05	1.04	20	
Dibromomethane	17.73	1.0	20	0	88.6	79 - 123	18.31	3.23	20	
Dichlorodifluoromethane	2.385	1.0	20	0	11.9	32 - 152	2.494	4.46	20	S
Ethylbenzene	19.36	1.0	20	0	96.8	79 - 121	20.37	5.13	20	
Hexachlorobutadiene	20.37	1.0	20	0	102	66 - 134	20.9	2.6	20	
Isopropylbenzene	20.27	1.0	20	0	101	72 - 131	21.41	5.5	20	
m,p-Xylene	39.38	2.0	40	0	98.5	80 - 121	41.31	4.78	20	
Methylene chloride	15.92	2.0	20	0	79.6	74 - 124	16.82	5.49	20	
Naphthalene	17.4	1.0	20	0	87.0	61 - 128	13.39	26	20	R
n-Butylbenzene	21.55	1.0	20	0	108	75 - 128	22.53	4.44	20	
n-Propylbenzene	21.04	1.0	20	0	105	76 - 126	22.27	5.7	20	
o-Xylene	19.27	1.0	20	0	96.3	78 - 122	20.01	3.79	20	
sec-Butylbenzene	21.19	1.0	20	0	106	77 - 126	22.13	4.35	20	
Styrene	19.33	1.0	20	0	96.6	78 - 123	20.01	3.47	20	
tert-Butylbenzene	21.03	1.0	20	0	105	78 - 124	21.89	4.04	20	
Tetrachloroethene	18.77	1.0	20	0	93.8	74 - 129	20.01	6.41	20	
Toluene	18.64	1.0	20	0	93.2	80 - 121	19.66	5.31	20	
trans-1,2-Dichloroethene	16.6	1.0	20	0	83.0	75 - 124	17.32	4.26	20	
trans-1,3-Dichloropropene	18.5	1.0	20	0	92.5	73 - 127	18.9	2.14	20	
Trichloroethene	18.22	1.0	20	0	91.1	79 - 123	19.36	6.05	20	
Trichlorofluoromethane	14.47	1.0	20	0	72.4	65 - 141	14.93	3.14	20	
Vinyl chloride	8.624	1.0	20	0	43.1	58 - 137	9.461	9.25	20	S
Surr: 1,2-Dichloroethane-d4	*48.28*	*1.0*	*50*	*0*	*96.6*	*81 - 118*	*48.92*	*1.31*	*20*	
Surr: 4-Bromofluorobenzene	*50.27*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.78*	*1.01*	*20*	
Surr: Dibromofluoromethane	*47.9*	*1.0*	*50*	*0*	*95.8*	*80 - 119*	*49.15*	*2.56*	*20*	
Surr: Toluene-d8	*51.94*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.55*	*1.17*	*20*	

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081148-19MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 16:25**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822665** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.91	1.0	20	0	99.5	78 - 124	19.24	3.39	20	
1,1,1-Trichloroethane	18.57	1.0	20	0	92.8	74 - 131	18.43	0.736	20	
1,1,2,2-Tetrachloroethane	20.71	1.0	20	0	104	71 - 121	18.76	9.87	20	
1,1,2-Trichloroethane	19.46	1.0	20	0	97.3	80 - 119	18.41	5.59	20	
1,1-Dichloroethane	17.44	1.0	20	0	87.2	77 - 125	16.8	3.7	20	
1,1-Dichloroethene	15.51	1.0	20	0	77.5	71 - 131	15.21	1.93	20	
1,1-Dichloropropene	19.15	1.0	20	0	95.8	78 - 125	18.98	0.913	20	
1,2,3-Trichlorobenzene	23.89	1.0	20	0	119	69 - 129	20.89	13.4	20	
1,2,3-Trichloropropane	20.38	1.0	20	0	102	73 - 122	18.45	9.96	20	
1,2,4-Trichlorobenzene	22.72	1.0	20	0	114	69 - 130	21.33	6.34	20	
1,2,4-Trimethylbenzene	22.12	1.0	20	0	111	76 - 124	21.11	4.67	20	
1,2-Dibromo-3-chloropropane	21.71	1.0	20	0	109	62 - 128	18.41	16.4	20	
1,2-Dibromoethane	18.99	1.0	20	0	94.9	77 - 121	18.11	4.72	20	
1,2-Dichlorobenzene	21.82	1.0	20	0	109	80 - 119	20.51	6.2	20	
1,2-Dichloroethane	17.61	1.0	20	0	88.1	73 - 128	17.42	1.08	20	
1,2-Dichloropropane	18.24	1.0	20	0	91.2	78 - 122	17.72	2.88	20	
1,3,5-Trimethylbenzene	22.07	1.0	20	0	110	75 - 124	20.85	5.68	20	
1,3-Dichlorobenzene	21.77	1.0	20	0	109	80 - 119	20.33	6.82	20	
1,3-Dichloropropane	18.86	1.0	20	0	94.3	80 - 119	18.33	2.84	20	
1,4-Dichlorobenzene	22.09	1.0	20	0	110	79 - 118	20.11	9.41	20	
2,2-Dichloropropane	18.41	1.0	20	0	92.1	60 - 139	17.81	3.36	20	
2-Butanone	29.41	2.0	40	0	73.5	56 - 143	29.9	1.66	20	
2-Chlorotoluene	20.94	1.0	20	0	105	79 - 122	19.75	5.85	20	
2-Hexanone	38.57	2.0	40	0	96.4	57 - 139	38.67	0.258	20	
4-Chlorotoluene	21.8	1.0	20	0	109	78 - 122	20.15	7.87	20	
4-Isopropyltoluene	23.48	1.0	20	0	117	77 - 127	22.11	6.02	20	
4-Methyl-2-pentanone	40.73	2.0	40	0	102	67 - 130	39.22	3.79	20	
Acetone	25.19	2.0	40	0	63.0	39 - 160	23.51	6.92	20	
Benzene	17.85	1.0	20	0	89.3	79 - 120	17.65	1.13	20	
Bromobenzene	21.04	1.0	20	0	105	80 - 120	19.61	7.04	20	
Bromochloromethane	16.67	1.0	20	0	83.3	78 - 123	15.94	4.45	20	
Bromodichloromethane	18.67	1.0	20	0	93.3	79 - 125	18.2	2.53	20	
Bromoform	18.65	1.0	20	0	93.3	66 - 130	17.76	4.93	20	
Bromomethane	9.864	1.0	20	0	49.3	53 - 141	10.02	1.58	20	S

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R415980 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22081148-19MSD** Units: **ug/L** Analysis Date: **26-Aug-2022 16:25**
Client ID: Run ID: **VOA6_415980** SeqNo: **6822665** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	28.39	2.0	40	0	71.0	64 - 133	28.28	0.406	20	
Carbon tetrachloride	18.45	1.0	20	0	92.2	72 - 136	18.16	1.56	20	
Chlorobenzene	20.19	1.0	20	0	101	82 - 118	19.72	2.36	20	
Chloroethane	11.48	1.0	20	0	57.4	60 - 138	11.86	3.32	20	S
Chloroform	17.83	1.0	20	0	89.2	79 - 124	17.27	3.19	20	
Chloromethane	7.091	1.0	20	0	35.5	50 - 139	7.451	4.95	20	S
cis-1,2-Dichloroethene	17.57	1.0	20	0	87.8	78 - 123	17.49	0.424	20	
cis-1,3-Dichloropropene	18.19	1.0	20	0	90.9	75 - 124	18.05	0.753	20	
Dibromochloromethane	19.17	1.0	20	0	95.8	74 - 126	18.48	3.68	20	
Dibromomethane	17.97	1.0	20	0	89.8	79 - 123	17.29	3.87	20	
Dichlorodifluoromethane	2.485	1.0	20	0	12.4	32 - 152	2.44	1.82	20	S
Ethylbenzene	20.34	1.0	20	0	102	79 - 121	20.25	0.432	20	
Hexachlorobutadiene	23.05	1.0	20	0	115	66 - 134	22.03	4.55	20	
Isopropylbenzene	21.46	1.0	20	0	107	72 - 131	21.37	0.395	20	
m,p-Xylene	41.63	2.0	40	0	104	80 - 121	40.98	1.59	20	
Methylene chloride	16.23	2.0	20	0	81.2	74 - 124	16.07	1.04	20	
Naphthalene	23.48	1.0	20	0	117	61 - 128	21.26	9.94	20	
n-Butylbenzene	24.26	1.0	20	0	121	75 - 128	23.4	3.61	20	
n-Propylbenzene	23.17	1.0	20	0	116	76 - 126	21.85	5.86	20	
o-Xylene	20.24	1.0	20	0	101	78 - 122	19.92	1.6	20	
sec-Butylbenzene	23.97	1.0	20	0	120	77 - 126	22.62	5.76	20	
Styrene	20.31	1.0	20	0	102	78 - 123	20.12	0.966	20	
tert-Butylbenzene	23.36	1.0	20	0	117	78 - 124	21.98	6.06	20	
Tetrachloroethene	19.91	1.0	20	0	99.5	74 - 129	19.44	2.37	20	
Toluene	19.52	1.0	20	0	97.6	80 - 121	19.07	2.36	20	
trans-1,2-Dichloroethene	16.89	1.0	20	0	84.4	75 - 124	16.56	1.93	20	
trans-1,3-Dichloropropene	18.26	1.0	20	0	91.3	73 - 127	17.96	1.65	20	
Trichloroethene	18.63	1.0	20	0	93.2	79 - 123	18.18	2.45	20	
Trichlorofluoromethane	14.96	1.0	20	0	74.8	65 - 141	14.89	0.467	20	
Vinyl chloride	9.151	1.0	20	0	45.8	58 - 137	9.04	1.23	20	S
Surr: 1,2-Dichloroethane-d4	*48.58*	*1.0*	*50*	*0*	*97.2*	*81 - 118*	*48.39*	*0.396*	*20*	
Surr: 4-Bromofluorobenzene	*50.2*	*1.0*	*50*	*0*	*100*	*85 - 114*	*51.09*	*1.76*	*20*	
Surr: Dibromofluoromethane	*47.84*	*1.0*	*50*	*0*	*95.7*	*80 - 119*	*48.33*	*1*	*20*	
Surr: Toluene-d8	*52.72*	*1.0*	*50*	*0*	*105*	*89 - 112*	*52.78*	*0.12*	*20*	

ALS Houston, US Date: 06-Sep-22

Client:	Bhate Environmental Associates, Inc.
Project:	Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder:	HS22081354

QC BATCH REPORT

Batch ID:	**R415980 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22081354-01 HS22081354-02

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R416096 (0) **Instrument: WetChem_HS** **Method: CHEMICAL OXYGEN DEMAND BY E410.4, REV 2.0, 1993**

MBLK Sample ID: **MBLK-R416096** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825372** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	15.0	15.0								U

LCS Sample ID: **LCS-R416096** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825371** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	99	15.0	100	0	99.0	85 - 115				

MS Sample ID: **HS22081262-01MS** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825374** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	90	15.0	50	42	96.0	80 - 120				

MSD Sample ID: **HS22081262-01MSD** Units: **mg/L** Analysis Date: **29-Aug-2022 16:00**
Client ID: Run ID: **WetChem_HS_416096** SeqNo: **6825373** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	90	15.0	50	42	96.0	80 - 120	90	0	20	

The following samples were analyzed in this batch: HS22081354-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R416165 (0) **Instrument: Balance1** **Method: OIL & GREASE (HEM) BY E1664A**

MBLK Sample ID: **WBLKW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826895** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	1.00	2.00								U

LCS Sample ID: **WLCSW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826897** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	37	2.00	40	0	92.5	78 - 114				

LCSD Sample ID: **WLCSDW-083022** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826896** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	38.6	2.00	40	0	96.5	78 - 114	37	4.23	18	

MS Sample ID: **HS22081369-01MS** Units: **mg/L** Analysis Date: **30-Aug-2022 14:30**
Client ID: Run ID: **Balance1_416165** SeqNo: **6826894** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	38.5	2.00	40	2.4	90.2	78 - 114				

The following samples were analyzed in this batch: HS22081354-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: HS22081354

QC BATCH REPORT

Batch ID: R416314 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **31-Aug-2022 12:36**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830037** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **31-Aug-2022 12:41**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830038** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.17	0.500	20	0	95.9	80 - 120				
Sulfate	19.47	0.500	20	0	97.4	80 - 120				

MS Sample ID: **HS22081664-07MS** Units: **mg/L** Analysis Date: **31-Aug-2022 13:08**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830039** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.81	0.500	10	21.56	103	80 - 120				
Sulfate	20.84	0.500	10	10.12	107	80 - 120				

MSD Sample ID: **HS22081664-07MSD** Units: **mg/L** Analysis Date: **31-Aug-2022 13:13**
Client ID: Run ID: **ICS-Integrion_416314** SeqNo: **6830040** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.69	0.500	10	21.56	101	80 - 120	31.81	0.378	20	
Sulfate	20.77	0.500	10	10.12	106	80 - 120	20.84	0.3	20	

The following samples were analyzed in this batch: HS22081354-01

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Groundwater Treatment Plant Quarterly Effluent Samples
WorkOrder: **HS22081354**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 06-Sep-22

Sample Receipt Checklist

Work Order ID: HS22081354 **Date/Time Received:** **25-Aug-2022 09:30**

Client Name: Bhate Environmental **Received by:** **Nilesh D. Ranchod**

Completed By: */S/ Nilesh D. Ranchod* (eSignature) 25-Aug-2022 11:15 (Date/Time) **Reviewed by:** */S/ Ragen Giga* (eSignature) 29-Aug-2022 12:45 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	1.9C/1.7C U/C	IR31
Cooler(s)/Kit(s):	47764	
Date/Time sample(s) sent to storage:	08/25/2022 11:30	

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

HS22081354

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, Tx, 77099 ATTN: Dane Wacasey
1

Bhate Environmental Associates, Inc.
oundwater Treatment Plant Quarterly Effluent Sampl

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT QUARTERLY EFFLUENT SAMPLES**	
Prepared By: Scott Beesinger	P. O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	ROD Volatiles	Total Metals	Oil & Grease	Chemical Oxygen Demand	Chloride & Sulfate	1,4 - DIOXANE	PERCHLORATE				Remarks (Preservatives, etc.)	Lab I.D.#
															Analysis	
LH18/24-SP650_082422	Water	08/24/22 / 13:00		4	3		1								HCL	
LH18/24-SP650_082422	Water	08/24/22 / 13:00		1		1									HNO3	
LH18/24-SP650_082422	Water	08/24/22 / 13:00		2					1	1					NONE	
LH18/24-SP650_082422	Water	08/24/22 / 13:00		1				1							H2SO4	
LH18/24-SP650_082422_AIX	Water	08/24/22 / 13:00		1							1				NONE	
Trip Blank	Water	08/24/22		2	2										HCL	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
	08/24/22	13:30									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

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

47764

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

U7764

CUSTODY SEAL
Date: 8/23/22 Time: 1330
Name: Scott Beesinger
Company: BHP

Seal Broken By:
Date:

U7764

Must Deliver Next Business Day
Time and Tempature Sensitive!

U7764

ORIGIN ID:SGRA (903) 930-0133
SCOTT BEESINGER
APTIM ENVIRONMENTAL & INFRASTRUCTURE
1203-B EAST GRAND AVE
PMB 202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 28JAN21
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3408
DIMS: 19x16x13 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 630-5656
REF: LHAAP-16-B076391-DW

RMA:

FedEx Express

9473 0839 9407

PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

4138074 746A/2022 CCGA 5F0C7/T391/QORA

August 31, 2022 Service Request No:E2200845

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22081354

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2022
For your reference, these analyses have been assigned our service request number **E2200845.**

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

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 Environmental – US	**Service Request No.:**	E2200845
Project:	HS22081354	**Date Received:**	08/29/22
Sample Matrix:	Water		

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

One sample was received for analysis at ALS Environmental in Houston on 08/29/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200373-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200845
Project: HS22081354

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200845-001	LH18/24-SP650_082422	8/24/2022	1300

Service Request Summary

Folder #: **E2200845**
Client Name: ALS Environmental - US
Project Name: HS22081354
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081354
EDD: BASIC_WQC_CASNo_LOD

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200845-001	LH18/24-SP650_082422	Water	08/24/22 1300	**IV**

Service Request Summary

Folder #: **E2200845**
Client Name: ALS Environmental - US
Project Name: HS22081354
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/25/22
Internal Due Date: 9/1/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081354
EDD: BASIC_WQC_CASNo_LOD

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 10D
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	iv dUE 9/9

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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: Colorado **COC ID:** 19585

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081354
TSR:	Sonia West

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS22081354-01**	**LH18/24-SP650_082422**	**Water**	**24 Aug 2022 13:00**
	SUB_Perch-6850			01 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: LOREYS Date/Time: 8/24/22 1110

Cooler ID(s): Temperature(s):

Page 1 of 1

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID 1291

Date/Time Received: 8/29/22 Initials: CG Date/Time Logged in: 8/29/22 Initials CG

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 If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

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		8/29/22	1110	CG	3.0°	☒
						☐
						☐
						☐

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

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#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200824-001	MW3_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200824-002	18CPTMW22SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200824-003	MW20_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200824-004	18CPTMW22DW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2200824-005	18CPTMW22R_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2200824-006	18CPTMW26SW_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2200824-007	18CPTMW07_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2200824-008	18CPTMW24_081822	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2200828-001	18CPTMW14_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2200828-002	18CPTMW12SW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2200828-003	18CPTMW12SW_081922_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2200828-004	18CPTMW12DW_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2200828-005	MW7_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2200828-006	18CPTMW16_081922	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2200844-001	LH18/24-SP650_082422_AIX	.01	6850/ClO4 DOD			Water	10mL	
16	E2200844-002	LH18/24-SP650_082422_BIX	.01	6850/ClO4 DOD			Water	10mL	
17	E2200845-001	LH18/24-SP650_082422	.01	6850/ClO4 DOD			Water	10mL	
18	E2200846-001	LH18/24-SP140_082422	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2200373-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200373-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200373-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200373-02 1.00µL EQ2200373-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200824-001	100.00µL	E2200824-002	100.00µL	E2200824-003	100.00µL	E2200824-004	100.00µL	E2200824-005	100.00µL	E2200824-006	100.00µL
E2200824-007	100.00µL	E2200824-008	100.00µL	E2200828-001	100.00µL	E2200828-002	100.00µL	E2200828-003	100.00µL	E2200828-004	100.00µL
E2200828-005	100.00µL	E2200828-006	100.00µL	E2200844-001	100.00µL	E2200844-002	100.00µL	E2200845-001	100.00µL	E2200846-001	100.00µL
EQ2200373-01	100.00µL	EQ2200373-02	100.00µL	EQ2200373-03	100.00µL						

Preparation Information Benchsheet

Prep Run#: 405336 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/26/22 14:00

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/26/22 14:00
Finished: 8/26/22 14:35
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/26/22

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:**	E2200845
Project:	HS22081354	**Date Collected:**	8/24/22 1300
Sample Matrix:	Water	**Date Received:**	8/25/22
Sample Name:	LH18/24-SP650_082422	**Units:**	µg/L
Lab Code:	E2200845-001	**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	**0.672**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 11:10	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200845
Project:	HS22081354	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200373-01	**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	8/26/22	8/31/22 10:28	405336	775985	

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: HS22081354
Sample Matrix: Water

Service Request: E2200845
Date Analyzed: 8/31/22

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: 405336

	Lab Control Sample EQ2200373-02			Duplicate Lab Control Sample EQ2200373-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0945	0.100	95	0.103	0.100	103	84 - 119	9	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:**	E2200845
Project:	HS22081354	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-02	**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	**0.0945**	J	0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:36	405336	775985	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200845
Project:	HS22081354	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200373-03	**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	**0.103**		0.100	0.0500	0.0250	1	8/26/22	8/31/22 10:44	405336	775985	

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September 02, 2022 **Analytical Report for Service Request No:** K2210049

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS22081354

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 01, 2022
For your reference, these analyses have been assigned our service request number **K2210049.**

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 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Luke Rahn
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.
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.
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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www.alsglobal.com

1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ALS Environmental - US
Project: HS22081354
Sample Matrix: Water

Service Request: K2210049
Date Received: 09/01/2022

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:

One water sample was received for analysis at ALS Environmental on 09/01/2022. 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.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/02/2022

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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K2310049

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: **Colorado** **COC ID:** **19652**

SUBCONTRACT TO:

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

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081354
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22081354-01**	**LH18/24-SP650_082422**	**Water**	**24 Aug 2022 13:00**
	HG_W_DOD - Report to LOD			01 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above. (EDDGenericLessThan)

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: AUG 29 2022 18:00

Received By: _____ Date/Time: 8/29/22 1010

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

PM LR

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K22 10049

Received: 9/1/22 Opened: 9/1/22 By: ZH Unloaded: 9/1/22 By: ZH

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? 1 front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

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
	21.4	IR2	19652			578919974353	

4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column above:
   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*

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
15. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Under filled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

RUSH

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

Notes, Discrepancies, Resolutions: Temp NOT an issue, Samples for metals analysis.

1/13/22 *Page* ____ *of* ____

Metals

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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:**	K2210049
Project:	HS22081354	**Date Collected:**	08/24/22 13:00
Sample Matrix:	Water	**Date Received:**	09/01/22 10:10
Sample Name:	LH18/24-SP650_082422	**Basis:**	NA
Lab Code:	K2210049-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/02/22 12:22	09/01/22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2210049
Project:	HS22081354	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2214913-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/02/22 12:00	09/01/22	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22081354
Sample Matrix: Water

Service Request: K2210049
Date Analyzed: 09/02/22

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2214913-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	4.84	5.00	97	82-119

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354
Sample Matrix: Water

Metals

Prep Method: Method **Extraction Lot:** 405732
Analytical Method: 7470A **Extraction Date:** 09/01/22 14:07

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
LH18/24-SP650_082422	K2210049-001	8/24/22	9/1/22	10.0000 mL	10 mL	
Method Blank	KQ2214913-01MB	NA	NA	10.0000 mL	10 mL	
Lab Control Sample	KQ2214913-02LCS	NA	NA	10.0000 mL	10 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 09/02/22 11:03						
Mercury	7470A	776316	5.00	5.00	100	90-110
CCV 09/02/22 11:08						
Mercury	7470A	776316	5.13	5.00	103	90-110
CCV 09/02/22 11:27						
Mercury	7470A	776316	5.19	5.00	104	90-110
CCV 09/02/22 11:47						
Mercury	7470A	776316	5.27	5.00	105	90-110
CCV 09/02/22 12:06						
Mercury	7470A	776316	5.29	5.00	106	90-110
CCV 09/02/22 12:54						
Mercury	7470A	776316	5.24	5.00	105	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	C
ICB 09/02/22 11:05				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:10				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:29				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 11:48				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 12:08				
Mercury	7470A	776316	0.02	U
CCB 09/02/22 12:55				
Mercury	7470A	776316	0.02	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV							
Mercury	7470A	776316	0.20	0.2	100	50-150	09/02/22 11:06

Superset Reference:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354/

Detection Limits

Instrument: K-CVAA-04 **Matrix:** Water

Analyte	Wavelength (nm)	Units	LOQ	LOD	MDL
Mercury	253	ug/L	0.2	0.05	0.02

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354/

Analysis Run Log

Instrument ID: **K-CVAA-04** **Analytical BatchID:** **776316**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/02/22 10:53	
ZZZZZZ	1	09/02/22 10:55	
ZZZZZZ	1	09/02/22 10:57	
ZZZZZZ	1	09/02/22 10:58	
ZZZZZZ	1	09/02/22 11:00	
ZZZZZZ	1	09/02/22 11:01	
ICV1	1	09/02/22 11:03	X
ICB1	1	09/02/22 11:05	X
LLICV1	1	09/02/22 11:06	X
CCV1	1	09/02/22 11:08	X
CCB1	1	09/02/22 11:10	X
ZZZZZZ	1	09/02/22 11:11	
ZZZZZZ	1	09/02/22 11:13	
ZZZZZZ	5	09/02/22 11:14	
ZZZZZZ	5	09/02/22 11:16	
ZZZZZZ	1	09/02/22 11:18	
ZZZZZZ	1	09/02/22 11:19	
ZZZZZZ	1	09/02/22 11:21	
ZZZZZZ	1	09/02/22 11:23	
ZZZZZZ	1	09/02/22 11:24	
ZZZZZZ	1	09/02/22 11:26	
CCV2	1	09/02/22 11:27	X
CCB2	1	09/02/22 11:29	X
ZZZZZZ	1	09/02/22 11:31	
ZZZZZZ	1	09/02/22 11:32	
ZZZZZZ	1	09/02/22 11:34	
ZZZZZZ	1	09/02/22 11:35	
ZZZZZZ	1	09/02/22 11:37	
ZZZZZZ	1	09/02/22 11:39	
ZZZZZZ	1	09/02/22 11:40	
ZZZZZZ	1	09/02/22 11:42	
ZZZZZZ	1	09/02/22 11:44	
ZZZZZZ	1	09/02/22 11:45	
CCV3	1	09/02/22 11:47	X
CCB3	1	09/02/22 11:48	X
ZZZZZZ	1	09/02/22 11:50	
ZZZZZZ	1	09/02/22 11:52	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210049
Project: HS22081354/

Analysis Run Log

Instrument ID: **K-CVAA-04** **Analytical BatchID:** **776316**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/02/22 11:53	
ZZZZZZ	1	09/02/22 11:55	
ZZZZZZ	1	09/02/22 11:57	
ZZZZZZ	1	09/02/22 11:58	
KQ2214913-01MB	1	09/02/22 12:00	X
KQ2214913-02LCS	1	09/02/22 12:01	X
ZZZZZZ	1	09/02/22 12:03	
ZZZZZZ	1	09/02/22 12:05	
CCV4	1	09/02/22 12:06	X
CCB4	1	09/02/22 12:08	X
ZZZZZZ	1	09/02/22 12:10	
ZZZZZZ	1	09/02/22 12:11	
ZZZZZZ	1	09/02/22 12:13	
ZZZZZZ	1	09/02/22 12:14	
ZZZZZZ	1	09/02/22 12:16	
ZZZZZZ	1	09/02/22 12:18	
ZZZZZZ	1	09/02/22 12:19	
ZZZZZZ	1	09/02/22 12:21	
K2210049-001	1	09/02/22 12:22	X
ZZZZZZ	1	09/02/22 12:24	
ZZZZZZ	1	09/02/22 12:26	
CCV5	1	09/02/22 12:54	X
CCB5	1	09/02/22 12:55	X

Raw Data

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

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

CVAA Mercury Water Data Review Form

K-CVAA-04

Element:	Hg		
Analysis Lot #:	090222A HG4		
Starlims #:	776316		
Cal. STD/CCV Source:	HG3-85-L		
Pipette IDs:	HG-41585305/HG-38883934		
16mL Tube Lot #:	P7554803		
KMnO4:	HG3-85-B	Expiration Date:	8/29/2023
K2S2O8:	HG3-84-L	Expiration Date:	8/4/2023
NH2OH-HCl/NaCl	HG3-84-T	Expiration Date:	8/25/2023
SnCl2/HCl:	HG3-85-E	Expiration Date:	7/1/2023

Service Request Numbers:

K2209972, K2210016, K2210034, K2210036, K2210037, K2210038, K2210039, K2210049, K2210050

	Yes	No	NA
1) Appropriate standardization completed	X		
2) ICV within 10% of true value	X		
3) CCVs in control (+/- 10%)	X		
4) CCBs and or ICBs below MRL	X		
5) CCV/CCB check run every 10 samples	X		
6) All reported samples within calibration range	X		
7) Calculations correct	X		

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: _____ (Initials)

Primary Reviewed By: _____ Date: 9/2/22

Secondary Reviewed By: _____ Date: 9/2/22

Data Review Form

Instrument ID#: **K-CVAA-04**
DataFile Name: **R:\ICP\WIP\DATA\K-CVAA-04 (M-7600)\090222A HG4.csv**
RUNNO: **776316**

K2209972

No exceptions to report.

K2210016

No exceptions to report.

K2210034

No exceptions to report.

K2210036

No exceptions to report.

K2210037

No exceptions to report.

K2210038

No exceptions to report.

K2210039

No exceptions to report.

K2210049

No exceptions to report.

K2210050

No exceptions to report.

Primary Approver: 9/2/22
Secondary Approver: 9/2/22

CVAA Hg ANALYTICAL WORKSHEET

Method: 7470	Cal. Inter. Std* (100ppb): HG3-85-L 2nd Source Inter Std** (1ppm): HG3-84-V

Analysis For: Hg **DATA**

Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
1	Cal. Blk.	0.000	~	~		
2	Std 0.2*	0.200	~	(0.1-50mL)		
3	Std 0.5*	0.500	~	(0.25-50mL)		
4	Std 1.0*	1.000	~	(0.5-50mL)		
5	Std 5.0*	5.000	~	(2.5-50mL)		
6	Std 10.0*	10.000	~	(5.0-50mL)		
7	ICV1**	5.002	~	100%		
8	ICB1	-0.014	~			
9	LLICV1*	0.199	~	100%		
10	CCV1*	5.126	~	103%		
11	CCB1	-0.009	~			
12	KQ2214912-01	-0.002	~			
13	KQ2214912-02	4.657	~	93%		
14	K2209972-001 5X	-0.007	5		Cx=	-0.005
15	K2209972-001A 5X	3.300	5	66%		
16	~~NS~~	~~-0.063~~	~			9/12/22 SR
17	K2210016-005	0.001	~			
18	K2210034-001	0.006	~			
19	KQ2214912-03	4.640	~	93%		
20	KQ2214912-04	4.621	~	92%		
21	K2210034-001A	5.391	~	108%		
22	CCV2	5.185	~	104%		
23	CCB2	-0.010	~			
24	K2210034-002	0.003	~			
25	K2210034-003	0.003	~			
26	K2210034-004	0.001	~			
27	K2210036-001	0.005	~			
28	K2210036-002	0.006	~			
29	K2210036-003	0.003	~			
30	K2210036-004	0.005	~			
31	K2210036-005	0.019	~			
32	K2210037-001	0.003	~			

Comments:

R:\ICP\MISC\Document Control\CVAA Controlled - HgRunForm 10-17-17

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg			**DATA**			
Pos.	**SAMPLE NUMBER**	**Measured (µg/L)**	**Dilution Factor**	**Recoveries (ICV, CCV, LCS, MS)**		**Comments:**
33	K2210037-002	0.013	~			
34	CCV3	5.266	~	105%		
35	CCB3	-0.008	~			
36	K2210037-003	0.006	~			
37	K2210037-004	0.001	~			
38	K2210037-005	0.003	~			
39	K2210039-001	0.004	~			
40	K2210039-002	0.022	~			
41	K2210039-003	-0.002	~			
42	KQ2214913-01	0.002	~			
43	KQ2214913-02	4.835	~	97%		
44	K2210038-001	-0.003	~			
45	KQ2214913-03	4.799	~	96%		
46	CCV4	5.285	~	106%		
47	CCB4	-0.011	~			
48	KQ2214913-04	4.750	~	95%		
49	K2210038-001A	5.287	~	106%		
50	K2210038-002	-0.001	~			
51	K2210038-003	0.078	~			
52	K2210038-004	0.080	~			
53	K2210038-005	0.002	~			
54	K2210038-006	0.004	~			
55	K2210038-007	0.004	~			
56	K2210049-001	0.005	~			
57	K2210050-001	0.003	~			
58	~~CCV5~~	~~0.169~~	~			Solution Low 9/2/22
59	CCV5	5.241	~	105%		
60	CCB5	-0.011	~			
61						
62						
63						
64						
Comments:						

Soil/Tissue Spike Level:						
Method	**Spike Level**	**MRL**	**LCS Limit**	**MS Limit**	**RPD**	**Post-Spike @ 5ppb**
7470A Water	**5.0 µg/L**	**0.2 µg/L**	**80-120%**	**75-125%**	**20%**	**+/- 20%**
245.1 Water	**5.0 µg/L**	**0.2 µg/L**	**85-115%**	**70-130%**	**20%**	**+/- 20%**
7470A TCLP	**5.0 µg/L**	**1.0 µg/L**	**80-120%**	**75-125%**	**20%**	**+/- 20%**
7471A Soil LCSS	**7.1mg/kg**	**0.02 mg/kg**	**51-149%**	**80-120%**	**20%**	**+/- 20%**
7471A Tissue Dorm	**0.41 mg/kg**	**0.02 mg/kg**	**68-136%**	**80-120%**	**20%**	**+/- 20%**

[CVAA Controlled - HgRunForm 10-17-17] HG2.XLS

Report Generated By Teledyne Leeman QuickTrace

Analyst: alkls.nouser

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\090222B HG4.wszf

Creation Date: 9/2/2022 10:10:58 AM

Comment:

Results

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
Calibration Blank				STD		0.000		14	168.27				
		1.0000					N/A						
Replicates	26.3	-14.9	39.1	5.8									
Standard #1 (0.2 ug/L)				STD		0.200		1504	2.29	-1.47%			
		1.0000					N/A						
Replicates	1455.7	1506.0	1536.7	1516.0									
Standard #2 (1 ug/L)				STD		0.500		3703	1.42	-2.40%			
		1.0000					N/A						
Replicates	3659.0	3660.4	3724.2	3767.1									
Standard #3 (2.5 ug/L)				STD		1.000		7425	1.77	-1.95%			
		1.0000					N/A						
Replicates	7245.5	7411.8	7505.2	7538.5									
Standard #4 (5 ug/L)				STD		5.000		38627	1.54	2.17%			
		1.0000					N/A						
Replicates	37826.6	38542.1	38973.6	39166.1									
Standard #5 (10 ug/L)				STD		10.000		75214	1.73	-0.52%			
		1.0000					N/A						
Replicates	73530.6	74911.9	75896.4	76517.3									

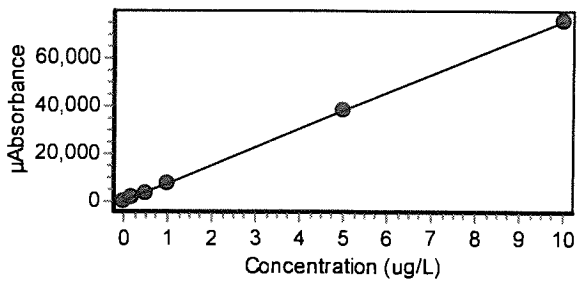
Calibration

Equation: Abs = 7558.940x + 14.077

R2: 0.99979 RSE: 2.36%

SEE: 532.8993

Flags:



ICV1				ICV		5.002		37826	1.95				
		1.0000					100.04						
Replicates	36868.7	37669.2	38193.4	38571.4									
ICB1				ICB		-0.014		-89	30.10				
		1.0000					N/A						
Replicates	-63.8	-63.7	-100.2	-127.4									
LLICV1				CRDL		0.199		1518	3.24				
		1.0000					99.49						
Replicates	1470.4	1492.3	1528.1	1582.0									

Sample Name	Type	Conc (ug/L)	µAbs	%RSD	Residual Flags	Wt. (g)	Vol (ml)
Aliq. Vol. Diln. Vol DF	Spike Vol	% Recovery					
CCV1	CCV	5.126	38759	1.64			
1.0000		102.51					
Replicates	37917.4	38652.1	39073.6	39391.4			
CCB1	CCB	-0.009	-54	48.00			
1.0000		N/A					
Replicates	-50.1	-88.6	-64.3	-11.1			
KQ2214912-01	UNK	-0.002	0	190.90			
1.0000		N/A					
Replicates	13.9	23.4	0.5	-38.0			
KQ2214912-02	UNK	4.657	35215	1.46			
1.0000		N/A					
Replicates	34558.0	35098.5	35440.7	35764.2			
K2209972-001 5X	UNK	-0.007	-39	38.29			
1.0000		N/A					
Replicates	-46.6	-42.2	-9.6	-55.9			
K2209972-001A 5X	UNK	3.300	24957	1.64			
1.0000		N/A					
Replicates	24427.6	24869.0	25166.0	25367.0			
NS	UNK	-0.063	-462	4.81			
1.0000		N/A					
Replicates	-480.6	-432.7	-454.0	-479.4			
K2210016-005	UNK	0.001	22	353.07			
1.0000		N/A					
Replicates	60.7	5.5	6.4	13.5			
K2210034-001	UNK	0.006	61	64.52			
1.0000		N/A					
Replicates	27.0	43.7	85.0	87.4			
KQ2214912-03	UNK	4.640	35088	1.64			
1.0000		N/A					
Replicates	34351.8	34931.3	35422.5	35648.0			
KQ2214912-04	UNK	4.621	34941	1.37			
1.0000		N/A					
Replicates	34359.0	34777.0	35164.8	35463.8			
K2210034-001A	UNK	5.391	40763	1.42			
1.0000		N/A					
Replicates	40024.0	40611.1	41071.8	41343.4			
CCV2	CCV	5.185	39205	2.78			
1.0000		103.69					
Replicates	37808.2	38895.7	39878.0	40238.0			
CCB2	CCB	-0.010	-64	30.34			
1.0000		N/A					
Replicates	-32.6	-81.1	-83.4	-58.9			

9/2/22

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
K2210034-002				UNK		0.003		33	124.28				
			1.0000				N/A						
Replicates	30.4	55.9	45.8	1.1									
K2210034-003				UNK		0.003		37	126.24				
			1.0000				N/A						
Replicates	80.0	22.2	26.7	18.9									
K2210034-004				UNK		0.001		20	572.22				
			1.0000				N/A						
Replicates	-27.3	41.7	36.5	27.7									
K2210036-001				UNK		0.005		51	25.48				
			1.0000				N/A						
Replicates	64.1	41.7	48.2	50.7									
K2210036-002				UNK		0.006		63	80.86				
			1.0000				N/A						
Replicates	7.5	62.5	87.2	95.7									
K2210036-003				UNK		0.003		40	90.54				
			1.0000				N/A						
Replicates	63.6	15.5	24.8	56.3									
K2210036-004				UNK		0.005		49	80.99				
			1.0000				N/A						
Replicates	12.5	40.9	71.9	71.3									
K2210036-005				UNK		0.019		154	18.86				
			1.0000				N/A						
Replicates	189.9	147.2	153.4	126.4									
K2210037-001				UNK		0.003		39	108.38				
			1.0000				N/A						
Replicates	15.0	16.1	62.1	61.6									
K2210037-002				UNK		0.013		115	26.79				
			1.0000				N/A						
Replicates	146.8	91.4	93.9	128.5									
CCV3				CCV		5.266		39822	1.71				
			1.0000				105.33						
Replicates	38917.6	39708.3	40187.3	40473.3									
CCB3				CCB		-0.008		-50	45.33				
			1.0000				N/A						
Replicates	-7.6	-56.3	-72.8	-62.5									
K2210037-003				UNK		0.006		59	84.65				
			1.0000				N/A						
Replicates	32.3	20.5	95.6	85.6									
K2210037-004				UNK		0.001		24	236.03				
			1.0000				N/A						
Replicates	55.4	21.1	-4.4	25.6									

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
K2210037-005				UNK		0.003		37	130.02				
		1.0000					N/A						
Replicates	11.3	11.3	67.6	59.4									
K2210039-001				UNK		0.004		42	99.24				
		1.0000					N/A						
Replicates	84.0	33.2	26.2	25.8									
K2210039-002				UNK		0.022		184	25.35				
		1.0000					N/A						
Replicates	147.8	146.5	213.2	228.7									
K2210039-003				UNK		-0.002		2	330.06				
		1.0000					N/A						
Replicates	58.3	-8.4	-10.4	-29.9									
KQ2214913-01				UNK		0.002		26	240.38				
		1.0000					N/A						
Replicates	6.5	3.0	29.5	64.0									
KQ2214913-02				UNK		4.835		36563	1.08				
		1.0000					N/A						
Replicates	36052.1	36493.7	36728.8	36979.0									
K2210038-001				UNK		-0.003		-7	106.94				
		1.0000					N/A						
Replicates	-14.9	-21.7	-18.2	26.6									
KQ2214913-03				UNK		4.799		36286	1.20				
		1.0000					N/A						
Replicates	35718.9	36197.1	36506.8	36722.9									
CCV4				CCV		5.285		39966	1.59				
		1.0000					105.71						
Replicates	39134.0	39855.2	40257.4	40618.9									
CCB4				CCB		-0.011		-67	40.99				
		1.0000					N/A						
Replicates	-32.7	-50.7	-74.0	-109.4									
KQ2214913-04				UNK		4.750		35917	1.26				
		1.0000					N/A						
Replicates	35333.9	35813.5	36155.7	36366.2									
K2210038-001A				UNK		5.287		39980	1.17				
		1.0000					N/A						
Replicates	39334.4	39957.2	40238.0	40389.2									
K2210038-002				UNK		-0.001		8	402.93				
		1.0000					N/A						
Replicates	16.6	-23.8	2.8	35.8									
K2210038-003				UNK		0.078		607	4.91				
		1.0000					N/A						
Replicates	632.5	615.4	614.4	565.0									

Sample Name	Aliq. Vol.	Diln. Vol	DF	Type	Spike Vol	Conc (ug/L)	% Recovery	µAbs	%RSD	Residual	Flags	Wt. (g)	Vol (ml)
K2210038-004				UNK		0.080		618	3.99				
		1.0000					N/A						
Replicates	600.7		622.7		597.6		649.6						
K2210038-005				UNK		0.002		29	323.24				
		1.0000					N/A						
Replicates	71.6		73.1		-8.4		-18.4						
K2210038-006				UNK		0.004		42	70.77				
		1.0000					N/A						
Replicates	32.6		42.2		23.4		68.7						
K2210038-007				UNK		0.004		41	89.78				
		1.0000					N/A						
Replicates	49.2		40.9		64.5		8.0						
K2210049-001				UNK		0.005		51	38.02				
		1.0000					N/A						
Replicates	59.4		34.7		44.4		65.5						
K2210050-001				UNK		0.003		39	61.55				
		1.0000					N/A						
Replicates	44.6		45.9		48.4		16.1						
CCV5				CCV		0.169		1290	22.27		Q		9/2/22
		1.0000					~~3.38~~						
Replicates	927.1		1201.3		1504.5		1528.3						
CCV5				CCV		5.241		39631	1.80				
		1.0000					104.82						
Replicates	38724.5		39459.7		39953.9		40387.2						
CCB5				CCB		-0.011		-73	24.81				
		1.0000					N/A						
Replicates	-78.4		-65.5		-48.2		-99.3						

Preparation Information Benchsheet

Prep Run#: 405730
Team: Metals/JHINSON
Number of Copies to make: 6

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ2214912-01	MB		7470A/Hg T		Liquid	10.0000mL	10.00mL	
2	KQ2214912-02	LCS		7470A/Hg T		Liquid	10.0000mL	10.00mL	
3	K2209972-001	083122	.03	7470A/Hg T		Water	2.5000mL	10.00mL	
4	K2210016-005	Metals Q2	.10	7470A/Hg T		Water	10.0000mL	10.00mL	
5	K2210034-001	18CPTMW14_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
6	KQ2214912-03	K2210034-001 MS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
7	KQ2214912-04	K2210034-001 DMS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
8	K2210034-002	19CPTMW12SW_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
9	K2210034-003	18CPTMW12SW_081922_a	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
10	K2210034-004	18CPTMW12DW_081922	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
11	K2210036-001	MW3_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
12	K2210036-002	18CPTMW22SW_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
13	K2210036-003	MW20_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
14	K2210036-004	18CPTMW22DW_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
15	K2210036-005	18CPTMW22R_081822	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
16	K2210037-001	18CPTMW10DW_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
17	K2210037-002	MW9_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
18	K2210037-003	18WW19_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
19	K2210037-004	18WW19_082322_a	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
20	K2210037-005	18WW20_082322	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
21	K2210039-001	MW22_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
22	K2210039-002	18WW09_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
23	K2210039-003	18CPTMW19SW_081122	.01	7470A/Hg T		Water	10.0000mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 224676 Logbook Ref: HG3-84-V Expires On: 09/25/2022

KQ2214912-02 0.05mL KQ2214912-03 0.05mL KQ2214912-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	2106023 (220673)	K-MET 16 mL Tube	GL5221 (223546)	K-MET H2SO4 Hg	61139 (219381)
K-MET HNO3 Hg	22E1062003 (223986)				

Preparation Information Benchsheet

Prep Run#: 405730
Team: Metals/JHINSON

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

Preparation Steps

Step: Digestion
Started: 9/1/22 14:07
Finished: 9/1/22 16:07
By: JHINSON
Comments

Preparation Equipment

K-Block-Digester-14	Digestion	IR Thermometer ID: IR03		K-Block-Digester-14	Digestion	Temperature	94.8 deg C
K-Block-Digester-14	Digestion	Temperature Check Location	21	K-BlockDigester-17	Digestion	IR Thermometer ID: IR03	
K-BlockDigester-17	Digestion	Temperature	94.7 deg C	K-BlockDigester-17	Digestion	Temperature Check Location	64
K-U52540	Digestion			K-U72662	Digestion		
HG-39591307	Digestion						

Comments: Cal Std: HG3-85-L.

Reviewed By: _____ Date: 9/2/22

9/2
Rush

Preparation Information Benchsheet

Prep Run#: 405730 **Prep WorkFlow:** HgDigAq **Status:** Draft
Team: Metals **Prep Method:** **Prep Date/Time:** 9/1/22 09:52 AM
Number of Copies to make: 6

#	Lab Code	Client ID	B#	√	Test	Matrix	Amt Ext.	pH	Int Vol	Final Vol	Surr Added	Spike Added
1	KQ2214912-01	Method Blank			7470A/Hg T	Liquid						
2	KQ2214912-02	Lab Control Sample			7470A/Hg T	Liquid						
3	K2209972-001	083122	.03		7470A/Hg T	Water	2.5mL	25 µL	Cx=	-0.005		
4	K2210016-005	Metals Q2	.10		7470A/Hg T	Water						
5	K2210034-001	18CPTMW14_081922	.01		7470A/Hg T	Water						
6	KQ2214912-03	Matrix Spike	.01		7470A/Hg T	Liquid						
7	KQ2214912-04	Duplicate Matrix Spike	.01		7470A/Hg T	Liquid						
8	K2210034-002	19CPTMW12SW_081922	.01		7470A/Hg T	Water						
9	K2210034-003	18CPTMW12SW_081922_a	.01		7470A/Hg T	Water						
10	K2210034-004	18CPTMW12DW_081922	.01		7470A/Hg T	Water						
11	K2210036-001	MW3_081822	.01		7470A/Hg T	Water						
12	K2210036-002	18CPTMW22SW_081822	.01		7470A/Hg T	Water						
13	K2210036-003	MW20_081822	.01		7470A/Hg T	Water						
14	K2210036-004	18CPTMW22DW_081822	.01		7470A/Hg T	Water						
15	K2210036-005	18CPTMW22R_081822	.01		7470A/Hg T	Water						
16	K2210037-001	18CPTMW10DW_082322	.01		7470A/Hg T	Water						
17	K2210037-002	MW9_082322	.01		7470A/Hg T	Water						
18	K2210037-003	18WW19_082322	.01		7470A/Hg T	Water						
19	K2210037-004	18WW19_082322_a	.01		7470A/Hg T	Water						
20	K2210037-005	18WW20_082322	.01		7470A/Hg T	Water						
21	K2210039-001	MW22_081122	.01		7470A/Hg T	Water						
22	K2210039-002	18WW09_081122	.01		7470A/Hg T	Water						
23	K2210039-003	18CPTMW19SW_081122	.01		7470A/Hg T	Water						

Comments: Cal Std HG3-85-L BIK 14/94-8/21 1210-1410 BIK 17/99-7/64 1407-1607

Surrogate ID: _____ Spike ID: _____

Witnessed By: _____

Analyst: _____ Assisted By: 776316

Printed 9/1/22 9:54 Preparation Information Benchsheet Page 1 of 1

Preparation Information Benchsheet

Prep Run#: 405732
Team: Metals/JHINSON
Number of Copies to make: 3

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ2214913-01	MB		7470A/Hg T		Liquid	10.0000mL	10.00mL	
2	KQ2214913-02	LCS		7470A/Hg T		Liquid	10.0000mL	10.00mL	
3	K2210038-001	AWD3_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
4	KQ2214913-03	K2210038-001 MS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
5	KQ2214913-04	K2210038-001 DMS	.01	7470A/Hg T		Liquid	10.0000mL	10.00mL	
6	K2210038-002	AWD3_081622_a	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
7	K2210038-003	102_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
8	K2210038-004	102_081622_a	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
9	K2210038-005	18WW03_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
10	K2210038-006	CO3_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
11	K2210038-007	18WW18_081622	.01	7470A/Hg T		Ground Water	10.0000mL	10.00mL	
12	K2210049-001	LH18/24-SP650_082422	.01	7470A/Hg T		Water	10.0000mL	10.00mL	
13	K2210050-001	LH18/24-SP140_082422	.01	7470A/Hg T		Water	10.0000mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 224676 Logbook Ref: HG3-84-V Expires On: 09/25/2022

KQ2214913-02 0.05mL KQ2214913-03 0.05mL KQ2214913-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	2106023 (220673)	K-MET 16 mL Tube	GL5221 (223546)	K-MET H2SO4 Hg	61139 (219381)
K-MET HNO3 Hg	22E1062003 (223986)				

Preparation Steps

Step: Digestion
Started: 9/1/22 14:07
Finished: 9/1/22 16:07
By: JHINSON
Comments

Preparation Equipment

K-Block-Digester-14	Digestion	IR Thermometer ID: IR03		K-Block-Digester-14	Digestion	Temperature	94.8 deg C
K-Block-Digester-14	Digestion	Temperature Check Location	21	K-BlockDigester-17	Digestion	IR Thermometer ID: IR03	
K-BlockDigester-17	Digestion	Temperature	94.7 deg C	K-BlockDigester-17	Digestion	Temperature Check Location	64
HG-39591307	Digestion			K-U72662	Digestion		
K-U52540	Digestion						

Preparation Information Benchsheet

Prep Run#: 405732
Team: Metals/JHINSON

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/1/22 14:07

Comments: Cal Std: HG3-85-L.

Reviewed By: _____ Date: 9/2/22

RUSH 9/5

Preparation Information Benchsheet

Prep Run#: 405732
Team: Metals
Number of Copies to make: 3

Prep WorkFlow: HgDigAq
Prep Method:

Status: Draft
Prep Date/Time: 9/1/22 09:55 AM

#	Lab Code	Client ID	B#	√	Test	Matrix	Amt Ext.	pH	Int Vol	Final Vol	Surr Added	Spike Added
1	KQ2214913-01	Method Blank			7470A/Hg T	Liquid						
2	KQ2214913-02	Lab Control Sample			7470A/Hg T	Liquid						
3	K2210038-001	AWD3_081622	.01		7470A/Hg T	Water						
4	KQ2214913-03	Matrix Spike	.01		7470A/Hg T	Liquid						
5	KQ2214913-04	Duplicate Matrix Spike	.01		7470A/Hg T	Liquid						
6	K2210038-002	AWD3_081622_a	.01		7470A/Hg T	Water						
7	K2210038-003	102_081622	.01		7470A/Hg T	Water						
8	K2210038-004	102_081622_a	.01		7470A/Hg T	Water						
9	K2210038-005	18WW03_081622	.01		7470A/Hg T	Water						
10	K2210038-006	CO3_081622	.01		7470A/Hg T	Water						
11	K2210038-007	18WW18_081622	.01		7470A/Hg T	Water						
12	K2210049-001	LH18/24-SP650_082422	.01		7470A/Hg T	Water						
13	K2210050-001	LH18/24-SP140_082422	.01		7470A/Hg T	Water						

Comments: Cal Std Hg3-35-L BLK 14/94 8/21 1210-1410 BLK 17/94 7169 1407-1607

Surrogate ID: _____ Spike ID: _____

Witnessed By: _____

Analyst: _____ Assisted By: _____

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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September 09, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22081683**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Aug 31, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22081683

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081683-01	LH18/24-SP650_083022	Water		30-Aug-2022 13:00	31-Aug-2022 09:15	☐
HS22081683-02	LH18/24-SP650_083022_AIX	Water		30-Aug-2022 13:00	31-Aug-2022 09:15	☐
HS22081683-03	LH18/24-SP650_083022_BIX	Water		30-Aug-2022 13:00	31-Aug-2022 09:15	☐

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22081683

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R416702

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

WetChemistry by Method E415.1

Batch ID: R416421

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

WetChemistry by Method E365.3

Batch ID: R416345

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

ALS Houston, US

Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: Longhorn GW Treatment Plant Weekly Samples

WorkOrder:HS22081683

Sample ID: LH18/24-SP650_083022

Lab ID:HS22081683-01

Collection Date: 30-Aug-2022 13:00

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**18**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	07-Sep-2022 12:30
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**2.98**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	01-Sep-2022 11:51
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**12.1**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Sep-2022 21:23

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

ALS Houston, US

Date: 09-Sep-22

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS22081683
Sample ID:	LH18/24-SP650_083022_AIX	Lab ID:HS22081683-02
Collection Date:	30-Aug-2022 13:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	09-Sep-2022 17:34

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

ALS Houston, US

Date: 09-Sep-22

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS22081683
Sample ID:	LH18/24-SP650_083022_BIX	Lab ID:HS22081683-03
Collection Date:	30-Aug-2022 13:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	09-Sep-2022 17:34

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

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081683

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R416345 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22081683-01	LH18/24-SP650_083022	30 Aug 2022 13:00			01 Sep 2022 11:51	10
Batch ID: R416421 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22081683-01	LH18/24-SP650_083022	30 Aug 2022 13:00			01 Sep 2022 21:23	1
Batch ID: R416702 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22081683-01	LH18/24-SP650_083022	30 Aug 2022 13:00			07 Sep 2022 12:30	1
Batch ID: R416842 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22081683-02	LH18/24-SP650_083022_AIX	30 Aug 2022 13:00			09 Sep 2022 17:34	1
HS22081683-03	LH18/24-SP650_083022_BIX	30 Aug 2022 13:00			09 Sep 2022 17:34	1

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081683

QC BATCH REPORT

Batch ID: R416345 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R416345** Units: **mg/L** Analysis Date: **01-Sep-2022 11:51**
Client ID: Run ID: **UV-2450_416345** SeqNo: **6832383** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R416345** Units: **mg/L** Analysis Date: **01-Sep-2022 11:51**
Client ID: Run ID: **UV-2450_416345** SeqNo: **6832382** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.218	0.0250	0.25	0	87.2	85 - 115				

MS Sample ID: **HS22081683-01MS** Units: **mg/L** Analysis Date: **01-Sep-2022 11:51**
Client ID: **LH18/24-SP650_083022** Run ID: **UV-2450_416345** SeqNo: **6832385** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	5.6	0.250	2.5	2.98	105	80 - 120				

MSD Sample ID: **HS22081683-01MSD** Units: **mg/L** Analysis Date: **01-Sep-2022 11:51**
Client ID: **LH18/24-SP650_083022** Run ID: **UV-2450_416345** SeqNo: **6832384** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	5.51	0.250	2.5	2.98	101	80 - 120	5.6	1.62	20	

The following samples were analyzed in this batch: HS22081683-01

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081683

QC BATCH REPORT

Batch ID: R416421 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-09012022** Units: **mg/L** Analysis Date: **01-Sep-2022 19:36**
Client ID: Run ID: **TOC_04_416421** SeqNo: **6832202** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-09012022** Units: **mg/L** Analysis Date: **01-Sep-2022 19:49**
Client ID: Run ID: **TOC_04_416421** SeqNo: **6832203** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.171	1.00	10	0	91.7	85 - 115				

LCSD Sample ID: **LCSD-09012022** Units: **mg/L** Analysis Date: **01-Sep-2022 20:02**
Client ID: Run ID: **TOC_04_416421** SeqNo: **6832204** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.266	1.00	10	0	92.7	85 - 115	9.171	1.03	20	

MS Sample ID: **HS22081267-02MS** Units: **mg/L** Analysis Date: **01-Sep-2022 20:54**
Client ID: Run ID: **TOC_04_416421** SeqNo: **6832208** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	30.95	1.00	10	21.38	95.7	80 - 120				

The following samples were analyzed in this batch: HS22081683-01

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22081683

QC BATCH REPORT

Batch ID: R416702 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R416702** Units: **mg/L** Analysis Date: **07-Sep-2022 12:30**
Client ID: Run ID: **WetChem_HS_416702** SeqNo: **6838956** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R416702** Units: **mg/L** Analysis Date: **07-Sep-2022 12:30**
Client ID: Run ID: **WetChem_HS_416702** SeqNo: **6838955** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	8.959	0.20	10	0	89.6	80 - 120				

MS Sample ID: **HS22081679-01MS** Units: **mg/L** Analysis Date: **07-Sep-2022 12:30**
Client ID: Run ID: **WetChem_HS_416702** SeqNo: **6838963** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.43	0.20	10	0.159	103	80 - 120				

MSD Sample ID: **HS22081679-01MSD** Units: **mg/L** Analysis Date: **07-Sep-2022 12:30**
Client ID: Run ID: **WetChem_HS_416702** SeqNo: **6838962** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.44	0.20	10	0.159	103	80 - 120	10.43	0.0671	20	

The following samples were analyzed in this batch: HS22081683-01

ALS Houston, US Date: 09-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22081683**

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: 09-Sep-22

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 09-Sep-22

Sample Receipt Checklist

Work Order ID: HS22081683 **Date/Time Received:** 31-Aug-2022 09:15

Client Name: Bhate Environmental **Received by:** Paresh M. Giga

Completed By:	/S/ Paresh M. Giga	31-Aug-2022 12:33	**Reviewed by:**	/S/ Dane J. Wacasey	08-Sep-2022 17:47
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	1.8C/1.6C U/C	IR31	
Cooler(s)/Kit(s):	46450		
Date/Time sample(s) sent to storage:	8/31/22 12:40		
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: Dane Wacasey

Page 1 of 1

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22081683
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_083022	Water	08/30/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_083022	Water	08/30/22 / 13:00		1			X		NONE	
LH18/24–SP650_083022_AIX	Water	08/30/22 / 13:00		1				X	NONE	
LH18/24-SP650_083022_BIX	Water	08/30/22 / 13:00		1				X	NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/30/22	13:30		8/31/22	09:15						

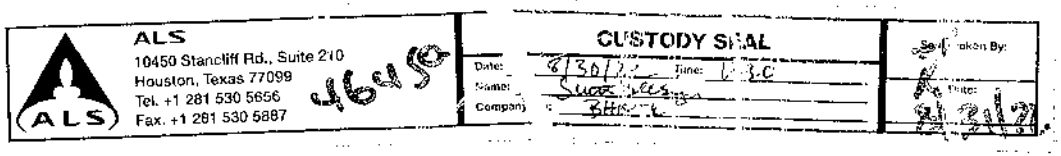
For Lab Use Only

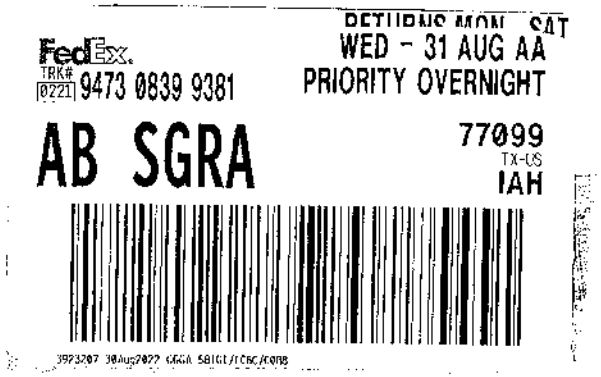
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks: 46450 1.8° A31

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

01133236


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
4649
CUSTODY SEAL
Date:
Time:
Name:
Company:
Seal Taken By:
Date:


FedEx.
TRK#
0221
9473 0839 9381
RETURNS MON - SAT
WED - 31 AUG AA
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

September 09, 2022 Service Request No:E2200861

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22081683

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 31, 2022
For your reference, these analyses have been assigned our service request number **E2200861.**

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 Environmental – US	**Service Request No.:**	E2200861
Project:	HS22081683	**Date Received:**	08/31/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 08/31/22.

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:

EQ2200387: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200861
Project: HS22081683

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200861-001	LH18/24-SP650_083022_AIX	8/30/2022	1300
E2200861-002	LH18/24-SP650_083022_BIX	8/30/2022	1300

Service Request Summary

Folder #: **E2200861**
Client Name: ALS Environmental - US
Project Name: HS22081683
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/31/22
Internal Due Date: 9/8/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081683
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200861-001	LH18/24-SP650_083022_AIX	Water	08/30/22 1300	**IV**
E2200861-002	LH18/24-SP650_083022_BIX	Water	08/30/22 1300	**IV**

Service Request Summary

Folder #: **E2200861**
Client Name: ALS Environmental - US
Project Name: HS22081683
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/31/22
Internal Due Date: 9/8/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22081683
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
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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:** 19729

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22081683
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22081683-02**	**LH18/24-SP650_083022_AIX**	**Water**	**30 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			08 Sep 2022
2.	**HS22081683-03**	**LH18/24-SP650_083022_BIX**	**Water**	**30 Aug 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			08 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NP Date/Time:

Received By: FedEx Date/Time: 8/31/22 1900

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1291

Date/Time Received: 8/31/22 Initials: CH Date/Time Logged in: 8/31/22 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 If yes, how many and where?

Were they intact? ○ Yes ○ No ⊗ N/A

Were they signed and dated? ○ Yes ○ No ⊗ N/A

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		8/31/22	1901	CH	3.0°	☑
						☐
						☐
						☐

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#: 405735 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/1/22 13:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200850-001	HBW7_082622	.01	6850/ClO4 DOD			Water	10mL	
2	E2200850-002	HBW10_082622	.01	6850/ClO4 DOD			Water	10mL	
3	E2200850-003	HBW1_082622	.01	6850/ClO4 DOD			Water	10mL	
4	E2200850-004	HBW1_082622_a	.01	6850/ClO4 DOD			Water	10mL	
5	E2200850-005	GPW1_082622	.01	6850/ClO4 DOD			Water	10mL	
6	E2200850-006	GPW3_082622	.01	6850/ClO4 DOD			Water	10mL	
7	E2200851-021	ICT14C_082522	.01	6850/ClO4 DOD			Water	10mL	
8	E2200851-022	ICT14D_082522	.01	6850/ClO4 DOD			Water	10mL	
9	E2200851-023	ICT14E_082522	.01	6850/ClO4 DOD			Water	10mL	
10	E2200861-001	LH18/24-SP650_083022_AIX	.01	6850/ClO4 DOD			Water	10mL	
11	E2200861-002	LH18/24-SP650_083022_BIX	.01	6850/ClO4 DOD			Water	10mL	
12	E2200864-001	130_083122	.01	6850/ClO4 DOD			Water	10mL	
13	E2200864-002	17WW03_083122	.01	6850/ClO4 DOD			Water	10mL	
14	E2200864-003	17WW01_083122	.01	6850/ClO4 DOD			Water	10mL	
15	E2200864-004	17WW02_083122	.01	6850/ClO4 DOD			Water	10mL	
16	E2200864-005	17WW02_083122_a	.01	6850/ClO4 DOD			Water	10mL	
17	E2200864-006	17WW06_083122	.01	6850/ClO4 DOD			Water	10mL	
18	EQ2200387-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2200387-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200387-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200387-04	ICT14D_082522 MS	.02	6850/ClO4 DOD			Liquid	10mL	
22	EQ2200387-05	ICT14D_082522 DMS	.02	6850/ClO4 DOD			Liquid	10mL	
23	EQ2200387-06	17WW06_083122 MS	.02	6850/ClO4 DOD			Liquid	10mL	
24	EQ2200387-07	17WW06_083122 DMS	.02	6850/ClO4 DOD			Liquid	10mL	
25	R2207855-003	2208170817Y WB-5-280	.01	6850/ClO4			Water	10mL	
26	R2207855-011	2208181449Y WB-14-520	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200387-02 1.00µL EQ2200387-02 1.00µL EQ2200387-03 1.00µL EQ2200387-03 1.00µL EQ2200387-04 1.00µL EQ2200387-05 1.00µL
EQ2200387-06 1.00µL EQ2200387-07 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

Preparation Information Benchsheet

Prep Run#: 405735 **Prep WorkFlow:** GenExt28Day **Status:** Prepped

Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/1/22 13:30

E2200850-001	100.00µL	E2200850-002	100.00µL	E2200850-003	100.00µL	E2200850-004	100.00µL	E2200850-005	100.00µL	E2200850-006	100.00µL
E2200851-021	100.00µL	E2200851-022	100.00µL	E2200851-023	100.00µL	E2200861-001	100.00µL	E2200861-002	100.00µL	E2200864-001	100.00µL
E2200864-002	100.00µL	E2200864-003	100.00µL	E2200864-004	100.00µL	E2200864-005	100.00µL	E2200864-006	100.00µL	EQ2200387-01	100.00µL
EQ2200387-01	100.00µL	EQ2200387-02	100.00µL	EQ2200387-02	100.00µL	EQ2200387-03	100.00µL	EQ2200387-03	100.00µL	EQ2200387-04	100.00µL
EQ2200387-05	100.00µL	EQ2200387-06	100.00µL	EQ2200387-07	100.00µL	R2207855-003	100.00µL	R2207855-011	100.00µL		

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 9/1/22 13:30
Finished: 9/1/22 14:25
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 09/01/22

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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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:**	E2200861
Project:	HS22081683	**Date Collected:**	8/30/22 1300
Sample Matrix:	Water	**Date Received:**	8/31/22
Sample Name:	LH18/24-SP650_083022_AIX	**Units:**	µg/L
Lab Code:	E2200861-001	**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	9/ 1/22	9/9/22 14:48	405735	776946	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200861
Project:	HS22081683	**Date Collected:**	8/30/22 1300
Sample Matrix:	Water	**Date Received:**	8/31/22
Sample Name:	LH18/24-SP650_083022_BIX	**Units:**	µg/L
Lab Code:	E2200861-002	**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	9/ 1/22	9/9/22 14:57	405735	776946	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200861
Project:	HS22081683	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200387-01	**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	9/ 1/22	9/9/22 13:50	405735	776946	

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: HS22081683
Sample Matrix: Water

Service Request: E2200861
Date Analyzed: 9/ 9/22

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: 405735

	Lab Control Sample EQ2200387-02			Duplicate Lab Control Sample EQ2200387-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.104	0.100	104	0.0941	0.100	94	84 - 119	10	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:**	E2200861
Project:	HS22081683	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200387-02	**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	**0.104**		0.100	0.0500	0.0250	1	9/ 1/22	9/9/22 13:58	405735	776946	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200861
Project:	HS22081683	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200387-03	**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	**0.0941**	J	0.100	0.0500	0.0250	1	9/ 1/22	9/9/22 14:07	405735	776946	

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September 06, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22081685**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Aug 31, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22081685

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22081685-01	LH18/24-SP650_083022	Water		30-Aug-2022 13:00	31-Aug-2022 09:15	☐
HS22081685-02	Trip Blank	Water	CG-041822-108	30-Aug-2022 00:00	31-Aug-2022 09:15	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22081685

GCMS Volatiles by Method SW8260

Batch ID: R416503

Sample ID: HS22090111-01MSD

- MSD is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R416517

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22081685
Sample ID: LH18/24-SP650_083022 Lab ID:HS22081685-01
Collection Date: 30-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
2-Butanone	**33**		**0.50**	**1.0**	**2.0**	**ug/L**	1	03-Sep-2022 15:56
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	03-Sep-2022 15:56
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	03-Sep-2022 15:56
Acetone	**15**		**0.40**	**2.0**	**2.0**	**ug/L**	1	03-Sep-2022 15:56
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Carbon disulfide	**4.6**		**0.60**	**2.0**	**2.0**	**ug/L**	1	03-Sep-2022 15:56
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22081685
Sample ID: LH18/24-SP650_083022 Lab ID:HS22081685-01
Collection Date: 30-Aug-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
cis-1,2-Dichloroethene	**2.5**		**0.20**	**0.50**	**1.0**	**ug/L**	1	03-Sep-2022 15:56
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	03-Sep-2022 15:56
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	03-Sep-2022 15:56
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:56
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:56
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:56
Surr: 1,2-Dichloroethane-d4	*91.0*			**0**	*81-118*	*%REC*	*1*	*03-Sep-2022 15:56*
Surr: 4-Bromofluorobenzene	*93.5*			**0**	*85-114*	*%REC*	*1*	*03-Sep-2022 15:56*
Surr: Dibromofluoromethane	*94.0*			**0**	*80-119*	*%REC*	*1*	*03-Sep-2022 15:56*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*03-Sep-2022 15:56*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,100**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Sep-2022 14:44
Sulfate	**35.6**		**0.400**	**1.00**	**1.00**	**mg/L**	2	04-Sep-2022 14:38

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22081685
Sample ID: Trip Blank Lab ID:HS22081685-02
Collection Date: 30-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	03-Sep-2022 15:35
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	03-Sep-2022 15:35
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	03-Sep-2022 15:35
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	03-Sep-2022 15:35
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	03-Sep-2022 15:35
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35

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

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ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22081685
Sample ID: Trip Blank Lab ID:HS22081685-02
Collection Date: 30-Aug-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	03-Sep-2022 15:35
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	03-Sep-2022 15:35
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	03-Sep-2022 15:35
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	03-Sep-2022 15:35
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	03-Sep-2022 15:35
Surr: 1,2-Dichloroethane-d4	*93.1*			**0**	*81-118*	*%REC*	*1*	*03-Sep-2022 15:35*
Surr: 4-Bromofluorobenzene	*90.5*			**0**	*85-114*	*%REC*	*1*	*03-Sep-2022 15:35*
Surr: Dibromofluoromethane	*94.0*			**0**	*80-119*	*%REC*	*1*	*03-Sep-2022 15:35*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*03-Sep-2022 15:35*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R416503 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22081685-01	LH18/24-SP650_083022	30 Aug 2022 13:00			03 Sep 2022 15:56	1
HS22081685-02	Trip Blank	30 Aug 2022 00:00			03 Sep 2022 15:35	1
Batch ID: R416517 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22081685-01	LH18/24-SP650_083022	30 Aug 2022 13:00			04 Sep 2022 14:44	20
HS22081685-01	LH18/24-SP650_083022	30 Aug 2022 13:00			04 Sep 2022 14:38	2

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ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220903** Units: **ug/L** Analysis Date: **03-Sep-2022 13:07**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220903** Units: **ug/L** Analysis Date: **03-Sep-2022 13:07**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.48*	*1.0*	*50*	*0*	*91.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.44*	*1.0*	*50*	*0*	*92.9*	*85 - 114*				
Surr: Dibromofluoromethane	*46.13*	*1.0*	*50*	*0*	*92.3*	*80 - 119*				
Surr: Toluene-d8	*54.72*	*1.0*	*50*	*0*	*109*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220903** Units: **ug/L** Analysis Date: **03-Sep-2022 12:04**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834175** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.59	1.0	20	0	98.0	78 - 124				
1,1,1-Trichloroethane	19.5	1.0	20	0	97.5	74 - 131				
1,1,2,2-Tetrachloroethane	18.5	1.0	20	0	92.5	71 - 121				
1,1,2-Trichloroethane	19.18	1.0	20	0	95.9	80 - 119				
1,1-Dichloroethane	19.55	1.0	20	0	97.7	77 - 125				
1,1-Dichloroethene	18.65	1.0	20	0	93.3	71 - 131				
1,1-Dichloropropene	20.13	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	18.39	1.0	20	0	92.0	69 - 129				
1,2,3-Trichloropropane	17.95	1.0	20	0	89.7	73 - 122				
1,2,4-Trichlorobenzene	18.6	1.0	20	0	93.0	69 - 130				
1,2,4-Trimethylbenzene	20.29	1.0	20	0	101	76 - 124				
1,2-Dibromo-3-chloropropane	18.05	1.0	20	0	90.2	62 - 128				
1,2-Dibromoethane	18.79	1.0	20	0	94.0	77 - 121				
1,2-Dichlorobenzene	19.58	1.0	20	0	97.9	80 - 119				
1,2-Dichloroethane	18.93	1.0	20	0	94.7	73 - 128				
1,2-Dichloropropane	19.83	1.0	20	0	99.1	78 - 122				
1,3,5-Trimethylbenzene	20.73	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.17	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.28	1.0	20	0	96.4	80 - 119				
1,4-Dichlorobenzene	19.88	1.0	20	0	99.4	79 - 118				
2,2-Dichloropropane	20.12	1.0	20	0	101	60 - 139				
2-Butanone	33.98	2.0	40	0	84.9	56 - 143				
2-Chlorotoluene	20.14	1.0	20	0	101	79 - 122				
2-Hexanone	37.37	2.0	40	0	93.4	57 - 139				
4-Chlorotoluene	20.11	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	21.26	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	36.53	2.0	40	0	91.3	67 - 130				
Acetone	42.65	2.0	40	0	107	39 - 160				
Benzene	19.58	1.0	20	0	97.9	79 - 120				
Bromobenzene	20.1	1.0	20	0	101	80 - 120				
Bromochloromethane	18.72	1.0	20	0	93.6	78 - 123				
Bromodichloromethane	19.47	1.0	20	0	97.4	79 - 125				
Bromoform	17.8	1.0	20	0	89.0	66 - 130				
Bromomethane	19.59	1.0	20	0	98.0	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220903** Units: **ug/L** Analysis Date: **03-Sep-2022 12:04**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834175** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.59	2.0	40	0	101	64 - 133				
Carbon tetrachloride	19.33	1.0	20	0	96.7	72 - 136				
Chlorobenzene	20.07	1.0	20	0	100	82 - 118				
Chloroethane	18.99	1.0	20	0	94.9	60 - 138				
Chloroform	19.34	1.0	20	0	96.7	79 - 124				
Chloromethane	20.52	1.0	20	0	103	50 - 139				
cis-1,2-Dichloroethene	19.73	1.0	20	0	98.7	78 - 123				
cis-1,3-Dichloropropene	19.33	1.0	20	0	96.6	75 - 124				
Dibromochloromethane	19.12	1.0	20	0	95.6	74 - 126				
Dibromomethane	19.03	1.0	20	0	95.2	79 - 123				
Dichlorodifluoromethane	17.78	1.0	20	0	88.9	32 - 152				
Ethylbenzene	20.25	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	20.55	1.0	20	0	103	66 - 134				
Isopropylbenzene	20.59	1.0	20	0	103	72 - 131				
m,p-Xylene	41.23	2.0	40	0	103	80 - 121				
Methylene chloride	20.43	2.0	20	0	102	74 - 124				
Naphthalene	18.01	1.0	20	0	90.1	61 - 128				
n-Butylbenzene	21.8	1.0	20	0	109	75 - 128				
n-Propylbenzene	21.54	1.0	20	0	108	76 - 126				
o-Xylene	20.03	1.0	20	0	100	78 - 122				
sec-Butylbenzene	21.34	1.0	20	0	107	77 - 126				
Styrene	19.96	1.0	20	0	99.8	78 - 123				
tert-Butylbenzene	20.83	1.0	20	0	104	78 - 124				
Tetrachloroethene	20.25	1.0	20	0	101	74 - 129				
Toluene	20.08	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	19.32	1.0	20	0	96.6	75 - 124				
trans-1,3-Dichloropropene	19.14	1.0	20	0	95.7	73 - 127				
Trichloroethene	19.64	1.0	20	0	98.2	79 - 123				
Trichlorofluoromethane	19.07	1.0	20	0	95.3	65 - 141				
Vinyl chloride	18.57	1.0	20	0	92.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.69*	*1.0*	*50*	*0*	*101*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.43*	*1.0*	*50*	*0*	*98.9*	*85 - 114*				
Surr: Dibromofluoromethane	*51.2*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*50.37*	*1.0*	*50*	*0*	*101*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090111-01MS** Units: **ug/L** Analysis Date: **03-Sep-2022 14:10**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834178** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.51	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	19.43	1.0	20	0	97.2	74 - 131				
1,1,2,2-Tetrachloroethane	19.98	1.0	20	0	99.9	71 - 121				
1,1,2-Trichloroethane	20.54	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	18.83	1.0	20	0	94.2	77 - 125				
1,1-Dichloroethene	19.16	1.0	20	0	95.8	71 - 131				
1,1-Dichloropropene	20.67	1.0	20	0	103	78 - 125				
1,2,3-Trichlorobenzene	15.36	1.0	20	0	76.8	69 - 129				
1,2,3-Trichloropropane	19.47	1.0	20	0	97.3	73 - 122				
1,2,4-Trichlorobenzene	17.92	1.0	20	0	89.6	69 - 130				
1,2,4-Trimethylbenzene	22.24	1.0	20	0	111	76 - 124				
1,2-Dibromo-3-chloropropane	17.91	1.0	20	0	89.6	62 - 128				
1,2-Dibromoethane	20.1	1.0	20	0	100	77 - 121				
1,2-Dichlorobenzene	21.06	1.0	20	0	105	80 - 119				
1,2-Dichloroethane	18.81	1.0	20	0	94.0	73 - 128				
1,2-Dichloropropane	19.25	1.0	20	0	96.3	78 - 122				
1,3,5-Trimethylbenzene	22.63	1.0	20	0	113	75 - 124				
1,3-Dichlorobenzene	21.78	1.0	20	0	109	80 - 119				
1,3-Dichloropropane	20.13	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	20.97	1.0	20	0	105	79 - 118				
2,2-Dichloropropane	19.34	1.0	20	0	96.7	60 - 139				
2-Butanone	30.35	2.0	40	0	75.9	56 - 143				
2-Chlorotoluene	21.51	1.0	20	0	108	79 - 122				
2-Hexanone	35.64	2.0	40	0	89.1	57 - 139				
4-Chlorotoluene	21.93	1.0	20	0	110	78 - 122				
4-Isopropyltoluene	23.14	1.0	20	0	116	77 - 127				
4-Methyl-2-pentanone	39.52	2.0	40	0	98.8	67 - 130				
Acetone	27.01	2.0	40	0	67.5	39 - 160				
Benzene	19.84	1.0	20	0	99.2	79 - 120				
Bromobenzene	22	1.0	20	0	110	80 - 120				
Bromochloromethane	17.5	1.0	20	0	87.5	78 - 123				
Bromodichloromethane	19.31	1.0	20	0	96.5	79 - 125				
Bromoform	18.2	1.0	20	0	91.0	66 - 130				
Bromomethane	19.54	1.0	20	0	97.7	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090111-01MS** Units: **ug/L** Analysis Date: **03-Sep-2022 14:10**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834178** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.28	2.0	40	0	98.2	64 - 133				
Carbon tetrachloride	20.22	1.0	20	0	101	72 - 136				
Chlorobenzene	21.24	1.0	20	0	106	82 - 118				
Chloroethane	18.38	1.0	20	0	91.9	60 - 138				
Chloroform	18.49	1.0	20	0	92.5	79 - 124				
Chloromethane	19.05	1.0	20	0	95.3	50 - 139				
cis-1,2-Dichloroethene	18.85	1.0	20	0	94.2	78 - 123				
cis-1,3-Dichloropropene	19.43	1.0	20	0	97.1	75 - 124				
Dibromochloromethane	19.93	1.0	20	0	99.7	74 - 126				
Dibromomethane	18.85	1.0	20	0	94.3	79 - 123				
Dichlorodifluoromethane	16.67	1.0	20	0	83.3	32 - 152				
Ethylbenzene	21.61	1.0	20	0	108	79 - 121				
Hexachlorobutadiene	21.94	1.0	20	0	110	66 - 134				
Isopropylbenzene	22.12	1.0	20	0	111	72 - 131				
m,p-Xylene	44.23	2.0	40	0	111	80 - 121				
Methylene chloride	19.12	2.0	20	0	95.6	74 - 124				
Naphthalene	13.35	1.0	20	0	66.8	61 - 128				
n-Butylbenzene	23.96	1.0	20	0	120	75 - 128				
n-Propylbenzene	24.08	1.0	20	0	120	76 - 126				
o-Xylene	21.5	1.0	20	0	107	78 - 122				
sec-Butylbenzene	23.6	1.0	20	0	118	77 - 126				
Styrene	21.01	1.0	20	0	105	78 - 123				
tert-Butylbenzene	23.4	1.0	20	0	117	78 - 124				
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129				
Toluene	21.35	1.0	20	0	107	80 - 121				
trans-1,2-Dichloroethene	19.49	1.0	20	0	97.5	75 - 124				
trans-1,3-Dichloropropene	18.61	1.0	20	0	93.1	73 - 127				
Trichloroethene	20.54	1.0	20	0	103	79 - 123				
Trichlorofluoromethane	19.93	1.0	20	0	99.6	65 - 141				
Vinyl chloride	18.06	1.0	20	0	90.3	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.87*	*1.0*	*50*	*0*	*91.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.96*	*1.0*	*50*	*0*	*95.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.89*	*1.0*	*50*	*0*	*95.8*	*80 - 119*				
Surr: Toluene-d8	*54.04*	*1.0*	*50*	*0*	*108*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22090111-01MSD** Units: **ug/L** Analysis Date: **03-Sep-2022 14:31**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834179** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.62	1.0	20	0	103	78 - 124	20.51	0.533	20	
1,1,1-Trichloroethane	19.11	1.0	20	0	95.6	74 - 131	19.43	1.65	20	
1,1,2,2-Tetrachloroethane	20.71	1.0	20	0	104	71 - 121	19.98	3.61	20	
1,1,2-Trichloroethane	20.67	1.0	20	0	103	80 - 119	20.54	0.595	20	
1,1-Dichloroethane	18.39	1.0	20	0	92.0	77 - 125	18.83	2.37	20	
1,1-Dichloroethene	18.86	1.0	20	0	94.3	71 - 131	19.16	1.57	20	
1,1-Dichloropropene	21.36	1.0	20	0	107	78 - 125	20.67	3.32	20	
1,2,3-Trichlorobenzene	19.9	1.0	20	0	99.5	69 - 129	15.36	25.8	20	R
1,2,3-Trichloropropane	19.41	1.0	20	0	97.0	73 - 122	19.47	0.316	20	
1,2,4-Trichlorobenzene	20.65	1.0	20	0	103	69 - 130	17.92	14.2	20	
1,2,4-Trimethylbenzene	21.92	1.0	20	0	110	76 - 124	22.24	1.43	20	
1,2-Dibromo-3-chloropropane	18.99	1.0	20	0	95.0	62 - 128	17.91	5.85	20	
1,2-Dibromoethane	20.51	1.0	20	0	103	77 - 121	20.1	2.03	20	
1,2-Dichlorobenzene	20.97	1.0	20	0	105	80 - 119	21.06	0.425	20	
1,2-Dichloroethane	19.1	1.0	20	0	95.5	73 - 128	18.81	1.54	20	
1,2-Dichloropropane	19.68	1.0	20	0	98.4	78 - 122	19.25	2.19	20	
1,3,5-Trimethylbenzene	22.06	1.0	20	0	110	75 - 124	22.63	2.55	20	
1,3-Dichlorobenzene	21.66	1.0	20	0	108	80 - 119	21.78	0.584	20	
1,3-Dichloropropane	20.37	1.0	20	0	102	80 - 119	20.13	1.16	20	
1,4-Dichlorobenzene	21.15	1.0	20	0	106	79 - 118	20.97	0.847	20	
2,2-Dichloropropane	19.46	1.0	20	0	97.3	60 - 139	19.34	0.643	20	
2-Butanone	33.38	2.0	40	0	83.5	56 - 143	30.35	9.52	20	
2-Chlorotoluene	20.8	1.0	20	0	104	79 - 122	21.51	3.36	20	
2-Hexanone	39.47	2.0	40	0	98.7	57 - 139	35.64	10.2	20	
4-Chlorotoluene	21.39	1.0	20	0	107	78 - 122	21.93	2.49	20	
4-Isopropyltoluene	22.99	1.0	20	0	115	77 - 127	23.14	0.655	20	
4-Methyl-2-pentanone	41.37	2.0	40	0	103	67 - 130	39.52	4.58	20	
Acetone	28.9	2.0	40	0	72.2	39 - 160	27.01	6.77	20	
Benzene	20.07	1.0	20	0	100	79 - 120	19.84	1.14	20	
Bromobenzene	21.37	1.0	20	0	107	80 - 120	22	2.9	20	
Bromochloromethane	17.87	1.0	20	0	89.4	78 - 123	17.5	2.09	20	
Bromodichloromethane	19.7	1.0	20	0	98.5	79 - 125	19.31	1.99	20	
Bromoform	18.9	1.0	20	0	94.5	66 - 130	18.2	3.74	20	
Bromomethane	18.39	1.0	20	0	92.0	53 - 141	19.54	6.06	20	

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416503 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22090111-01MSD** Units: **ug/L** Analysis Date: **03-Sep-2022 14:31**
Client ID: Run ID: **VOA6_416503** SeqNo: **6834179** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.8	2.0	40	0	97.0	64 - 133	39.28	1.25	20	
Carbon tetrachloride	20.13	1.0	20	0	101	72 - 136	20.22	0.472	20	
Chlorobenzene	20.96	1.0	20	0	105	82 - 118	21.24	1.35	20	
Chloroethane	18.32	1.0	20	0	91.6	60 - 138	18.38	0.306	20	
Chloroform	18.48	1.0	20	0	92.4	79 - 124	18.49	0.0761	20	
Chloromethane	19.3	1.0	20	0	96.5	50 - 139	19.05	1.28	20	
cis-1,2-Dichloroethene	18.93	1.0	20	0	94.6	78 - 123	18.85	0.427	20	
cis-1,3-Dichloropropene	19.74	1.0	20	0	98.7	75 - 124	19.43	1.61	20	
Dibromochloromethane	19.95	1.0	20	0	99.7	74 - 126	19.93	0.0744	20	
Dibromomethane	19.46	1.0	20	0	97.3	79 - 123	18.85	3.16	20	
Dichlorodifluoromethane	16.25	1.0	20	0	81.3	32 - 152	16.67	2.54	20	
Ethylbenzene	21.84	1.0	20	0	109	79 - 121	21.61	1.07	20	
Hexachlorobutadiene	22.68	1.0	20	0	113	66 - 134	21.94	3.29	20	
Isopropylbenzene	22.17	1.0	20	0	111	72 - 131	22.12	0.216	20	
m,p-Xylene	44.14	2.0	40	0	110	80 - 121	44.23	0.195	20	
Methylene chloride	19.37	2.0	20	0	96.9	74 - 124	19.12	1.32	20	
Naphthalene	18.19	1.0	20	0	90.9	61 - 128	13.35	30.7	20	R
n-Butylbenzene	23.54	1.0	20	0	118	75 - 128	23.96	1.75	20	
n-Propylbenzene	23.1	1.0	20	0	116	76 - 126	24.08	4.14	20	
o-Xylene	21.11	1.0	20	0	106	78 - 122	21.5	1.83	20	
sec-Butylbenzene	23.19	1.0	20	0	116	77 - 126	23.6	1.74	20	
Styrene	21.19	1.0	20	0	106	78 - 123	21.01	0.876	20	
tert-Butylbenzene	22.76	1.0	20	0	114	78 - 124	23.4	2.78	20	
Tetrachloroethene	22.16	1.0	20	0	111	74 - 129	22.33	0.758	20	
Toluene	21.1	1.0	20	0	105	80 - 121	21.35	1.18	20	
trans-1,2-Dichloroethene	18.95	1.0	20	0	94.8	75 - 124	19.49	2.83	20	
trans-1,3-Dichloropropene	19.56	1.0	20	0	97.8	73 - 127	18.61	4.99	20	
Trichloroethene	20.43	1.0	20	0	102	79 - 123	20.54	0.511	20	
Trichlorofluoromethane	19.31	1.0	20	0	96.5	65 - 141	19.93	3.15	20	
Vinyl chloride	18.17	1.0	20	0	90.8	58 - 137	18.06	0.574	20	
Surr: 1,2-Dichloroethane-d4	*45.16*	*1.0*	*50*	*0*	*90.3*	*81 - 118*	*45.87*	*1.56*	*20*	
Surr: 4-Bromofluorobenzene	*48.82*	*1.0*	*50*	*0*	*97.6*	*85 - 114*	*47.96*	*1.78*	*20*	
Surr: Dibromofluoromethane	*47.33*	*1.0*	*50*	*0*	*94.7*	*80 - 119*	*47.89*	*1.17*	*20*	
Surr: Toluene-d8	*53.16*	*1.0*	*50*	*0*	*106*	*89 - 112*	*54.04*	*1.65*	*20*	

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22081685

QC BATCH REPORT

Batch ID:	**R416503 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22081685-01 HS22081685-02

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22081685

QC BATCH REPORT

Batch ID: R416517 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Sep-2022 12:37**
Client ID: Run ID: **ICS-Integrion_416517** SeqNo: **6834692** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Sep-2022 12:47**
Client ID: Run ID: **ICS-Integrion_416517** SeqNo: **6834693** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.04	0.500	20	0	100	80 - 120				
Sulfate	20.33	0.500	20	0	102	80 - 120				

MS Sample ID: **HS22081733-06MS** Units: **mg/L** Analysis Date: **04-Sep-2022 12:58**
Client ID: Run ID: **ICS-Integrion_416517** SeqNo: **6834695** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	33.07	0.500	10	23.41	96.6	80 - 120				
Sulfate	23.59	0.500	10	13.57	100	80 - 120				

MSD Sample ID: **HS22081733-06MSD** Units: **mg/L** Analysis Date: **04-Sep-2022 13:03**
Client ID: Run ID: **ICS-Integrion_416517** SeqNo: **6834696** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	33.05	0.500	10	23.41	96.4	80 - 120	33.07	0.0635	20	
Sulfate	23.56	0.500	10	13.57	99.9	80 - 120	23.59	0.118	20	

The following samples were analyzed in this batch: HS22081685-01

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22081685**

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

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Sep-22

Sample Receipt Checklist

Work Order ID: HS22081685 **Date/Time Received:** **31-Aug-2022 09:15**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By:	/S/ Paresh M. Giga	31-Aug-2022 12:49	**Reviewed by:**	/S/ Dane J. Wacasey	06-Sep-2022 08:44
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	1.8C/1.6C U/C	IR31	
Cooler(s)/Kit(s):	46450		
Date/Time sample(s) sent to storage:	8/31/22 12:55		
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:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O Number

HS22081685

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi-Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_083022	Water	08/30/22 / 13:00		3	3		HCL	
LH18/24-SP650_083022	Water	08/30/22 / 13:00		1		1	NONE	
Trip Blank	Water	08/30/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	08/30/22	13:30	[signature]	8/31/22	09:15						

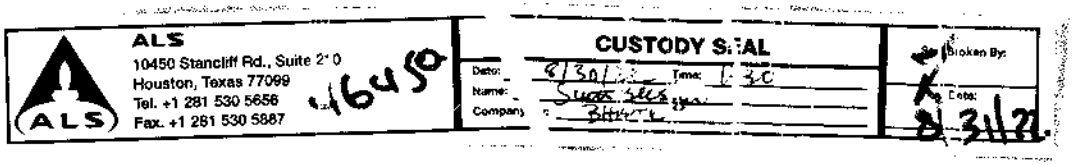
9For Lab Use Only

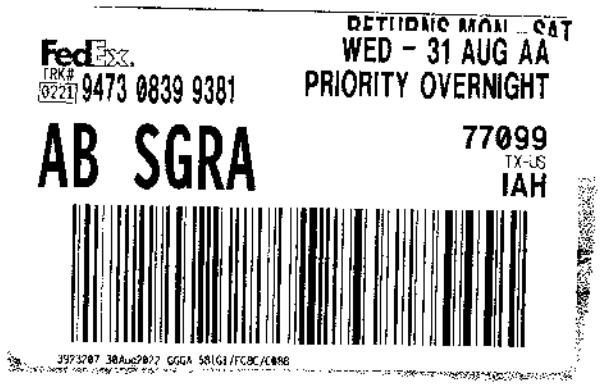
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks: JG455 Lot #51 Cl2 -0.2

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

RIGHT SOLUTIONS | RIGHT PARTNER





RIGHT SOLUTIONS | RIGHT PARTNER

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 15, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22090337**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Effluent Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 08, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22090337

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22090337-01	LH18/24-SP650_090722	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐
HS22090337-02	LH18/24-SP650_090722_AIX	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐
HS22090337-03	Trip Blank	Water	CG-020822-745	07-Sep-2022 00:00	08-Sep-2022 09:40	☐

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
Work Order: HS22090337

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 183499

Sample ID: LH18/24-SP650_090722 (HS22090337-01)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R417074

Sample ID: Trip Blank (HS22090337-03)

- Detection in trip blank confirmed with re-analysis.

Sample ID: LH18/24-SP650_090722 (HS22090337-01MS)

- The recovery of the Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) associated to select analytes were outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MS/MSD may be due to sample matrix interference.

Metals by Method SW6020A

Batch ID: 183432

Sample ID: LH18/24-SP650_090722 (HS22090337-01MS)

- Selenium failed for MS/MSD but passed for PDS.

- 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. (Barium)

Wet Chemistry by Method SW7196

Batch ID: R416747

Sample ID: LH18/24-SP650_090722 (HS22090337-01MSD)

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

WetChemistry by Method SW7196

Batch ID: R416747

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22090337
Sample ID: LH18/24-SP650_090722 Lab ID:HS22090337-01
Collection Date: 07-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	13-Sep-2022 13:05
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	13-Sep-2022 13:05
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	13-Sep-2022 13:05
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	13-Sep-2022 13:05
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	13-Sep-2022 13:05
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22090337
Sample ID: LH18/24-SP650_090722 Lab ID:HS22090337-01
Collection Date: 07-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
cis-1,2-Dichloroethene	**2.8**		**0.20**	**0.50**	**1.0**	**ug/L**	1	13-Sep-2022 13:05
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	13-Sep-2022 13:05
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	13-Sep-2022 13:05
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 13:05
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 13:05
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 13:05
Surr: 1,2-Dichloroethane-d4	*88.7*			**0**	*81-118*	*%REC*	*1*	*13-Sep-2022 13:05*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*13-Sep-2022 13:05*
Surr: Dibromofluoromethane	*92.9*			**0**	*80-119*	*%REC*	*1*	*13-Sep-2022 13:05*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*13-Sep-2022 13:05*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Sep-2022		Analyst: MBG
1,4-Dioxane	**7.8**	a	**1.0**	**1.0**	**1.0**	**ug/L**	100	15-Sep-2022 14:35
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*15-Sep-2022 14:35*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*15-Sep-2022 14:35*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*15-Sep-2022 14:35*
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 12-Sep-2022		Analyst: JC
Barium	**0.242**		**0.0190**	**0.0250**	**0.0500**	**mg/L**	10	13-Sep-2022 12:45
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	13-Sep-2022 12:12
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	13-Sep-2022 12:12
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	13-Sep-2022 12:12

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder:HS22090337
Sample ID: LH18/24-SP650_090722
Lab ID:HS22090337-01
Collection Date: 07-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: MZD
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	08-Sep-2022 11:26

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22090337

Sample ID: LH18/24-SP650_090722_AIX Lab ID:HS22090337-02

Collection Date: 07-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	15-Sep-2022 16:09

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22090337
Sample ID: Trip Blank Lab ID:HS22090337-03
Collection Date: 07-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	13-Sep-2022 12:44
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	13-Sep-2022 12:44
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	13-Sep-2022 12:44
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	13-Sep-2022 12:44
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	13-Sep-2022 12:44
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Monthly Effluent Samples WorkOrder:HS22090337

Sample ID: Trip Blank Lab ID:HS22090337-03

Collection Date: 07-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	13-Sep-2022 12:44
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	13-Sep-2022 12:44
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	13-Sep-2022 12:44
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	13-Sep-2022 12:44
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Trichlorofluoromethane	**3.7**		**0.30**	**1.0**	**1.0**	**ug/L**	1	13-Sep-2022 12:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	13-Sep-2022 12:44
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*1*	*13-Sep-2022 12:44*
Surr: 4-Bromofluorobenzene	*96.7*			**0**	*85-114*	*%REC*	*1*	*13-Sep-2022 12:44*
Surr: Dibromofluoromethane	*93.4*			**0**	*80-119*	*%REC*	*1*	*13-Sep-2022 12:44*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*13-Sep-2022 12:44*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

Batch ID: 183432 **Start Date:** 12 Sep 2022 11:00 **End Date:** 12 Sep 2022 16:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22090337-01		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 183499 **Start Date:** 13 Sep 2022 07:00 **End Date:** 13 Sep 2022 10:00
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22090337-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 183432 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22090337-01	LH18/24-SP650_090722	07 Sep 2022 13:00		12 Sep 2022 09:00	13 Sep 2022 12:45	10
HS22090337-01	LH18/24-SP650_090722	07 Sep 2022 13:00		12 Sep 2022 09:00	13 Sep 2022 12:12	1
Batch ID: 183499 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22090337-01	LH18/24-SP650_090722	07 Sep 2022 13:00		13 Sep 2022 12:58	15 Sep 2022 14:35	100
Batch ID: R416747 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22090337-01	LH18/24-SP650_090722	07 Sep 2022 13:00			08 Sep 2022 11:26	1
Batch ID: R417074 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22090337-01	LH18/24-SP650_090722	07 Sep 2022 13:00			13 Sep 2022 13:05	1
HS22090337-03	Trip Blank	07 Sep 2022 00:00			13 Sep 2022 12:44	1
Batch ID: R417256 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22090337-02	LH18/24-SP650_090722_AIX	07 Sep 2022 13:00			15 Sep 2022 16:09	1

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: 183432 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-183432** Units: **mg/L** Analysis Date: **13-Sep-2022 12:08**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846116** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00500								U
Lead	0.00125	0.00500								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-183432** Units: **mg/L** Analysis Date: **13-Sep-2022 12:10**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846117** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.05041	0.00500	0.05	0	101	86 - 114				
Lead	0.04627	0.00500	0.05	0	92.5	88 - 115				
Selenium	0.05316	0.00500	0.05	0	106	80 - 120				
Silver	0.04809	0.00500	0.05	0	96.2	85 - 116				

MS Sample ID: **HS22090337-01MS** Units: **mg/L** Analysis Date: **13-Sep-2022 12:15**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846120** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.3162	0.00500	0.05	0.2478	137	86 - 114				SO
Lead	0.04637	0.00500	0.05	-0.000798	94.3	88 - 115				
Selenium	0.02673	0.00500	0.05	0.000273	52.9	80 - 120				S
Silver	0.04279	0.00500	0.05	-0.000005	85.6	85 - 116				

MSD Sample ID: **HS22090337-01MSD** Units: **mg/L** Analysis Date: **13-Sep-2022 12:17**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846121** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.3273	0.00500	0.05	0.2478	159	86 - 114	0.3162	3.44	20	SO
Lead	0.04757	0.00500	0.05	-0.000798	96.7	88 - 115	0.04637	2.56	20	
Selenium	0.02996	0.00500	0.05	0.000273	59.4	80 - 120	0.02673	11.4	20	S
Silver	0.04616	0.00500	0.05	-0.000005	92.3	85 - 116	0.04279	7.56	20	

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: 183432 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22090337-01PDS** Units: **mg/L** Analysis Date: **13-Sep-2022 12:49**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846378** PrepDate: **12-Sep-2022** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	1.203	0.0500	1	0.2424	96.1	80 - 120				

PDS Sample ID: **HS22090337-01PDS** Units: **mg/L** Analysis Date: **13-Sep-2022 12:19**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846122** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.1036	0.00500	0.1	-0.000798	104	80 - 120				
Selenium	0.1052	0.00500	0.1	0.000273	105	80 - 120				
Silver	0.0996	0.00500	0.1	-0.000005	99.6	80 - 120				

SD Sample ID: **HS22090337-01SD** Units: **mg/L** Analysis Date: **13-Sep-2022 12:47**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846377** PrepDate: **12-Sep-2022** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.2387	0.250					0.2424	0	10	J

SD Sample ID: **HS22090337-01SD** Units: **mg/L** Analysis Date: **13-Sep-2022 12:14**
Client ID: **LH18/24-SP650_090722** Run ID: **ICPMS07_417005** SeqNo: **6846119** PrepDate: **12-Sep-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Lead	0.00625	0.0250					-0.000798	0	10	U
Selenium	0.0125	0.0250					0.000273	0	10	U
Silver	0.00250	0.0250					-0.000005	0	10	U

The following samples were analyzed in this batch: HS22090337-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: 183499 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-183499** Units: **ug/L** Analysis Date: **15-Sep-2022 13:13**
Client ID: Run ID: **SV-6_417251** SeqNo: **6851692** PrepDate: **13-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.05529*	*0*	*0.08*	*0*	*69.1*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.06184*	*0*	*0.08*	*0*	*77.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07834*	*0*	*0.08*	*0*	*97.9*	*40 - 140*				

LCS Sample ID: **LCS-183499** Units: **ug/L** Analysis Date: **15-Sep-2022 13:31**
Client ID: Run ID: **SV-6_417251** SeqNo: **6851693** PrepDate: **13-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.07073	0.010	0.08	0	88.4	40 - 140				
Surr: 2-Fluorobiphenyl	*0.06274*	*0*	*0.08*	*0*	*78.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0607*	*0*	*0.08*	*0*	*75.9*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.06381*	*0*	*0.08*	*0*	*79.8*	*40 - 140*				

LCSD Sample ID: **LCSD-183499** Units: **ug/L** Analysis Date: **15-Sep-2022 13:49**
Client ID: Run ID: **SV-6_417251** SeqNo: **6851694** PrepDate: **13-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06632	0.010	0.08	0	82.9	40 - 140	0.07073	6.43	20	
Surr: 2-Fluorobiphenyl	*0.05796*	*0*	*0.08*	*0*	*72.5*	*40 - 140*	*0.06274*	*7.92*	*20*	
Surr: 4-Terphenyl-d14	*0.05104*	*0*	*0.08*	*0*	*63.8*	*40 - 140*	*0.0607*	*17.3*	*20*	
Surr: Nitrobenzene-d5	*0.05946*	*0*	*0.08*	*0*	*74.3*	*40 - 140*	*0.06381*	*7.07*	*20*	

The following samples were analyzed in this batch: HS22090337-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220913** Units: **ug/L** Analysis Date: **13-Sep-2022 12:23**
Client ID: Run ID: **VOA6_417074** SeqNo: **6847261** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220913** Units: **ug/L** Analysis Date: **13-Sep-2022 12:23**
Client ID: Run ID: **VOA6_417074** SeqNo: **6847261** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.74*	*1.0*	*50*	*0*	*89.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.03*	*1.0*	*50*	*0*	*94.1*	*85 - 114*				
Surr: Dibromofluoromethane	*45.78*	*1.0*	*50*	*0*	*91.6*	*80 - 119*				
Surr: Toluene-d8	*54.02*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220913** Units: **ug/L** Analysis Date: **13-Sep-2022 11:41**
Client ID: Run ID: **VOA6_417074** SeqNo: **6847260** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.33	1.0	20	0	102	78 - 124				
1,1,1-Trichloroethane	19.98	1.0	20	0	99.9	74 - 131				
1,1,2,2-Tetrachloroethane	20.2	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	19.55	1.0	20	0	97.8	80 - 119				
1,1-Dichloroethane	20.81	1.0	20	0	104	77 - 125				
1,1-Dichloroethene	20.12	1.0	20	0	101	71 - 131				
1,1-Dichloropropene	20.71	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	24.23	1.0	20	0	121	69 - 129				
1,2,3-Trichloropropane	20.59	1.0	20	0	103	73 - 122				
1,2,4-Trichlorobenzene	22.4	1.0	20	0	112	69 - 130				
1,2,4-Trimethylbenzene	20.92	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	22.67	1.0	20	0	113	62 - 128				
1,2-Dibromoethane	20.36	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.89	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	19.19	1.0	20	0	95.9	73 - 128				
1,2-Dichloropropane	20.13	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	20.86	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.97	1.0	20	0	105	80 - 119				
1,3-Dichloropropane	19.98	1.0	20	0	99.9	80 - 119				
1,4-Dichlorobenzene	20.87	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	20.89	1.0	20	0	104	60 - 139				
2-Butanone	36.49	2.0	40	0	91.2	56 - 143				
2-Chlorotoluene	20.1	1.0	20	0	101	79 - 122				
2-Hexanone	40.78	2.0	40	0	102	57 - 139				
4-Chlorotoluene	20.25	1.0	20	0	101	78 - 122				
4-Isopropyltoluene	21.44	1.0	20	0	107	77 - 127				
4-Methyl-2-pentanone	40.52	2.0	40	0	101	67 - 130				
Acetone	43.67	2.0	40	0	109	39 - 160				
Benzene	20.28	1.0	20	0	101	79 - 120				
Bromobenzene	21.06	1.0	20	0	105	80 - 120				
Bromochloromethane	18.77	1.0	20	0	93.9	78 - 123				
Bromodichloromethane	19.88	1.0	20	0	99.4	79 - 125				
Bromoform	19.24	1.0	20	0	96.2	66 - 130				
Bromomethane	22.1	1.0	20	0	111	53 - 141				

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-220913** Units: **ug/L** Analysis Date: **13-Sep-2022 11:41**
Client ID: Run ID: **VOA6_417074** SeqNo: **6847260** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.23	2.0	40	0	106	64 - 133				
Carbon tetrachloride	19.36	1.0	20	0	96.8	72 - 136				
Chlorobenzene	20.6	1.0	20	0	103	82 - 118				
Chloroethane	21.63	1.0	20	0	108	60 - 138				
Chloroform	19.24	1.0	20	0	96.2	79 - 124				
Chloromethane	21.42	1.0	20	0	107	50 - 139				
cis-1,2-Dichloroethene	20.43	1.0	20	0	102	78 - 123				
cis-1,3-Dichloropropene	20.23	1.0	20	0	101	75 - 124				
Dibromochloromethane	19.84	1.0	20	0	99.2	74 - 126				
Dibromomethane	19.52	1.0	20	0	97.6	79 - 123				
Dichlorodifluoromethane	21.75	1.0	20	0	109	32 - 152				
Ethylbenzene	21.07	1.0	20	0	105	79 - 121				
Hexachlorobutadiene	22.39	1.0	20	0	112	66 - 134				
Isopropylbenzene	20.43	1.0	20	0	102	72 - 131				
m,p-Xylene	42.46	2.0	40	0	106	80 - 121				
Methylene chloride	21.96	2.0	20	0	110	74 - 124				
Naphthalene	22.54	1.0	20	0	113	61 - 128				
n-Butylbenzene	21.96	1.0	20	0	110	75 - 128				
n-Propylbenzene	21.89	1.0	20	0	109	76 - 126				
o-Xylene	20.4	1.0	20	0	102	78 - 122				
sec-Butylbenzene	21.58	1.0	20	0	108	77 - 126				
Styrene	20.1	1.0	20	0	101	78 - 123				
tert-Butylbenzene	21.27	1.0	20	0	106	78 - 124				
Tetrachloroethene	20.22	1.0	20	0	101	74 - 129				
Toluene	19.77	1.0	20	0	98.8	80 - 121				
trans-1,2-Dichloroethene	21.04	1.0	20	0	105	75 - 124				
trans-1,3-Dichloropropene	19.62	1.0	20	0	98.1	73 - 127				
Trichloroethene	20.46	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	20.02	1.0	20	0	100	65 - 141				
Vinyl chloride	20.6	1.0	20	0	103	58 - 137				
Surr: 1,2-Dichloroethane-d4	*48.94*	*1.0*	*50*	*0*	*97.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.22*	*1.0*	*50*	*0*	*94.4*	*85 - 114*				
Surr: Dibromofluoromethane	*50.28*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*47.6*	*1.0*	*50*	*0*	*95.2*	*89 - 112*				

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090337-01MS** Units: **ug/L** Analysis Date: **13-Sep-2022 14:08**
Client ID: **LH18/24-SP650_090722** Run ID: **VOA6_417074** SeqNo: **6847264** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	22.83	1.0	20	0	114	78 - 124				
1,1,1-Trichloroethane	19.82	1.0	20	0	99.1	74 - 131				
1,1,2,2-Tetrachloroethane	23.18	1.0	20	0	116	71 - 121				
1,1,2-Trichloroethane	21.8	1.0	20	0	109	80 - 119				
1,1-Dichloroethane	19.55	1.0	20	0	97.8	77 - 125				
1,1-Dichloroethene	18.18	1.0	20	0	90.9	71 - 131				
1,1-Dichloropropene	22.25	1.0	20	0	111	78 - 125				
1,2,3-Trichlorobenzene	20.02	1.0	20	0	100	69 - 129				
1,2,3-Trichloropropane	22.09	1.0	20	0	110	73 - 122				
1,2,4-Trichlorobenzene	21.34	1.0	20	0	107	69 - 130				
1,2,4-Trimethylbenzene	23.96	1.0	20	0	120	76 - 124				
1,2-Dibromo-3-chloropropane	21.5	1.0	20	0	107	62 - 128				
1,2-Dibromoethane	22.14	1.0	20	0	111	77 - 121				
1,2-Dichlorobenzene	23.33	1.0	20	0	117	80 - 119				
1,2-Dichloroethane	19.89	1.0	20	0	99.5	73 - 128				
1,2-Dichloropropane	21.23	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	24.3	1.0	20	0	122	75 - 124				
1,3-Dichlorobenzene	24.66	1.0	20	0	123	80 - 119				S
1,3-Dichloropropane	22.41	1.0	20	0	112	80 - 119				
1,4-Dichlorobenzene	23.93	1.0	20	0	120	79 - 118				S
2,2-Dichloropropane	20.01	1.0	20	0	100	60 - 139				
2-Butanone	34.08	2.0	40	0	85.2	56 - 143				
2-Chlorotoluene	23.27	1.0	20	0	116	79 - 122				
2-Hexanone	46.87	2.0	40	0	117	57 - 139				
4-Chlorotoluene	23.31	1.0	20	0	117	78 - 122				
4-Isopropyltoluene	25.75	1.0	20	0	129	77 - 127				S
4-Methyl-2-pentanone	51.23	2.0	40	0	128	67 - 130				
Acetone	29.18	2.0	40	0	73.0	39 - 160				
Benzene	21.2	1.0	20	0	106	79 - 120				
Bromobenzene	24.58	1.0	20	0	123	80 - 120				S
Bromochloromethane	17.97	1.0	20	0	89.9	78 - 123				
Bromodichloromethane	20.97	1.0	20	0	105	79 - 125				
Bromoform	20.9	1.0	20	0	104	66 - 130				
Bromomethane	11.81	1.0	20	0	59.1	53 - 141				

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090337-01MS** Units: **ug/L** Analysis Date: **13-Sep-2022 14:08**
Client ID: **LH18/24-SP650_090722** Run ID: **VOA6_417074** SeqNo: **6847264** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.26	2.0	40	0	93.1	64 - 133				
Carbon tetrachloride	21.16	1.0	20	0	106	72 - 136				
Chlorobenzene	22.73	1.0	20	0	114	82 - 118				
Chloroethane	14.97	1.0	20	0	74.8	60 - 138				
Chloroform	18.6	1.0	20	0	93.0	79 - 124				
Chloromethane	32.77	1.0	20	0	164	50 - 139				S
cis-1,2-Dichloroethene	22.93	1.0	20	2.756	101	78 - 123				
cis-1,3-Dichloropropene	21.29	1.0	20	0	106	75 - 124				
Dibromochloromethane	21.79	1.0	20	0	109	74 - 126				
Dibromomethane	20.26	1.0	20	0	101	79 - 123				
Dichlorodifluoromethane	4.794	1.0	20	0	24.0	32 - 152				S
Ethylbenzene	23.54	1.0	20	0	118	79 - 121				
Hexachlorobutadiene	25.6	1.0	20	0	128	66 - 134				
Isopropylbenzene	24.4	1.0	20	0	122	72 - 131				
m,p-Xylene	48.48	2.0	40	0	121	80 - 121				S
Methylene chloride	19.96	2.0	20	0	99.8	74 - 124				
Naphthalene	18.06	1.0	20	0	90.3	61 - 128				
n-Butylbenzene	25.73	1.0	20	0	129	75 - 128				S
n-Propylbenzene	25.98	1.0	20	0	130	76 - 126				S
o-Xylene	23.21	1.0	20	0	116	78 - 122				
sec-Butylbenzene	26.15	1.0	20	0	131	77 - 126				S
Styrene	23.15	1.0	20	0	116	78 - 123				
tert-Butylbenzene	25.48	1.0	20	0	127	78 - 124				S
Tetrachloroethene	23.57	1.0	20	0	118	74 - 129				
Toluene	23.69	1.0	20	0	118	80 - 121				
trans-1,2-Dichloroethene	20.27	1.0	20	0	101	75 - 124				
trans-1,3-Dichloropropene	20.34	1.0	20	0	102	73 - 127				
Trichloroethene	22.07	1.0	20	0	110	79 - 123				
Trichlorofluoromethane	17.68	1.0	20	0	88.4	65 - 141				
Vinyl chloride	14.11	1.0	20	0	70.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.72*	*1.0*	*50*	*0*	*89.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.96*	*1.0*	*50*	*0*	*95.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.3*	*1.0*	*50*	*0*	*94.6*	*80 - 119*				
Surr: Toluene-d8	*56.37*	*1.0*	*50*	*0*	*113*	*89 - 112*				S

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22090337-01MSD** Units: **ug/L** Analysis Date: **13-Sep-2022 14:30**
Client ID: **LH18/24-SP650_090722** Run ID: **VOA6_417074** SeqNo: **6847265** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.76	1.0	20	0	109	78 - 124	22.83	4.81	20	
1,1,1-Trichloroethane	19.37	1.0	20	0	96.9	74 - 131	19.82	2.31	20	
1,1,2,2-Tetrachloroethane	23.68	1.0	20	0	118	71 - 121	23.18	2.15	20	
1,1,2-Trichloroethane	21.68	1.0	20	0	108	80 - 119	21.8	0.558	20	
1,1-Dichloroethane	19.33	1.0	20	0	96.6	77 - 125	19.55	1.16	20	
1,1-Dichloroethene	17.62	1.0	20	0	88.1	71 - 131	18.18	3.12	20	
1,1-Dichloropropene	20.55	1.0	20	0	103	78 - 125	22.25	7.94	20	
1,2,3-Trichlorobenzene	28.04	1.0	20	0	140	69 - 129	20.02	33.4	20	SR
1,2,3-Trichloropropane	22.24	1.0	20	0	111	73 - 122	22.09	0.685	20	
1,2,4-Trichlorobenzene	26.71	1.0	20	0	134	69 - 130	21.34	22.3	20	SR
1,2,4-Trimethylbenzene	23.44	1.0	20	0	117	76 - 124	23.96	2.18	20	
1,2-Dibromo-3-chloropropane	24.84	1.0	20	0	124	62 - 128	21.5	14.4	20	
1,2-Dibromoethane	21.75	1.0	20	0	109	77 - 121	22.14	1.77	20	
1,2-Dichlorobenzene	24.27	1.0	20	0	121	80 - 119	23.33	3.95	20	S
1,2-Dichloroethane	18.76	1.0	20	0	93.8	73 - 128	19.89	5.85	20	
1,2-Dichloropropane	20.38	1.0	20	0	102	78 - 122	21.23	4.09	20	
1,3,5-Trimethylbenzene	23.31	1.0	20	0	117	75 - 124	24.3	4.18	20	
1,3-Dichlorobenzene	23.83	1.0	20	0	119	80 - 119	24.66	3.41	20	S
1,3-Dichloropropane	21.78	1.0	20	0	109	80 - 119	22.41	2.82	20	
1,4-Dichlorobenzene	23.49	1.0	20	0	117	79 - 118	23.93	1.86	20	
2,2-Dichloropropane	19.55	1.0	20	0	97.7	60 - 139	20.01	2.33	20	
2-Butanone	33.61	2.0	40	0	84.0	56 - 143	34.08	1.39	20	
2-Chlorotoluene	22.56	1.0	20	0	113	79 - 122	23.27	3.1	20	
2-Hexanone	48.25	2.0	40	0	121	57 - 139	46.87	2.89	20	
4-Chlorotoluene	22.83	1.0	20	0	114	78 - 122	23.31	2.07	20	
4-Isopropyltoluene	24.6	1.0	20	0	123	77 - 127	25.75	4.58	20	
4-Methyl-2-pentanone	50.1	2.0	40	0	125	67 - 130	51.23	2.23	20	
Acetone	31.5	2.0	40	0	78.7	39 - 160	29.18	7.63	20	
Benzene	20.01	1.0	20	0	100	79 - 120	21.2	5.76	20	
Bromobenzene	23.6	1.0	20	0	118	80 - 120	24.58	4.1	20	
Bromochloromethane	18.05	1.0	20	0	90.3	78 - 123	17.97	0.446	20	
Bromodichloromethane	19.89	1.0	20	0	99.5	79 - 125	20.97	5.29	20	
Bromoform	21.08	1.0	20	0	105	66 - 130	20.9	0.888	20	
Bromomethane	10.68	1.0	20	0	53.4	53 - 141	11.81	10.1	20	

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R417074 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22090337-01MSD** Units: **ug/L** Analysis Date: **13-Sep-2022 14:30**
Client ID: **LH18/24-SP650_090722** Run ID: **VOA6_417074** SeqNo: **6847265** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	36.11	2.0	40	0	90.3	64 - 133	37.26	3.13	20	
Carbon tetrachloride	20.31	1.0	20	0	102	72 - 136	21.16	4.11	20	
Chlorobenzene	22.01	1.0	20	0	110	82 - 118	22.73	3.21	20	
Chloroethane	11.78	1.0	20	0	58.9	60 - 138	14.97	23.9	20	SR
Chloroform	18.71	1.0	20	0	93.5	79 - 124	18.6	0.575	20	
Chloromethane	28.77	1.0	20	0	144	50 - 139	32.77	13	20	S
cis-1,2-Dichloroethene	22.64	1.0	20	2.756	99.4	78 - 123	22.93	1.28	20	
cis-1,3-Dichloropropene	20.11	1.0	20	0	101	75 - 124	21.29	5.69	20	
Dibromochloromethane	21.53	1.0	20	0	108	74 - 126	21.79	1.19	20	
Dibromomethane	20.39	1.0	20	0	102	79 - 123	20.26	0.621	20	
Dichlorodifluoromethane	4.468	1.0	20	0	22.3	32 - 152	4.794	7.04	20	S
Ethylbenzene	22.24	1.0	20	0	111	79 - 121	23.54	5.68	20	
Hexachlorobutadiene	26.63	1.0	20	0	133	66 - 134	25.6	3.96	20	
Isopropylbenzene	22.9	1.0	20	0	114	72 - 131	24.4	6.35	20	
m,p-Xylene	45.67	2.0	40	0	114	80 - 121	48.48	5.96	20	
Methylene chloride	19.63	2.0	20	0	98.1	74 - 124	19.96	1.68	20	
Naphthalene	25.59	1.0	20	0	128	61 - 128	18.06	34.5	20	R
n-Butylbenzene	25.3	1.0	20	0	127	75 - 128	25.73	1.69	20	
n-Propylbenzene	24.57	1.0	20	0	123	76 - 126	25.98	5.58	20	
o-Xylene	22.28	1.0	20	0	111	78 - 122	23.21	4.12	20	
sec-Butylbenzene	24.43	1.0	20	0	122	77 - 126	26.15	6.79	20	
Styrene	21.99	1.0	20	0	110	78 - 123	23.15	5.12	20	
tert-Butylbenzene	23.96	1.0	20	0	120	78 - 124	25.48	6.15	20	
Tetrachloroethene	22.84	1.0	20	0	114	74 - 129	23.57	3.14	20	
Toluene	21.76	1.0	20	0	109	80 - 121	23.69	8.49	20	
trans-1,2-Dichloroethene	19.64	1.0	20	0	98.2	75 - 124	20.27	3.14	20	
trans-1,3-Dichloropropene	20	1.0	20	0	100	73 - 127	20.34	1.65	20	
Trichloroethene	20.75	1.0	20	0	104	79 - 123	22.07	6.17	20	
Trichlorofluoromethane	17.46	1.0	20	0	87.3	65 - 141	17.68	1.26	20	
Vinyl chloride	13.73	1.0	20	0	68.7	58 - 137	14.11	2.76	20	
Surr: 1,2-Dichloroethane-d4	*45.7*	*1.0*	*50*	*0*	*91.4*	*81 - 118*	*44.72*	*2.16*	*20*	
Surr: 4-Bromofluorobenzene	*47.2*	*1.0*	*50*	*0*	*94.4*	*85 - 114*	*47.96*	*1.61*	*20*	
Surr: Dibromofluoromethane	*47.62*	*1.0*	*50*	*0*	*95.2*	*80 - 119*	*47.3*	*0.681*	*20*	
Surr: Toluene-d8	*52.96*	*1.0*	*50*	*0*	*106*	*89 - 112*	*56.37*	*6.23*	*20*	

ALS Houston, US Date: 15-Sep-22

Client:	Bhate Environmental Associates, Inc.	**QC BATCH REPORT**
Project:	Longhorn GW Treatment Plant Monthly Effluent Samples	
WorkOrder:	HS22090337	

Batch ID:	**R417074 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22090337-01 HS22090337-03

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: HS22090337

QC BATCH REPORT

Batch ID: R416747 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R416747** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839825** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R416747** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839824** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.239	0.0100	0.25	0	95.6	90 - 111				

MS Sample ID: **HS22090337-01MS** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: **LH18/24-SP650_090722** Run ID: **UV-2450_416747** SeqNo: **6839827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.238	0.0100	0.25	0.001	94.8	90 - 111				

MSD Sample ID: **HS22090337-01MSD** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: **LH18/24-SP650_090722** Run ID: **UV-2450_416747** SeqNo: **6839826** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.239	0.0100	0.25	0.001	95.2	90 - 111	0.238	0.419	20	

The following samples were analyzed in this batch: HS22090337-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Effluent Samples
WorkOrder: **HS22090337**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 15-Sep-22

Sample Receipt Checklist

Work Order ID: HS22090337 **Date/Time Received:** **08-Sep-2022 09:40**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By:	/S/ Paresh M. Giga	08-Sep-2022 10:48	**Reviewed by:**	/S/ Dane J. Wacasey	13-Sep-2022 09:26
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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 ☐	
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/1.9C U/c	IR31
Cooler(s)/Kit(s):	48790	
Date/Time sample(s) sent to storage:	9/8/22 11:00	

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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT MONTHLY EFFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22090337
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Effluent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE						Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_090722	Water	09/07/22 / 13:00		3	X										HCL	
LH18/24-SP650_090722	Water	09/07/22 / 13:00		2			X	X							NONE	
LH18/24-SP650_090722_AIX	Water	09/07/22 / 13:00		1					X						NONE	
LH18/24-SP650_090722	Water	09/07/22 / 13:00		1		X									HNO3	
Trip Blank	Water	09/07/22		2	X										HCL	

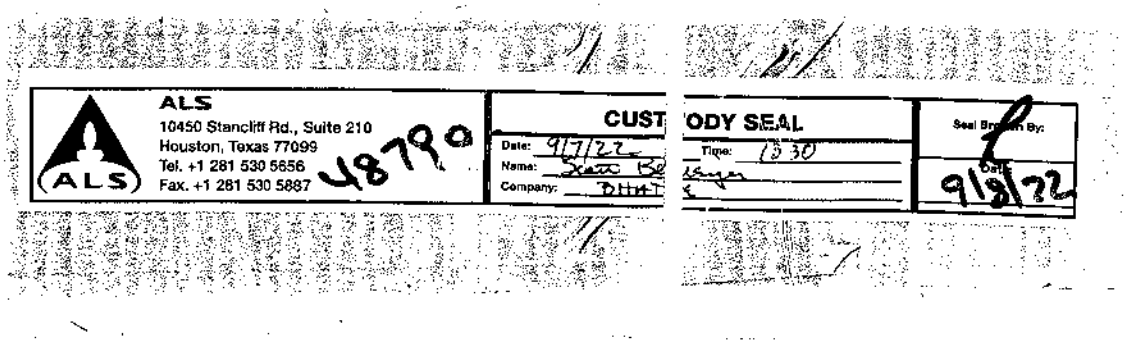
Additional Remarks: **Standard TAT on all parameters**

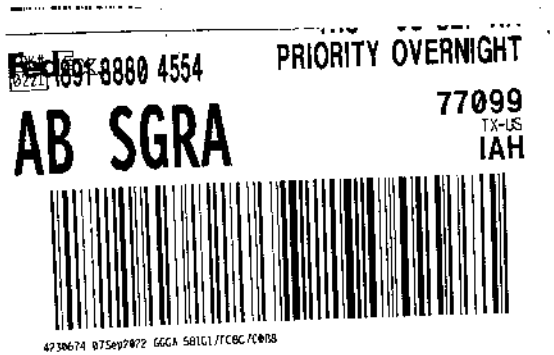
Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/07/22	13:30		9/8/22	09:40						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks: 4878 2.1 #31 CIC -0.2


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
48790
CUST
Date: 9/7/22
Name:
Company:
ODY SEAL
Time: 1530
Seal Broken By:
Date: 9/8/22


PRIORITY OVERNIGHT
8880 4554
77099
TX-US
IAH
AB SGRA

September 15, 2022 Service Request No:E2200884

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22090337

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 08, 2022
For your reference, these analyses have been assigned our service request number **E2200884.**

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

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 Environmental – US	**Service Request No.:**	E2200884
Project:	HS22090337	**Date Received:**	09/07/22
Sample Matrix:	Water		

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

One sample was received for analysis at ALS Environmental in Houston on 09/07/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200401-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200884
Project: HS22090337

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200884-001	LH18/24-SP650_090722_AIX	9/7/2022	1300

Service Request Summary

Folder #: **E2200884**
Client Name: ALS Environmental - US
Project Name: HS22090337
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/15/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090337
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200884-001	LH18/24-SP650_090722_AIX	Water	09/07/22 1300	**IV**

Service Request Summary

Folder #: **E2200884**
Client Name: ALS Environmental - US
Project Name: HS22090337
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/15/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090337
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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

ALS Copy.

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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19827**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22090337
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22090337-02**	**LH18/24-SP650_090722_AIX**	**Water**	**07 Sep 2022 13:00**
	Provide Level II and Level IV reports in separate pdf			22 Sep 2022

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: 9/6/22 1200

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

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

Sample Receipt Checklist

Work Order ID: HS22090337 **Date/Time received:** 08 Sep 2022 09:40

Client name: Bhate Environmental Associates, Inc. **Received by:** Paresh M. Giga

Completed/By:	08 Sep 2022 10:48	Paresh M. Giga	**Reviewed/By:**		
	Date/Time	eSignature		Date/Time	eSignature

Matrices: Water **Carrier name:** FedEx Priority Overnight

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	
Chain of custody signed when relinquished and received?	☑ Yes	☐ No	
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/1.9C U/c		IR31
Cooler Information:	1 Cooler(s), 48790		
Date/Time sample(s) sent to storage:	9/8/22 11:00		
Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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#: 406305 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/14/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200867-003	20220830-WC-GW-01	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200880-001	220831-WC-GW-02	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200880-002	220831-WC-GW-03	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200884-001	LH18/24-SP650_090722_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2200885-001	LH18/24-SP140_090722	.01	6850/ClO4 DOD			Water	10mL	
6	E2200886-001	LH18/24-SP650_090822_AIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2200886-002	LH18/24-SP650_090822_BIX	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2200401-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2200401-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200401-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
11	R2208353-007	2209061623B PL-11-530	.01	6850/ClO4			Water	10mL	
12	R2208353-014	2209061613B PL-11-470	.01	6850/ClO4			Water	10mL	
13	R2208487-009	2209071543B PL-11-710	.01	6850/ClO4			Water	10mL	
14	R2208487-016	2209071608B PL-11-820	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200401-02 1.00µL EQ2200401-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200867-003 100.00µL E2200880-001 100.00µL E2200880-002 100.00µL E2200884-001 100.00µL E2200885-001 100.00µL E2200886-001 100.00µL
E2200886-002 100.00µL EQ2200401-01 100.00µL EQ2200401-02 100.00µL EQ2200401-03 100.00µL R2208353-007 100.00µL R2208353-014 100.00µL
R2208487-009 100.00µL R2208487-016 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 9/14/22 13:00
Finished: 9/14/22 13:30
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 406305
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/14/22 13:00

Comments:

Reviewed By: GR Date: 09/14/22

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:**	E2200884
Project:	HS22090337	**Date Collected:**	9/ 7/22 1300
Sample Matrix:	Water	**Date Received:**	9/ 8/22
Sample Name:	LH18/24-SP650_090722_AIX	**Units:**	µg/L
Lab Code:	E2200884-001	**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	9/14/22	9/14/22 16:32	406305	777598	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200884
Project:	HS22090337	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200401-01	**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	9/14/22	9/14/22 14:56	406305	777598	

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	**Service Request:**	E2200884
Project:	HS22090337	**Date Analyzed:**	9/14/22
Sample Matrix:	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:	406305

	Lab Control Sample EQ2200401-02			Duplicate Lab Control Sample EQ2200401-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0983	0.100	98	0.109	0.100	109	84 - 119	10	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:**	E2200884
Project:	HS22090337	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-02	**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	**0.0983**	J	0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:29	406305	777598	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200884
Project:	HS22090337	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-03	**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	**0.109**		0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:38	406305	777598	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 16, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22090343**

Laboratory Results for: **Longhorn GW Treatment Plant Monthly Influent Samples**

Dear Marcia Olive,

ALS Environmental received 1 sample(s) on Sep 08, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22090343

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22090343-01	LH18/24-SP140_090722	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Monthly Influent Samples
Work Order: HS22090343

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

Metals by Method SW6020A

Batch ID: 183432

Sample ID: HS22090337-01MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SW7196

Batch ID: R416747

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

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder:HS22090343
Sample ID: LH18/24-SP140_090722
Lab ID:HS22090343-01
Collection Date: 07-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 12-Sep-2022		Analyst: JC
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	13-Sep-2022 12:35
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	13-Sep-2022 12:35
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**						Analyst: MZD
Chromium, Hexavalent	0.00600	U	0.00600	0.00600	0.0100	mg/L	1	08-Sep-2022 11:26
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Sep-2022 13:41

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.

Project: Longhorn GW Treatment Plant Monthly Influent Samples

WorkOrder: HS22090343

Batch ID: 183432 **Start Date:** 12 Sep 2022 11:00 **End Date:** 12 Sep 2022 16:00

Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22090343-01		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22090343

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 183432 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22090343-01	LH18/24-SP140_090722	07 Sep 2022 13:00		12 Sep 2022 09:00	13 Sep 2022 12:35	1
Batch ID: R416747 (0)	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A				**Matrix:** Water	
HS22090343-01	LH18/24-SP140_090722	07 Sep 2022 13:00			08 Sep 2022 11:26	1
Batch ID: R417333 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22090343-01	LH18/24-SP140_090722	07 Sep 2022 13:00			16 Sep 2022 13:41	1

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22090343

QC BATCH REPORT

Batch ID: 183432 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-183432** Units: **mg/L** Analysis Date: **13-Sep-2022 12:08**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846116** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U

LCS Sample ID: **LCS-183432** Units: **mg/L** Analysis Date: **13-Sep-2022 12:10**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846117** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05316	0.00500	0.05	0	106	80 - 120				
Silver	0.04809	0.00500	0.05	0	96.2	85 - 116				

MS Sample ID: **HS22090337-01MS** Units: **mg/L** Analysis Date: **13-Sep-2022 12:15**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846120** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.02673	0.00500	0.05	0.000273	52.9	80 - 120				S
Silver	0.04279	0.00500	0.05	-0.000005	85.6	85 - 116				

MSD Sample ID: **HS22090337-01MSD** Units: **mg/L** Analysis Date: **13-Sep-2022 12:17**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846121** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.02996	0.00500	0.05	0.000273	59.4	80 - 120	0.02673	11.4	20	S
Silver	0.04616	0.00500	0.05	-0.000005	92.3	85 - 116	0.04279	7.56	20	

PDS Sample ID: **HS22090337-01PDS** Units: **mg/L** Analysis Date: **13-Sep-2022 12:19**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846122** PrepDate: **12-Sep-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.1052	0.00500	0.1	0.000273	105	80 - 120				
Silver	0.0996	0.00500	0.1	-0.000005	99.6	80 - 120				

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22090343

QC BATCH REPORT

Batch ID: 183432 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22090337-01SD** Units: **mg/L** Analysis Date: **13-Sep-2022 12:14**
Client ID: Run ID: **ICPMS07_417005** SeqNo: **6846119** PrepDate: **12-Sep-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0125	0.0250					0.000273	0	10	U
Silver	0.00250	0.0250					-0.000005	0	10	U

The following samples were analyzed in this batch: HS22090343-01

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: HS22090343

QC BATCH REPORT

Batch ID: R416747 (0) **Instrument: UV-2450** **Method: HEXAVALENT CHROMIUM BY SW7196A**

MBLK Sample ID: **MBLK-R416747** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839825** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.00600	0.0100								U

LCS Sample ID: **LCS-R416747** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839824** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.239	0.0100	0.25	0	95.6	90 - 111				

MS Sample ID: **HS22090337-01MS** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.238	0.0100	0.25	0.001	94.8	90 - 111				

MSD Sample ID: **HS22090337-01MSD** Units: **mg/L** Analysis Date: **08-Sep-2022 11:26**
Client ID: Run ID: **UV-2450_416747** SeqNo: **6839826** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.239	0.0100	0.25	0.001	95.2	90 - 111	0.238	0.419	20	

The following samples were analyzed in this batch: HS22090343-01

ALS Houston, US Date: 16-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Monthly Influent Samples
WorkOrder: **HS22090343**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 16-Sep-22

Sample Receipt Checklist

Work Order ID: HS22090343 **Date/Time Received:** **08-Sep-2022 09:40**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: */S/ Paresh M. Giga* (eSignature) 08-Sep-2022 10:56 (Date/Time) **Reviewed by:** */S/ Ragen Giga* (eSignature) 13-Sep-2022 17:06 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:client
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/1.9C U/C	IR31	
Cooler(s)/Kit(s):	48790		
Date/Time sample(s) sent to storage:	9/8/22 11:05		
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 Stanecliff Rd., Suite 210 Houston, TX, 77099 (281) 530-5656 ATTN: Ragen Gigi

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

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY INFLUENT SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS22090343

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Monthly Influent Sample

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: SILVER & SELENIUM	HEXAVALENT CHROMIUM	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_090722	Water	09/07/22 / 13:00		1	X			HNO3	
LH18/24-SP140_090722	Water	09/07/22 / 13:00		2		X	X	NONE	

Additional Remarks: **STANDARD TURN AROUND TIME**

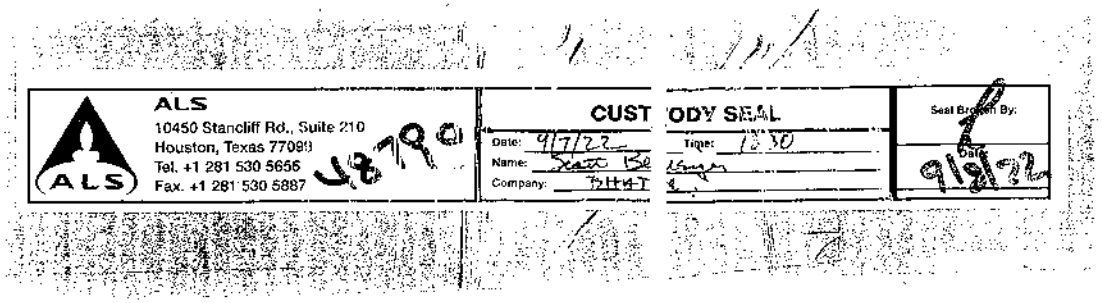
Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/07/22	13:30	[signature]	9/8/22	09:40						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
48790 2.10 #31									

Remarks:
CIC-0.2°

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



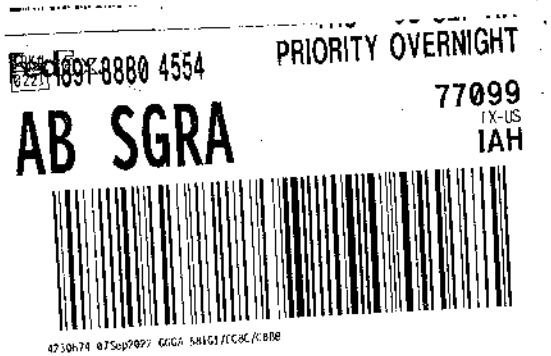
ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

J8790

CUST ODY SEAL

Date: 9/7/22
Time: 1530
Name: Scott Be
Company: BHGE

Seal Broken By:
Date: 9/8/22



PRIORITY OVERNIGHT

1891 8880 4554

77099
TX-US
IAH

AB SGRA

September 16, 2022 Service Request No:E2200885

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22090343

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 08, 2022
For your reference, these analyses have been assigned our service request number **E2200885.**

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 Environmental - US	**Service Request No.:**	E2200885
Project:	HS22090343	**Date Received:**	09/08/22
Sample Matrix:	Water		

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

One sample was received for analysis at ALS Environmental in Houston on 09/08/22.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200401-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200885
Project: HS22090343

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200885-001	LH18/24-SP140_090722	9/7/2022	1300

Service Request Summary

Folder #: **E2200885**
Client Name: ALS Environmental - US
Project Name: HS22090343
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/22/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090343
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200885-001	LH18/24-SP140_090722	Water	09/07/22 1300	**IV**

Service Request Summary

Folder #: **E2200885**
Client Name: ALS Environmental - US
Project Name: HS22090343
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/22/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090343
EDD: No EDD Specified

1 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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

Cont.

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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19829**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22090343
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22090343-01**	**LH18/24-SP140_090722**	**Water**	**07 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			22 Sep 2022

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: J. W. Date/Time: 9/8/22 1200

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

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Sample Receipt Checklist

Work Order ID: HS22090343 **Date/Time received:** 08 Sep 2022 09:40

Client name: Bhate Environmental Associates, Inc. **Received by:** Paresh M. Giga

Completed/By: 08 Sep 2022 10:56 (Date/Time) Paresh M. Giga (eSignature) **Reviewed/By:** (Date/Time) (eSignature)

Matrices: Water **Carrier name:** FedEx Priority Overnight

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 ID(s): 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/1.9C U/C		IR31	
Cooler Information:	1 Cooler(s), 48790			
Date/Time sample(s) sent to storage:	9/8/22 11:05			
Water - VOA vials have zero headspace?	☐ Yes	☐ No	☑ No VOA vials submitted	
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable	
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable	

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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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#: 406305 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/14/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200867-003	20220830-WC-GW-01	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200880-001	220831-WC-GW-02	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200880-002	220831-WC-GW-03	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200884-001	LH18/24-SP650_090722_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2200885-001	LH18/24-SP140_090722	.01	6850/ClO4 DOD			Water	10mL	
6	E2200886-001	LH18/24-SP650_090822_AIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2200886-002	LH18/24-SP650_090822_BIX	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2200401-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2200401-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200401-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
11	R2208353-007	2209061623B PL-11-530	.01	6850/ClO4			Water	10mL	
12	R2208353-014	2209061613B PL-11-470	.01	6850/ClO4			Water	10mL	
13	R2208487-009	2209071543B PL-11-710	.01	6850/ClO4			Water	10mL	
14	R2208487-016	2209071608B PL-11-820	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200401-02 1.00µL EQ2200401-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200867-003 100.00µL E2200880-001 100.00µL E2200880-002 100.00µL E2200884-001 100.00µL E2200885-001 100.00µL E2200886-001 100.00µL
E2200886-002 100.00µL EQ2200401-01 100.00µL EQ2200401-02 100.00µL EQ2200401-03 100.00µL R2208353-007 100.00µL R2208353-014 100.00µL
R2208487-009 100.00µL R2208487-016 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 9/14/22 13:00
Finished: 9/14/22 13:30
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 406305
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/14/22 13:00

Comments:

Reviewed By: GR Date: 09/14/22

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:**	E2200885
Project:	HS22090343	**Date Collected:**	9/ 7/22 1300
Sample Matrix:	Water	**Date Received:**	9/ 8/22
Sample Name:	LH18/24-SP140_090722	**Units:**	µg/L
Lab Code:	E2200885-001	**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	**22900**		100	50.0	25.0	1000	9/14/22	9/15/22 14:43	406305	777601	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200885
Project:	HS22090343	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200401-01	**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	9/14/22	9/14/22 14:56	406305	777598	

Accuracy & Precision

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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: HS22090343
Sample Matrix: Water

Service Request: E2200885
Date Analyzed: 9/14/22

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: 406305

	Lab Control Sample EQ2200401-02			Duplicate Lab Control Sample EQ2200401-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0983	0.100	98	0.109	0.100	109	84 - 119	10	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:**	E2200885
Project:	HS22090343	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-02	**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	**0.0983**	J	0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:29	406305	777598	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200885
Project:	HS22090343	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-03	**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	**0.109**		0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:38	406305	777598	

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September 15, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22090344**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 08, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22090344

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22090344-01	LH18/24-SP650_090722	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐
HS22090344-02	LH18/24-SP650_090722_AIX	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐
HS22090344-03	LH18/24-SP650_090722_BIX	Water		07-Sep-2022 13:00	08-Sep-2022 09:40	☐

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22090344

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R417254

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

WetChemistry by Method E415.1

Batch ID: R417210

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

WetChemistry by Method E365.3

Batch ID: R416748

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22090344
Sample ID: LH18/24-SP650_090722
Lab ID:HS22090344-01
Collection Date: 07-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**12**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	15-Sep-2022 15:30
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**5.28**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	08-Sep-2022 14:53
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.92**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	14-Sep-2022 19:07

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22090344
Sample ID: LH18/24-SP650_090722_AIX
Lab ID:HS22090344-02
Collection Date: 07-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	15-Sep-2022 16:09

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

ALS Houston, US

Date: 15-Sep-22

Client:	Bhate Environmental Associates, Inc.	**ANALYTICAL REPORT**
Project:	Longhorn GW Treatment Plant Weekly Samples	WorkOrder:HS22090344
Sample ID:	LH18/24-SP650_090722_BIX	Lab ID:HS22090344-03
Collection Date:	07-Sep-2022 13:00	Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	15-Sep-2022 16:09

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

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090344

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R416748 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22090344-01	LH18/24-SP650_090722	07 Sep 2022 13:00			08 Sep 2022 14:53	10
Batch ID: R417210 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22090344-01	LH18/24-SP650_090722	07 Sep 2022 13:00			14 Sep 2022 19:07	1
Batch ID: R417254 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22090344-01	LH18/24-SP650_090722	07 Sep 2022 13:00			15 Sep 2022 15:30	1
Batch ID: R417256 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22090344-02	LH18/24-SP650_090722_AIX	07 Sep 2022 13:00			15 Sep 2022 16:09	1
HS22090344-03	LH18/24-SP650_090722_BIX	07 Sep 2022 13:00			15 Sep 2022 16:09	1

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090344

QC BATCH REPORT

Batch ID: R416748 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R416748** Units: **mg/L** Analysis Date: **08-Sep-2022 14:53**
Client ID: Run ID: **UV-2450_416748** SeqNo: **6839837** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R416748** Units: **mg/L** Analysis Date: **08-Sep-2022 14:53**
Client ID: Run ID: **UV-2450_416748** SeqNo: **6839836** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.252	0.0250	0.25	0	101	85 - 115				

MS Sample ID: **HS22090344-01MS** Units: **mg/L** Analysis Date: **08-Sep-2022 14:53**
Client ID: **LH18/24-SP650_090722** Run ID: **UV-2450_416748** SeqNo: **6839839** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	7.61	0.250	2.5	5.28	93.2	80 - 120				

MSD Sample ID: **HS22090344-01MSD** Units: **mg/L** Analysis Date: **08-Sep-2022 14:53**
Client ID: **LH18/24-SP650_090722** Run ID: **UV-2450_416748** SeqNo: **6839838** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	7.83	0.250	2.5	5.28	102	80 - 120	7.61	2.85	20	

The following samples were analyzed in this batch: HS22090344-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090344

QC BATCH REPORT

Batch ID: R417210 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-09142022** Units: **mg/L** Analysis Date: **14-Sep-2022 16:21**
Client ID: Run ID: **TOC_04_417210** SeqNo: **6850779** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-09142022** Units: **mg/L** Analysis Date: **14-Sep-2022 16:32**
Client ID: Run ID: **TOC_04_417210** SeqNo: **6850780** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.801	1.00	10	0	98.0	85 - 115				

LCSD Sample ID: **LCSD-09142022** Units: **mg/L** Analysis Date: **14-Sep-2022 16:44**
Client ID: Run ID: **TOC_04_417210** SeqNo: **6850781** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.56	1.00	10	0	95.6	85 - 115	9.801	2.49	20	

MS Sample ID: **HS22090247-01MS** Units: **mg/L** Analysis Date: **14-Sep-2022 17:07**
Client ID: Run ID: **TOC_04_417210** SeqNo: **6850783** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	14.95	1.00	10	4.18	108	80 - 120				

The following samples were analyzed in this batch: HS22090344-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090344

QC BATCH REPORT

Batch ID: R417254 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R417254** Units: **mg/L** Analysis Date: **15-Sep-2022 15:30**
Client ID: Run ID: **WetChem_HS_417254** SeqNo: **6851825** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R417254** Units: **mg/L** Analysis Date: **15-Sep-2022 15:30**
Client ID: Run ID: **WetChem_HS_417254** SeqNo: **6851824** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.869	0.20	10	0	98.7	80 - 120				

MS Sample ID: **HS22090011-02MS** Units: **mg/L** Analysis Date: **15-Sep-2022 15:30**
Client ID: Run ID: **WetChem_HS_417254** SeqNo: **6851827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.21	0.20	10	0.249	99.6	80 - 120				

MSD Sample ID: **HS22090011-02MSD** Units: **mg/L** Analysis Date: **15-Sep-2022 15:30**
Client ID: Run ID: **WetChem_HS_417254** SeqNo: **6851826** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.21	0.20	10	0.249	99.6	80 - 120	10.21	0.0196	20	

The following samples were analyzed in this batch: HS22090344-01

ALS Houston, US Date: 15-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22090344**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 15-Sep-22

Sample Receipt Checklist

Work Order ID: HS22090344 **Date/Time Received:** **08-Sep-2022 09:40**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: */S/ Paresh M. Giga* (eSignature) 08-Sep-2022 11:07 (Date/Time) **Reviewed by:** */S/ Ragen Giga* (eSignature) 13-Sep-2022 17:20 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:Client
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/1.9C U/C	IR31	
Cooler(s)/Kit(s):	48790		
Date/Time sample(s) sent to storage:	9/8/22 11:15		
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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22090344
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_090722	Water	09/07/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_090722	Water	09/07/22 / 13:00		1			X		NONE	
LH18/24–SP650_090722_AIX	Water	09/07/22 / 13:00		1				X	NONE	
LH18/24-SP650_090722_BIX	Water	09/07/22 / 13:00		1				X	NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/07/22	13:30		9/8/22	09:45						

For Lab Use Only

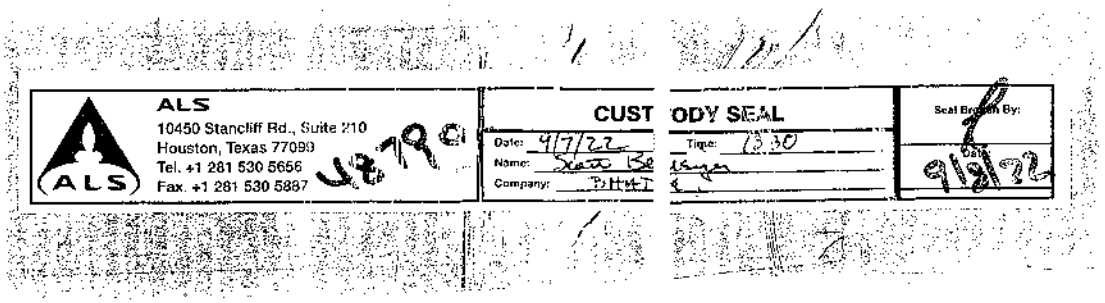
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

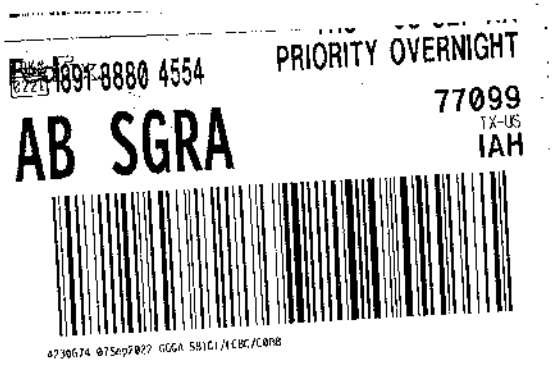
Remarks:

SCC.

48790 2.1 #3 ELE -0.2

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


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUST ODY SEAL
Date: 9/7/22
Time: 13:30
Name:
Company:
Seal Broken By:
Date:
9/8/22


PRIORITY OVERNIGHT
1891 8880 4554
77099
TX-US
IAH
AB SGRA

September 15, 2022 Service Request No:E2200886

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22090344

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 08, 2022
For your reference, these analyses have been assigned our service request number **E2200886.**

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

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 Environmental – US	**Service Request No.:**	E2200886
Project:	HS22090344	**Date Received:**	09/08/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 09/08/22.

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:

EQ2200401-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

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:**E2200886
Project: HS22090344

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200886-001	LH18/24-SP650_090722_AIX	9/7/2022	1300
E2200886-002	LH18/24-SP650_090722_BIX	9/7/2022	1300

Service Request Summary

Folder #: **E2200886**
Client Name: ALS Environmental - US
Project Name: HS22090344
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/15/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090344
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200886-001	LH18/24-SP650_090722_AIX	Water	09/07/22 1300	**IV**
E2200886-002	LH18/24-SP650_090722_BIX	Water	09/07/22 1300	**IV**

Service Request Summary

Folder #: **E2200886**
Client Name: ALS Environmental - US
Project Name: HS22090344
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/08/22
Internal Due Date: 9/15/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090344
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19830**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22090344
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22090344-02**	**LH18/24-SP650_090822_AIX**	**Water**	**07 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			15 Sep 2022
2.	**HS22090344-03**	**LH18/24-SP650_090822_BIX**	**Water**	**07 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			15 Sep 2022

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: J. M Date/Time: 9/8/22 1200

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

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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

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Sample Receipt Checklist

Work Order ID: HS22090344 **Date/Time received:** 08 Sep 2022 09:40

Client name: Bhate Environmental Associates, Inc. **Received by:** Paresh M. Giga

Completed/By: 08 Sep 2022 11:07 (Date/Time) Paresh M. Giga (eSignature) **Reviewed/By:** (Date/Time) (eSignature)

Matrices: Water **Carrier name:** FedEx Priority Overnight

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 ID(s): 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/1.9C U/C		IR31	
Cooler Information:	1 Cooler(s), 48790			
Date/Time sample(s) sent to storage:	9/8/22 11:15			
Water - VOA vials have zero headspace?	☐ Yes	☐ No	☑ No VOA vials submitted	
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable	
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable	

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

Preparation Information Benchsheets

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Preparation Information Benchsheet

Prep Run#: 406305 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/14/22 13:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200867-003	20220830-WC-GW-01	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2200880-001	220831-WC-GW-02	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2200880-002	220831-WC-GW-03	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200884-001	LH18/24-SP650_090722_AIX	.01	6850/ClO4 DOD			Water	10mL	
5	E2200885-001	LH18/24-SP140_090722	.01	6850/ClO4 DOD			Water	10mL	
6	E2200886-001	LH18/24-SP650_090722_AIX	.01	6850/ClO4 DOD			Water	10mL	
7	E2200886-002	LH18/24-SP650_090722_BIX	.01	6850/ClO4 DOD			Water	10mL	
8	EQ2200401-01	MB		6850/ClO4 DOD			Liquid	10mL	
9	EQ2200401-02	LCS		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200401-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
11	R2208353-007	2209061623B PL-11-530	.01	6850/ClO4			Water	10mL	
12	R2208353-014	2209061613B PL-11-470	.01	6850/ClO4			Water	10mL	
13	R2208487-009	2209071543B PL-11-710	.01	6850/ClO4			Water	10mL	
14	R2208487-016	2209071608B PL-11-820	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200401-02 1.00µL EQ2200401-03 1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200867-003 100.00µL E2200880-001 100.00µL E2200880-002 100.00µL E2200884-001 100.00µL E2200885-001 100.00µL E2200886-001 100.00µL
E2200886-002 100.00µL EQ2200401-01 100.00µL EQ2200401-02 100.00µL EQ2200401-03 100.00µL R2208353-007 100.00µL R2208353-014 100.00µL
R2208487-009 100.00µL R2208487-016 100.00µL

Preparation Materials

Water HPLC Grade 5/12/2022 Water (223056) 6850 Amber Glass screw vial 2mL Screw Top Vial (221894) 6850 0.45um syringe filters 6850 Syringe Filters (224414)
6850 Luer-Lok Syringes Luer-Lok Syringes (221305) 6850 Pipette Tips 50-1000 uL 6850 Pipette Tips (221929)

Preparation Steps

Step: Preparation
Started: 9/14/22 13:00
Finished: 9/14/22 13:30
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 406305
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/14/22 13:00

Comments: _____

Reviewed By: _____ Date: _____

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:**	E2200886
Project:	HS22090344	**Date Collected:**	9/ 7/22 1300
Sample Matrix:	Water	**Date Received:**	9/ 8/22
Sample Name:	LH18/24-SP650_090722_AIX	**Units:**	µg/L
Lab Code:	E2200886-001	**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	**0.0494**	J	0.100	0.0500	0.0250	1	9/14/22	9/15/22 11:43	406305	777601	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200886
Project:	HS22090344	**Date Collected:**	9/ 7/22 1300
Sample Matrix:	Water	**Date Received:**	9/ 8/22
Sample Name:	LH18/24-SP650_090722_BIX	**Units:**	µg/L
Lab Code:	E2200886-002	**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	**0.698**		0.100	0.0500	0.0250	1	9/14/22	9/15/22 11:51	406305	777601	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200886
Project:	HS22090344	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200401-01	**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	9/14/22	9/14/22 14:56	406305	777598	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22090344
Sample Matrix: Water

Service Request: E2200886
Date Analyzed: 9/14/22

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: 406305

	Lab Control Sample EQ2200401-02			Duplicate Lab Control Sample EQ2200401-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0983	0.100	98	0.109	0.100	109	84 - 119	10	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:**	E2200886
Project:	HS22090344	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-02	**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	**0.0983**	J	0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:29	406305	777598	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200886
Project:	HS22090344	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200401-03	**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	**0.109**		0.100	0.0500	0.0250	1	9/14/22	9/14/22 15:38	406305	777598	

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September 22, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22090729**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 15, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22090729

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22090729-01	LH18/24-SP650_091422	Water		14-Sep-2022 13:00	15-Sep-2022 09:05	☐
HS22090729-02	LH18/24-SP650_091422_AIX	Water		14-Sep-2022 13:00	15-Sep-2022 09:05	☐
HS22090729-03	LH18/24-SP650_091422_BIX	Water		14-Sep-2022 13:00	15-Sep-2022 09:05	☐

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22090729

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E415.1

Batch ID: R417715

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

WetChemistry by Method E350.3

Batch ID: R417615

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

WetChemistry by Method E365.3

Batch ID: R417322

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

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22090729
Sample ID: LH18/24-SP650_091422
Lab ID:HS22090729-01
Collection Date: 14-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**10**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	21-Sep-2022 12:00
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**3.25**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	16-Sep-2022 10:47
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**6.76**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	22-Sep-2022 12:58

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

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22090729
Sample ID: LH18/24-SP650_091422_AIX
Lab ID:HS22090729-02
Collection Date: 14-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	21-Sep-2022 16:18

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

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Weekly Samples WorkOrder:HS22090729
Sample ID: LH18/24-SP650_091422_BIX Lab ID:HS22090729-03
Collection Date: 14-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	21-Sep-2022 16:18

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

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090729

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R417322 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22090729-01	LH18/24-SP650_091422	14 Sep 2022 13:00			16 Sep 2022 10:47	10
Batch ID: R417615 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22090729-01	LH18/24-SP650_091422	14 Sep 2022 13:00			21 Sep 2022 12:00	1
Batch ID: R417629 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22090729-02	LH18/24-SP650_091422_AIX	14 Sep 2022 13:00			21 Sep 2022 16:18	1
HS22090729-03	LH18/24-SP650_091422_BIX	14 Sep 2022 13:00			21 Sep 2022 16:18	1
Batch ID: R417715 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22090729-01	LH18/24-SP650_091422	14 Sep 2022 13:00			22 Sep 2022 12:58	1

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090729

QC BATCH REPORT

Batch ID: R417322 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R417322** Units: **mg/L** Analysis Date: **16-Sep-2022 10:47**
Client ID: Run ID: **UV-2450_417322** SeqNo: **6853808** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R417322** Units: **mg/L** Analysis Date: **16-Sep-2022 10:47**
Client ID: Run ID: **UV-2450_417322** SeqNo: **6853807** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.248	0.0250	0.25	0	99.2	85 - 115				

MS Sample ID: **HS22090729-01MS** Units: **mg/L** Analysis Date: **16-Sep-2022 10:47**
Client ID: **LH18/24-SP650_091422** Run ID: **UV-2450_417322** SeqNo: **6853810** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	6.15	0.250	2.5	3.25	116	80 - 120				

MSD Sample ID: **HS22090729-01MSD** Units: **mg/L** Analysis Date: **16-Sep-2022 10:47**
Client ID: **LH18/24-SP650_091422** Run ID: **UV-2450_417322** SeqNo: **6853809** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	6.13	0.250	2.5	3.25	115	80 - 120	6.15	0.326	20	

The following samples were analyzed in this batch: HS22090729-01

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090729

QC BATCH REPORT

Batch ID: R417615 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R417615** Units: **mg/L** Analysis Date: **21-Sep-2022 12:00**
Client ID: Run ID: **WetChem_HS_417615** SeqNo: **6875830** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R417615** Units: **mg/L** Analysis Date: **21-Sep-2022 12:00**
Client ID: Run ID: **WetChem_HS_417615** SeqNo: **6875829** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	8.899	0.20	10	0	89.0	80 - 120				

MS Sample ID: **HS22090341-01MS** Units: **mg/L** Analysis Date: **21-Sep-2022 12:00**
Client ID: Run ID: **WetChem_HS_417615** SeqNo: **6875834** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.333	0.20	10	0.316	90.2	80 - 120				

MSD Sample ID: **HS22090341-01MSD** Units: **mg/L** Analysis Date: **21-Sep-2022 12:00**
Client ID: Run ID: **WetChem_HS_417615** SeqNo: **6875833** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.335	0.20	10	0.316	90.2	80 - 120	9.333	0.0214	20	

The following samples were analyzed in this batch: HS22090729-01

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22090729

QC BATCH REPORT

Batch ID: R417715 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK--09222022** Units: **mg/L** Analysis Date: **22-Sep-2022 12:18**
Client ID: Run ID: **TOC_04_417715** SeqNo: **6878212** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-09222022** Units: **mg/L** Analysis Date: **22-Sep-2022 12:31**
Client ID: Run ID: **TOC_04_417715** SeqNo: **6878213** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.25	1.00	10	0	102	85 - 115				

LCSD Sample ID: **LCSD-09222022** Units: **mg/L** Analysis Date: **22-Sep-2022 12:45**
Client ID: Run ID: **TOC_04_417715** SeqNo: **6878214** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.35	1.00	10	0	104	85 - 115	10.25	0.971	20	

MS Sample ID: **HS22090729-01MS** Units: **mg/L** Analysis Date: **22-Sep-2022 13:12**
Client ID: **LH18/24-SP650_091422** Run ID: **TOC_04_417715** SeqNo: **6878216** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	18.24	1.00	10	6.759	115	80 - 120				

The following samples were analyzed in this batch: HS22090729-01

ALS Houston, US Date: 22-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22090729**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 22-Sep-22

Sample Receipt Checklist

Work Order ID: HS22090729 **Date/Time Received:** **15-Sep-2022 09:05**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: /S/ Paresh M. Giga (eSignature) 15-Sep-2022 13:43 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 19-Sep-2022 14:31 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:Client
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):	2.0C/1.8C U/C	IR31	
Cooler(s)/Kit(s):	48858		
Date/Time sample(s) sent to storage:	9/15/22 13:50		
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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS22090729

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_091422	Water	09/14/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_091422	Water	09/14/22 / 13:00		1			X		NONE	
LH18/24-SP650_091422_AIX	Water	09/14/22 / 13:00		1				X	NONE	
LH18/24-SP650_091422_BIX	Water	09/14/22 / 13:00		1				X	NONE	
48858 2.0°										
#31										
C12-0 2°										

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/14/22	13:30		09/15	0905						

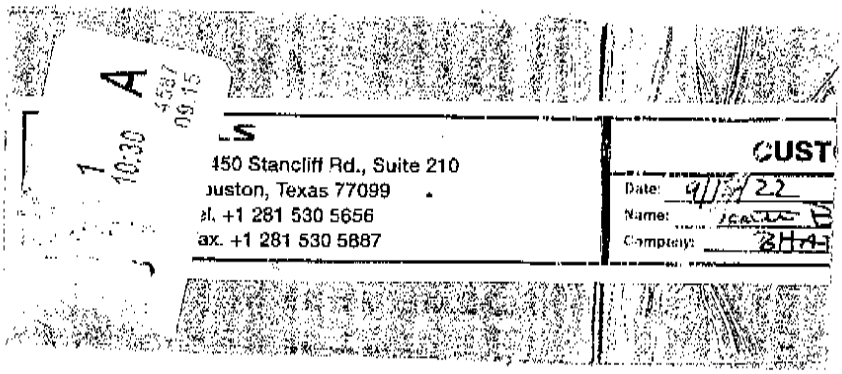
For Lab Use Only

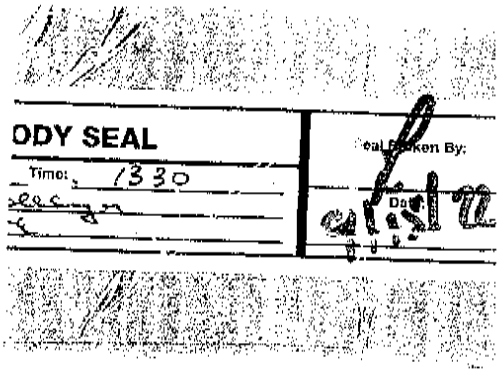
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

5.4

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly


450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CUST
Date: 9/3/22
Name:
Company: BHA


ODY SEAL
Time: 1330


1001 8880 4587
PRIORITY OVERNIGHT
AB SGRA
77099
TX US
IAH

September 21, 2022 Service Request No:E2200896

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22090729

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 15, 2022
For your reference, these analyses have been assigned our service request number **E2200896.**

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 Environmental - US	**Service Request No.:**	E2200896
Project:	HS22090729	**Date Received:**	09/19/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 09/19/22.

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:

EQ2200411-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS/DLCS recoveries are within quality control limits.

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:**E2200896
Project: HS22090729

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200896-001	LH18/24-SP650_091422_AIX	9/14/2022	1300
E2200896-002	LH18/24-SP650_091422_BIX	9/14/2022	1300

Service Request Summary

Folder #: **E2200896**
Client Name: ALS Environmental - US
Project Name: HS22090729
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/15/22
Internal Due Date: 9/22/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090729
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200896-001	LH18/24-SP650_091422_AIX	Water	09/14/22 1300	**IV**
E2200896-002	LH18/24-SP650_091422_BIX	Water	09/14/22 1300	**IV**

Service Request Summary

Folder #: **E2200896**
Client Name: ALS Environmental - US
Project Name: HS22090729
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/15/22
Internal Due Date: 9/22/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22090729
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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:** **19886**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22090729
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22090729-02**	**LH18/24-SP650_091422_AIX**	**Water**	**14 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			22 Sep 2022
2.	**HS22090729-03**	**LH18/24-SP650_091422_BIX**	**Water**	**14 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			22 Sep 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: Inner G Date/Time: 9/14/22 1400

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID IR41

Date/Time Received: 9/19/22 Initials: CH Date/Time Logged in: 9/19/22 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ⊗ Courier ○ Client (4IG)

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

3. Were custody seals on coolers? ○ Yes ⊗ No If yes, how many and where?

Were they intact? ○ Yes ○ No ⊗ N/A

Were they signed and dated? ○ Yes ○ No ⊗ N/A

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		9/19/22	1401	CH	2.9	☒
						☐
						☐
						☐

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#: 406485 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/16/22 14:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200894-001	GW-MW-98D-20220913-01	.01	6850/ClO4			Ground Water	10mL	
2	E2200894-002	GW-MW-29D-20220913-01	.01	6850/ClO4			Ground Water	10mL	
3	E2200894-003	GW-MW-66D2-20220913-01	.01	6850/ClO4			Ground Water	10mL	
4	E2200894-004	GW-MW-89D-20220913-01	.01	6850/ClO4			Ground Water	10mL	
5	E2200895-001	GW-MW-14-20220914-01	.01	6850/ClO4			Ground Water	10mL	
6	E2200895-002	GW-MW-15-20220914-01	.01	6850/ClO4			Ground Water	10mL	
7	E2200895-003	GW-MW-16-20220914-01	.01	6850/ClO4			Ground Water	10mL	
8	E2200895-004	GW-MW-90-20220914-01	.01	6850/ClO4			Ground Water	10mL	
9	E2200895-005	GW-MW-97-20220914-01	.01	6850/ClO4			Ground Water	10mL	
10	E2200895-006	BROP-01-20220914-01	.01	6850/ClO4			Ground Water	10mL	
11	E2200896-001	LH18/24-SP650_091422_AIX	.01	6850/ClO4 DOD			Water	10mL	
12	E2200896-002	LH18/24-SP650_091422_BIX	.01	6850/ClO4 DOD			Water	10mL	
13	EQ2200411-01	MB		6850/ClO4 DOD			Liquid	10mL	
14	EQ2200411-02	LCS		6850/ClO4 DOD			Liquid	10mL	
15	EQ2200411-03	DLCS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200411-02	1.00µL	EQ2200411-02	1.00µL	EQ2200411-03	1.00µL	EQ2200411-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200894-001	100.00µL	E2200894-002	100.00µL	E2200894-003	100.00µL	E2200894-004	100.00µL	E2200895-001	100.00µL	E2200895-002	100.00µL
E2200895-003	100.00µL	E2200895-004	100.00µL	E2200895-005	100.00µL	E2200895-006	100.00µL	E2200896-001	100.00µL	E2200896-002	100.00µL
EQ2200411-01	100.00µL	EQ2200411-01	100.00µL	EQ2200411-02	100.00µL	EQ2200411-02	100.00µL	EQ2200411-03	100.00µL	EQ2200411-03	100.00µL

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 9/16/22 14:00
Finished: 9/16/22 14:45
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 406485
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/16/22 14:00

Comments: _____

Reviewed By: _____ Date: _____

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:**	E2200896
Project:	HS22090729	**Date Collected:**	9/14/22 1300
Sample Matrix:	Water	**Date Received:**	9/15/22
Sample Name:	LH18/24-SP650_091422_AIX	**Units:**	µg/L
Lab Code:	E2200896-001	**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	**0.105**		0.100	0.0500	0.0250	1	9/16/22	9/20/22 12:46	406485	778131	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200896
Project:	HS22090729	**Date Collected:**	9/14/22 1300
Sample Matrix:	Water	**Date Received:**	9/15/22
Sample Name:	LH18/24-SP650_091422_BIX	**Units:**	µg/L
Lab Code:	E2200896-002	**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	**2.43**		0.100	0.0500	0.0250	1	9/16/22	9/20/22 12:54	406485	778131	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200896
Project:	HS22090729	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200411-01	**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	9/16/22	9/20/22 11:55	406485	778131	

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: HS22090729
Sample Matrix: Water

Service Request: E2200896
Date Analyzed: 9/20/22

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: 406485

	Lab Control Sample EQ2200411-02			Duplicate Lab Control Sample EQ2200411-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.113	0.100	113	0.110	0.100	110	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:**	E2200896
Project:	HS22090729	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200411-02	**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	**0.113**		0.100	0.0500	0.0250	1	9/16/22	9/20/22 12:12	406485	778131	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200896
Project:	HS22090729	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200411-03	**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	9/16/22	9/20/22 12:37	406485	778131	

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September 19, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22090731**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Sep 15, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22090731

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22090731-01	LH18/24-SP650_091422	Water		14-Sep-2022 13:00	15-Sep-2022 09:05	☐
HS22090731-02	Trip Blank	Water	CG-061121-170	14-Sep-2022 00:00	15-Sep-2022 09:05	☐

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22090731

GCMS Volatiles by Method SW8260

Batch ID: R417372

Sample ID: HS22090715-01MS

- MS and MSD were performed on unrelated sample

Wet Chemistry by Method SW9056

Batch ID: R417406

Sample ID: HS22090763-05MS

- MS and MSD were performed on unrelated sample

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22090731
Sample ID: LH18/24-SP650_091422 Lab ID:HS22090731-01
Collection Date: 14-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Sep-2022 15:09
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	16-Sep-2022 15:09
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	16-Sep-2022 15:09
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	16-Sep-2022 15:09
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	16-Sep-2022 15:09
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09

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

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22090731
Sample ID: LH18/24-SP650_091422 Lab ID:HS22090731-01
Collection Date: 14-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
cis-1,2-Dichloroethene	**2.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	16-Sep-2022 15:09
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Sep-2022 15:09
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	16-Sep-2022 15:09
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 15:09
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 15:09
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 15:09
Surr: 1,2-Dichloroethane-d4	*89.6*			**0**	*81-118*	*%REC*	*1*	*16-Sep-2022 15:09*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*1*	*16-Sep-2022 15:09*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*1*	*16-Sep-2022 15:09*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*16-Sep-2022 15:09*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,170**		**4.00**	**10.0**	**10.0**	**mg/L**	20	18-Sep-2022 12:55
Sulfate	**26.8**		**4.00**	**10.0**	**10.0**	**mg/L**	20	18-Sep-2022 12:55

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

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22090731
Sample ID: Trip Blank Lab ID:HS22090731-02
Collection Date: 14-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	16-Sep-2022 13:03
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	16-Sep-2022 13:03
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	16-Sep-2022 13:03
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	16-Sep-2022 13:03
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	16-Sep-2022 13:03
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03

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

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22090731
Sample ID: Trip Blank Lab ID:HS22090731-02
Collection Date: 14-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	16-Sep-2022 13:03
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	16-Sep-2022 13:03
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	16-Sep-2022 13:03
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	16-Sep-2022 13:03
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Trichlorofluoromethane	**4.3**		**0.30**	**1.0**	**1.0**	**ug/L**	1	16-Sep-2022 13:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	16-Sep-2022 13:03
Surr: 1,2-Dichloroethane-d4	*89.1*			**0**	*81-118*	*%REC*	*1*	*16-Sep-2022 13:03*
Surr: 4-Bromofluorobenzene	*91.0*			**0**	*85-114*	*%REC*	*1*	*16-Sep-2022 13:03*
Surr: Dibromofluoromethane	*92.7*			**0**	*80-119*	*%REC*	*1*	*16-Sep-2022 13:03*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*16-Sep-2022 13:03*

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

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R417372 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22090731-01	LH18/24-SP650_091422	14 Sep 2022 13:00			16 Sep 2022 15:09	1
HS22090731-02	Trip Blank	14 Sep 2022 00:00			16 Sep 2022 13:03	1
Batch ID: R417406 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22090731-01	LH18/24-SP650_091422	14 Sep 2022 13:00			18 Sep 2022 12:55	20

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-220916** Units: **ug/L** Analysis Date: **16-Sep-2022 12:41**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855287** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220916** Units: **ug/L** Analysis Date: **16-Sep-2022 12:41**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855287** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.23*	*1.0*	*50*	*0*	*88.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.65*	*1.0*	*50*	*0*	*91.3*	*85 - 114*				
Surr: Dibromofluoromethane	*45.41*	*1.0*	*50*	*0*	*90.8*	*80 - 119*				
Surr: Toluene-d8	*53.71*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220916** Units: **ug/L** Analysis Date: **16-Sep-2022 11:59**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855286** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.57	1.0	20	0	97.9	78 - 124				
1,1,1-Trichloroethane	18.26	1.0	20	0	91.3	74 - 131				
1,1,2,2-Tetrachloroethane	19.63	1.0	20	0	98.2	71 - 121				
1,1,2-Trichloroethane	19.53	1.0	20	0	97.7	80 - 119				
1,1-Dichloroethane	18.03	1.0	20	0	90.1	77 - 125				
1,1-Dichloroethene	18.44	1.0	20	0	92.2	71 - 131				
1,1-Dichloropropene	18.66	1.0	20	0	93.3	78 - 125				
1,2,3-Trichlorobenzene	21.15	1.0	20	0	106	69 - 129				
1,2,3-Trichloropropane	19.2	1.0	20	0	96.0	73 - 122				
1,2,4-Trichlorobenzene	20.33	1.0	20	0	102	69 - 130				
1,2,4-Trimethylbenzene	19.96	1.0	20	0	99.8	76 - 124				
1,2-Dibromo-3-chloropropane	19.34	1.0	20	0	96.7	62 - 128				
1,2-Dibromoethane	19.26	1.0	20	0	96.3	77 - 121				
1,2-Dichlorobenzene	19.89	1.0	20	0	99.5	80 - 119				
1,2-Dichloroethane	18.3	1.0	20	0	91.5	73 - 128				
1,2-Dichloropropane	19.13	1.0	20	0	95.7	78 - 122				
1,3,5-Trimethylbenzene	20.22	1.0	20	0	101	75 - 124				
1,3-Dichlorobenzene	20.28	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	19.22	1.0	20	0	96.1	80 - 119				
1,4-Dichlorobenzene	19.95	1.0	20	0	99.8	79 - 118				
2,2-Dichloropropane	18.72	1.0	20	0	93.6	60 - 139				
2-Butanone	35.98	2.0	40	0	90.0	56 - 143				
2-Chlorotoluene	19.38	1.0	20	0	96.9	79 - 122				
2-Hexanone	38.67	2.0	40	0	96.7	57 - 139				
4-Chlorotoluene	19.49	1.0	20	0	97.4	78 - 122				
4-Isopropyltoluene	20.52	1.0	20	0	103	77 - 127				
4-Methyl-2-pentanone	39.34	2.0	40	0	98.3	67 - 130				
Acetone	42.79	2.0	40	0	107	39 - 160				
Benzene	18.87	1.0	20	0	94.4	79 - 120				
Bromobenzene	20.18	1.0	20	0	101	80 - 120				
Bromochloromethane	17.93	1.0	20	0	89.6	78 - 123				
Bromodichloromethane	18.66	1.0	20	0	93.3	79 - 125				
Bromoform	18.34	1.0	20	0	91.7	66 - 130				
Bromomethane	21.15	1.0	20	0	106	53 - 141				

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220916** Units: **ug/L** Analysis Date: **16-Sep-2022 11:59**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855286** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.32	2.0	40	0	98.3	64 - 133				
Carbon tetrachloride	17.43	1.0	20	0	87.1	72 - 136				
Chlorobenzene	19.74	1.0	20	0	98.7	82 - 118				
Chloroethane	20.24	1.0	20	0	101	60 - 138				
Chloroform	18.56	1.0	20	0	92.8	79 - 124				
Chloromethane	20.9	1.0	20	0	105	50 - 139				
cis-1,2-Dichloroethene	19.1	1.0	20	0	95.5	78 - 123				
cis-1,3-Dichloropropene	18.41	1.0	20	0	92.1	75 - 124				
Dibromochloromethane	19.08	1.0	20	0	95.4	74 - 126				
Dibromomethane	19.07	1.0	20	0	95.4	79 - 123				
Dichlorodifluoromethane	19.48	1.0	20	0	97.4	32 - 152				
Ethylbenzene	20.3	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	21.39	1.0	20	0	107	66 - 134				
Isopropylbenzene	19.82	1.0	20	0	99.1	72 - 131				
m,p-Xylene	40.83	2.0	40	0	102	80 - 121				
Methylene chloride	20.26	2.0	20	0	101	74 - 124				
Naphthalene	19.23	1.0	20	0	96.1	61 - 128				
n-Butylbenzene	20.77	1.0	20	0	104	75 - 128				
n-Propylbenzene	21.16	1.0	20	0	106	76 - 126				
o-Xylene	19.36	1.0	20	0	96.8	78 - 122				
sec-Butylbenzene	20.53	1.0	20	0	103	77 - 126				
Styrene	19.6	1.0	20	0	98.0	78 - 123				
tert-Butylbenzene	20.59	1.0	20	0	103	78 - 124				
Tetrachloroethene	19.78	1.0	20	0	98.9	74 - 129				
Toluene	19.39	1.0	20	0	97.0	80 - 121				
trans-1,2-Dichloroethene	18.87	1.0	20	0	94.4	75 - 124				
trans-1,3-Dichloropropene	18.13	1.0	20	0	90.7	73 - 127				
Trichloroethene	19.22	1.0	20	0	96.1	79 - 123				
Trichlorofluoromethane	18.13	1.0	20	0	90.7	65 - 141				
Vinyl chloride	19.09	1.0	20	0	95.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.52*	*1.0*	*50*	*0*	*93.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.03*	*1.0*	*50*	*0*	*96.1*	*85 - 114*				
Surr: Dibromofluoromethane	*48.81*	*1.0*	*50*	*0*	*97.6*	*80 - 119*				
Surr: Toluene-d8	*49.21*	*1.0*	*50*	*0*	*98.4*	*89 - 112*				

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090715-01MS** Units: **ug/L** Analysis Date: **16-Sep-2022 16:33**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.78	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	18.46	1.0	20	0	92.3	74 - 131				
1,1,2,2-Tetrachloroethane	20.15	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.63	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	17.62	1.0	20	0	88.1	77 - 125				
1,1-Dichloroethene	16.31	1.0	20	0	81.6	71 - 131				
1,1-Dichloropropene	20.78	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	17.32	1.0	20	0	86.6	69 - 129				
1,2,3-Trichloropropane	19.17	1.0	20	0	95.9	73 - 122				
1,2,4-Trichlorobenzene	17.9	1.0	20	0	89.5	69 - 130				
1,2,4-Trimethylbenzene	20.78	1.0	20	0	104	76 - 124				
1,2-Dibromo-3-chloropropane	19.76	1.0	20	0	98.8	62 - 128				
1,2-Dibromoethane	20.81	1.0	20	0	104	77 - 121				
1,2-Dichlorobenzene	20.7	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.42	1.0	20	0	92.1	73 - 128				
1,2-Dichloropropane	19.49	1.0	20	0	97.5	78 - 122				
1,3,5-Trimethylbenzene	20.83	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	21.26	1.0	20	0	106	80 - 119				
1,3-Dichloropropane	20.5	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.89	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	17.88	1.0	20	0	89.4	60 - 139				
2-Butanone	32.14	2.0	40	0	80.3	56 - 143				
2-Chlorotoluene	20.26	1.0	20	0	101	79 - 122				
2-Hexanone	40.3	2.0	40	0	101	57 - 139				
4-Chlorotoluene	20.42	1.0	20	0	102	78 - 122				
4-Isopropyltoluene	22.15	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	43.07	2.0	40	0	108	67 - 130				
Acetone	26.36	2.0	40	0	65.9	39 - 160				
Benzene	19.88	1.0	20	0	99.4	79 - 120				
Bromobenzene	21.27	1.0	20	0	106	80 - 120				
Bromochloromethane	16.7	1.0	20	0	83.5	78 - 123				
Bromodichloromethane	19.19	1.0	20	0	95.9	79 - 125				
Bromoform	19.19	1.0	20	0	96.0	66 - 130				
Bromomethane	11.38	1.0	20	0	56.9	53 - 141				

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22090715-01MS** Units: **ug/L** Analysis Date: **16-Sep-2022 16:33**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855295** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	30.64	2.0	40	0	76.6	64 - 133				
Carbon tetrachloride	19.82	1.0	20	0	99.1	72 - 136				
Chlorobenzene	21.47	1.0	20	0	107	82 - 118				
Chloroethane	14.38	1.0	20	0	71.9	60 - 138				
Chloroform	17.97	1.0	20	0	89.9	79 - 124				
Chloromethane	7.155	1.0	20	0	35.8	50 - 139				S
cis-1,2-Dichloroethene	19.27	1.0	20	0	96.4	78 - 123				
cis-1,3-Dichloropropene	18.94	1.0	20	0	94.7	75 - 124				
Dibromochloromethane	20.33	1.0	20	0	102	74 - 126				
Dibromomethane	19.5	1.0	20	0	97.5	79 - 123				
Dichlorodifluoromethane	1.401	1.0	20	0	7.00	32 - 152				S
Ethylbenzene	21.65	1.0	20	0	108	79 - 121				
Hexachlorobutadiene	21.4	1.0	20	0	107	66 - 134				
Isopropylbenzene	21.71	1.0	20	0	109	72 - 131				
m,p-Xylene	43.89	2.0	40	0	110	80 - 121				
Methylene chloride	17.63	2.0	20	0	88.1	74 - 124				
Naphthalene	15.23	1.0	20	0	76.1	61 - 128				
n-Butylbenzene	21.77	1.0	20	0	109	75 - 128				
n-Propylbenzene	22.28	1.0	20	0	111	76 - 126				
o-Xylene	20.94	1.0	20	0	105	78 - 122				
sec-Butylbenzene	22.24	1.0	20	0	111	77 - 126				
Styrene	20.67	1.0	20	0	103	78 - 123				
tert-Butylbenzene	21.91	1.0	20	0	110	78 - 124				
Tetrachloroethene	22.31	1.0	20	0	112	74 - 129				
Toluene	20.87	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	18.46	1.0	20	0.9486	87.5	75 - 124				
trans-1,3-Dichloropropene	18.91	1.0	20	0	94.6	73 - 127				
Trichloroethene	23.13	1.0	20	0	116	79 - 123				
Trichlorofluoromethane	15.11	1.0	20	0	75.6	65 - 141				
Vinyl chloride	9.005	1.0	20	0	45.0	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*44.34*	*1.0*	*50*	*0*	*88.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.08*	*1.0*	*50*	*0*	*96.2*	*85 - 114*				
Surr: Dibromofluoromethane	*46.51*	*1.0*	*50*	*0*	*93.0*	*80 - 119*				
Surr: Toluene-d8	*53.54*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22090715-01MSD** Units: **ug/L** Analysis Date: **16-Sep-2022 16:54**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.78	1.0	20	0	98.9	78 - 124	20.78	4.9	20	
1,1,1-Trichloroethane	17.05	1.0	20	0	85.2	74 - 131	18.46	7.95	20	
1,1,2,2-Tetrachloroethane	20.58	1.0	20	0	103	71 - 121	20.15	2.13	20	
1,1,2-Trichloroethane	20.03	1.0	20	0	100	80 - 119	20.63	2.95	20	
1,1-Dichloroethane	16.91	1.0	20	0	84.5	77 - 125	17.62	4.12	20	
1,1-Dichloroethene	15.34	1.0	20	0	76.7	71 - 131	16.31	6.15	20	
1,1-Dichloropropene	18.08	1.0	20	0	90.4	78 - 125	20.78	13.9	20	
1,2,3-Trichlorobenzene	24.19	1.0	20	0	121	69 - 129	17.32	33.1	20	R
1,2,3-Trichloropropane	20.02	1.0	20	0	100	73 - 122	19.17	4.35	20	
1,2,4-Trichlorobenzene	22.5	1.0	20	0	113	69 - 130	17.9	22.8	20	R
1,2,4-Trimethylbenzene	21.19	1.0	20	0	106	76 - 124	20.78	1.94	20	
1,2-Dibromo-3-chloropropane	21.98	1.0	20	0	110	62 - 128	19.76	10.6	20	
1,2-Dibromoethane	19.43	1.0	20	0	97.2	77 - 121	20.81	6.85	20	
1,2-Dichlorobenzene	21.65	1.0	20	0	108	80 - 119	20.7	4.51	20	
1,2-Dichloroethane	17.08	1.0	20	0	85.4	73 - 128	18.42	7.55	20	
1,2-Dichloropropane	18.2	1.0	20	0	91.0	78 - 122	19.49	6.88	20	
1,3,5-Trimethylbenzene	21.21	1.0	20	0	106	75 - 124	20.83	1.8	20	
1,3-Dichlorobenzene	20.78	1.0	20	0	104	80 - 119	21.26	2.27	20	
1,3-Dichloropropane	19.62	1.0	20	0	98.1	80 - 119	20.5	4.38	20	
1,4-Dichlorobenzene	21.25	1.0	20	0	106	79 - 118	20.89	1.72	20	
2,2-Dichloropropane	16.26	1.0	20	0	81.3	60 - 139	17.88	9.49	20	
2-Butanone	31.05	2.0	40	0	77.6	56 - 143	32.14	3.43	20	
2-Chlorotoluene	19.93	1.0	20	0	99.7	79 - 122	20.26	1.61	20	
2-Hexanone	40.19	2.0	40	0	100	57 - 139	40.3	0.292	20	
4-Chlorotoluene	20.53	1.0	20	0	103	78 - 122	20.42	0.533	20	
4-Isopropyltoluene	22	1.0	20	0	110	77 - 127	22.15	0.701	20	
4-Methyl-2-pentanone	39.16	2.0	40	0	97.9	67 - 130	43.07	9.53	20	
Acetone	29.31	2.0	40	0	73.3	39 - 160	26.36	10.6	20	
Benzene	18.28	1.0	20	0	91.4	79 - 120	19.88	8.4	20	
Bromobenzene	21.31	1.0	20	0	107	80 - 120	21.27	0.164	20	
Bromochloromethane	16.33	1.0	20	0	81.6	78 - 123	16.7	2.28	20	
Bromodichloromethane	17.93	1.0	20	0	89.6	79 - 125	19.19	6.8	20	
Bromoform	18.65	1.0	20	0	93.3	66 - 130	19.19	2.87	20	
Bromomethane	10.27	1.0	20	0	51.3	53 - 141	11.38	10.2	20	S

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417372 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22090715-01MSD** Units: **ug/L** Analysis Date: **16-Sep-2022 16:54**
Client ID: Run ID: **VOA6_417372** SeqNo: **6855296** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	28.87	2.0	40	0	72.2	64 - 133	30.64	5.95	20	
Carbon tetrachloride	17.27	1.0	20	0	86.4	72 - 136	19.82	13.7	20	
Chlorobenzene	20.37	1.0	20	0	102	82 - 118	21.47	5.25	20	
Chloroethane	12.64	1.0	20	0	63.2	60 - 138	14.38	12.9	20	
Chloroform	16.73	1.0	20	0	83.6	79 - 124	17.97	7.17	20	
Chloromethane	5.818	1.0	20	0	29.1	50 - 139	7.155	20.6	20	SR
cis-1,2-Dichloroethene	17.5	1.0	20	0	87.5	78 - 123	19.27	9.62	20	
cis-1,3-Dichloropropene	17.6	1.0	20	0	88.0	75 - 124	18.94	7.31	20	
Dibromochloromethane	19.3	1.0	20	0	96.5	74 - 126	20.33	5.22	20	
Dibromomethane	17.97	1.0	20	0	89.8	79 - 123	19.5	8.19	20	
Dichlorodifluoromethane	1.321	1.0	20	0	6.61	32 - 152	1.401	5.86	20	S
Ethylbenzene	20.51	1.0	20	0	103	79 - 121	21.65	5.4	20	
Hexachlorobutadiene	23.47	1.0	20	0	117	66 - 134	21.4	9.25	20	
Isopropylbenzene	20.86	1.0	20	0	104	72 - 131	21.71	4.01	20	
m,p-Xylene	41.47	2.0	40	0	104	80 - 121	43.89	5.68	20	
Methylene chloride	16.88	2.0	20	0	84.4	74 - 124	17.63	4.34	20	
Naphthalene	22.36	1.0	20	0	112	61 - 128	15.23	37.9	20	R
n-Butylbenzene	22.19	1.0	20	0	111	75 - 128	21.77	1.89	20	
n-Propylbenzene	22.07	1.0	20	0	110	76 - 126	22.28	0.913	20	
o-Xylene	20.28	1.0	20	0	101	78 - 122	20.94	3.17	20	
sec-Butylbenzene	22	1.0	20	0	110	77 - 126	22.24	1.1	20	
Styrene	20.21	1.0	20	0	101	78 - 123	20.67	2.25	20	
tert-Butylbenzene	22.07	1.0	20	0	110	78 - 124	21.91	0.707	20	
Tetrachloroethene	20.61	1.0	20	0	103	74 - 129	22.31	7.91	20	
Toluene	19.84	1.0	20	0	99.2	80 - 121	20.87	5.08	20	
trans-1,2-Dichloroethene	17.01	1.0	20	0.9486	80.3	75 - 124	18.46	8.14	20	
trans-1,3-Dichloropropene	17.32	1.0	20	0	86.6	73 - 127	18.91	8.8	20	
Trichloroethene	19.53	1.0	20	0	97.7	79 - 123	23.13	16.9	20	
Trichlorofluoromethane	14.6	1.0	20	0	73.0	65 - 141	15.11	3.43	20	
Vinyl chloride	8.718	1.0	20	0	43.6	58 - 137	9.005	3.24	20	S
Surr: 1,2-Dichloroethane-d4	*47.34*	*1.0*	*50*	*0*	*94.7*	*81 - 118*	*44.34*	*6.53*	*20*	
Surr: 4-Bromofluorobenzene	*48.66*	*1.0*	*50*	*0*	*97.3*	*85 - 114*	*48.08*	*1.19*	*20*	
Surr: Dibromofluoromethane	*47.27*	*1.0*	*50*	*0*	*94.5*	*80 - 119*	*46.51*	*1.63*	*20*	
Surr: Toluene-d8	*53.45*	*1.0*	*50*	*0*	*107*	*89 - 112*	*53.54*	*0.17*	*20*	

ALS Houston, US Date: 19-Sep-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22090731

QC BATCH REPORT

Batch ID:	**R417372 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22090731-01	HS22090731-02

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22090731

QC BATCH REPORT

Batch ID: R417406 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **18-Sep-2022 10:45**
Client ID: Run ID: **ICS-Integrion_417406** SeqNo: **6856281** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **18-Sep-2022 10:50**
Client ID: Run ID: **ICS-Integrion_417406** SeqNo: **6856282** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.68	0.500	20	0	98.4	80 - 120				
Sulfate	19.71	0.500	20	0	98.5	80 - 120				

MS Sample ID: **HS22090763-05MS** Units: **mg/L** Analysis Date: **18-Sep-2022 11:51**
Client ID: Run ID: **ICS-Integrion_417406** SeqNo: **6856284** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	745	5.00	100	714.1	30.8	80 - 120				SO
Sulfate	267.1	5.00	100	180.8	86.3	80 - 120				

MSD Sample ID: **HS22090763-05MSD** Units: **mg/L** Analysis Date: **18-Sep-2022 11:57**
Client ID: Run ID: **ICS-Integrion_417406** SeqNo: **6856285** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	745	5.00	100	714.1	30.9	80 - 120	745	0.00805	20	SO
Sulfate	267	5.00	100	180.8	86.2	80 - 120	267.1	0.0262	20	

The following samples were analyzed in this batch: HS22090731-01

ALS Houston, US Date: 19-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22090731**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 19-Sep-22

Sample Receipt Checklist

Work Order ID: HS22090731 **Date/Time Received:** **15-Sep-2022 09:05**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: /S/ Paresh M. Giga (eSignature) 15-Sep-2022 13:57 (Date/Time) **Reviewed by:** /S/ Dane J. Wacasey (eSignature) 19-Sep-2022 13:16 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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):	2.0C/1.8C U/C	IR31	
Cooler(s)/Kit(s):	48858		
Date/Time sample(s) sent to storage:	9/15/22 14:00		
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 ATTN: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O Number

HS22090731

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Bi-Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_091422	Water	09/14/22 / 13:00		3	3		HCL	
LH18/24-SP650_091422	Water	09/14/22 / 13:00		1		1	NONE	
Trip Blank	Water	09/14/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

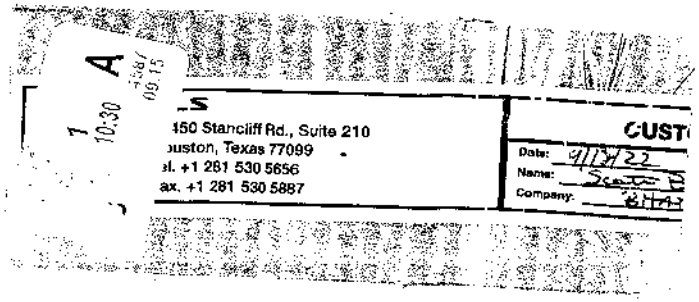
Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/14/22	13:30		09 15	0905						

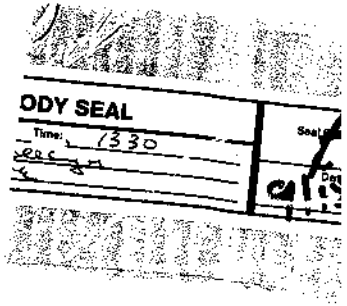
For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks

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


450 Stancliff Rd., Suite 210
uston, Texas 77099
el. +1 281 530 5656
ax. +1 281 530 5887
CUST
Date: 9/15/22
Name:
Company:


ODY SEAL
Time: 1330


FedEx
8881 8880 4587
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

September 29, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22091050**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 22, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22091050

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22091050-01	LH18/24-SP650_092122	Water		21-Sep-2022 13:00	22-Sep-2022 08:50	☐
HS22091050-02	LH18/24-SP650_092122_AIX	Water		21-Sep-2022 13:00	22-Sep-2022 08:50	☐
HS22091050-03	LH18/24-SP650_0921_BIX	Water		21-Sep-2022 13:00	22-Sep-2022 08:50	☐

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22091050

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E350.3

Batch ID: R418248

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

WetChemistry by Method E415.1

Batch ID: R417998

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

WetChemistry by Method E365.3

Batch ID: R417717

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

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091050
Sample ID: LH18/24-SP650_092122
Lab ID:HS22091050-01
Collection Date: 21-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**21**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	29-Sep-2022 15:35
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**6.90**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	22-Sep-2022 14:50
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**8.78**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	26-Sep-2022 17:07

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

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091050
Sample ID: LH18/24-SP650_092122_AIX
Lab ID:HS22091050-02
Collection Date: 21-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	29-Sep-2022 16:17

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

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091050
Sample ID: LH18/24-SP650_0921_BIX
Lab ID:HS22091050-03
Collection Date: 21-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	29-Sep-2022 16:17

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

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091050

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R417717 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22091050-01	LH18/24-SP650_092122	21 Sep 2022 13:00			22 Sep 2022 14:50	10
Batch ID: R417998 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22091050-01	LH18/24-SP650_092122	21 Sep 2022 13:00			26 Sep 2022 17:07	1
Batch ID: R418243 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22091050-02	LH18/24-SP650_092122_AIX	21 Sep 2022 13:00			29 Sep 2022 16:17	1
HS22091050-03	LH18/24-SP650_0921_BIX	21 Sep 2022 13:00			29 Sep 2022 16:17	1
Batch ID: R418248 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22091050-01	LH18/24-SP650_092122	21 Sep 2022 13:00			29 Sep 2022 15:35	1

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091050

QC BATCH REPORT

Batch ID: R417717 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R417717** Units: **mg/L** Analysis Date: **22-Sep-2022 14:50**
Client ID: Run ID: **UV-2450_417717** SeqNo: **6879614** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R417717** Units: **mg/L** Analysis Date: **22-Sep-2022 14:50**
Client ID: Run ID: **UV-2450_417717** SeqNo: **6879613** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	0	94.0	85 - 115				

LCSD Sample ID: **LCSD-R417717** Units: **mg/L** Analysis Date: **22-Sep-2022 14:50**
Client ID: Run ID: **UV-2450_417717** SeqNo: **6879619** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.246	0.0250	0.25	0	98.4	85 - 115	0.235	4.57	20	

MS Sample ID: **HS22091042-01MS** Units: **mg/L** Analysis Date: **22-Sep-2022 14:50**
Client ID: Run ID: **UV-2450_417717** SeqNo: **6879616** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.243	0.0250	0.25	0.001	96.8	80 - 120				

MSD Sample ID: **HS22091042-01MSD** Units: **mg/L** Analysis Date: **22-Sep-2022 14:50**
Client ID: Run ID: **UV-2450_417717** SeqNo: **6879615** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.235	0.0250	0.25	0.001	93.6	80 - 120	0.243	3.35	20	

The following samples were analyzed in this batch: HS22091050-01

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091050

QC BATCH REPORT

Batch ID: R417998 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-09262022** Units: **mg/L** Analysis Date: **26-Sep-2022 15:17**
Client ID: Run ID: **TOC_04_417998** SeqNo: **6885298** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-09262022** Units: **mg/L** Analysis Date: **26-Sep-2022 15:31**
Client ID: Run ID: **TOC_04_417998** SeqNo: **6885299** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.55	1.00	10	0	106	85 - 115				

LCSD Sample ID: **LCSD-09262022** Units: **mg/L** Analysis Date: **26-Sep-2022 15:45**
Client ID: Run ID: **TOC_04_417998** SeqNo: **6885300** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.58	1.00	10	0	106	85 - 115	10.55	0.284	20	

MS Sample ID: **HS22090742-01MS** Units: **mg/L** Analysis Date: **26-Sep-2022 16:13**
Client ID: Run ID: **TOC_04_417998** SeqNo: **6885302** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	19.85	1.00	10	8.4	114	80 - 120				

The following samples were analyzed in this batch: HS22091050-01

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091050

QC BATCH REPORT

Batch ID: R418248 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R418248** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892985** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R418248** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892984** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.419	0.20	10	0	94.2	80 - 120				

MS Sample ID: **HS22091362-01MS** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892987** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	35.26	0.20	10	25.15	101	80 - 120				

MSD Sample ID: **HS22091362-01MSD** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892986** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	35.25	0.20	10	25.15	101	80 - 120	35.26	0.017	20	

The following samples were analyzed in this batch: HS22091050-01

ALS Houston, US Date: 29-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22091050**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 29-Sep-22

Sample Receipt Checklist

Work Order ID: HS22091050 **Date/Time Received:** **22-Sep-2022 08:50**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By:	/S/ Nilesh D. Ranchod	22-Sep-2022 10:29	**Reviewed by:**	/S/ Dane J. Wacasey	22-Sep-2022 14:42
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:Client
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/1.3C U/C	IR31
Cooler(s)/Kit(s):	48375	
Date/Time sample(s) sent to storage:	9/22/22 10:35	

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

HS22091050

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

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

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

Project No. NWO1312.0150.0 16.0001

Job: GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By: Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Ar	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_092122	Water	09/21/22 / 13:00		3	X	X				H2SO4	
LH18/24-SP650_092122	Water	09/21/22 / 13:00		1			X			NONE	
LH18/24-SP650_092122_AIX	Water	09/21/22 / 13:00		1				X		NONE	
LH18/24-SP650_0921_BIX	Water	09/21/22 / 13:00		1				X		NONE	

Additional Remarks: **Standard TAT**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/21/22	13:30		9/22/22	08:30						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks: 08375 #31 CIF-0.2

(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

48375

CUSTODY SEAL

Date: 9/22/22 Time: 1330
Name: Scott Beesinger
Company: SHARC

Seal Broken By:
Date: 09/22/22

48375 SEP 22 2022

Must Deliver Next Business Day
Time and Tempature Sensitive!

48375

ORIGIN ID:SGRA (903) 930-8199
SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 19SEP22
ACTWGT: 1.00 LB MAN
CAD: 9001130/CAFE3211
DIMS: 15x16x13 IN

TO **CLIENT SERVICES**
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 16 - BO 73884 - RJ
RMA:

FedEx Express

FedEx
TRK# 9221 1891 8880 4532

THU - 22 SEP AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

42J46674 21Sep2022 SGGA 581G1/FC8C/E08B

September 29, 2022 Service Request No:E2200906

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22091050

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 22, 2022
For your reference, these analyses have been assigned our service request number **E2200906.**

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

James Guin

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 Environmental - US	**Service Request No.:**	E2200906
Project:	HS22091050	**Date Received:**	09/22/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 09/22/22.

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:

EQ2200430-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS/DLCS recoveries passed.

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:**E2200906
Project: HS22091050

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200906-001	LH18/24-SP650_092122_AIX	9/21/2022	1300
E2200906-002	LH18/24-SP650_092122_BIX	9/21/2022	1300

Service Request Summary

Folder #: **E2200906**
Client Name: ALS Environmental - US
Project Name: HS22091050
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 09/22/22
Internal Due Date: 9/29/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22091050
EDD: No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200906-001	LH18/24-SP650_092122_AIX	Water	09/21/22 1300	**IV**
E2200906-002	LH18/24-SP650_092122_BIX	Water	09/21/22 1300	**IV**

Service Request Summary

Folder #:	**E2200906**
Client Name:	ALS Environmental - US
Project Name:	HS22091050
Project Number:	

Report To:	Dane Wacasey ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-575-2190
Cell Number:	
Fax Number:	281-530-5887
E-mail:	dane.wacasey@alsglobal.com

Project Chemist:	James Guin
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	09/22/22
Internal Due Date:	9/29/2022
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS22091050
EDD:	No EDD Specified

2 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

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:** 19927

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22091050
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22091050-02**	**LH18/24-SP650_092122_AIX**	**Water**	**21 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			29 Sep 2022
2.	**HS22091050-03**	**LH18/24-SP650_0921_BIX**	**Water**	**21 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			29 Sep 2022

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: 9/22/22 1700

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID IR41

Date/Time Received: 9/22/22 Initials: CG

Date/Time Logged in: 9/22/22 Initials CG

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		9/22/22	1500	CG	1.2	☒
						☐
						☐
						☐

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
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 407013 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 9/26/22 14:45

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200906-001	LH18/24-SP650_092122_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200906-002	LH18/24-SP650_092122_BIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200918-021	CHAAP-GW-G0083-092122	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2200918-022	CHAAP-GW-PZ019-092122	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2200918-023	CHAAP-GW-PZ020-092122	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2200918-024	CHAAP-GW-DUP02-092122	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2200918-025	CHAAP-GW-DUP03-092122	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2200919-001	MAO2MW001D-S	.01	6850/ClO4 DOD			Ground Water	10mL	
9	EQ2200430-01	MB		6850/ClO4 DOD			Liquid	10mL	
10	EQ2200430-02	LCS		6850/ClO4 DOD			Liquid	10mL	
11	EQ2200430-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
12	R2208801-014	2209141504C NASA 10	.01	6850/ClO4			Water	10mL	
13	R2208941-004	2209190916A BW-6-355	.01	6850/ClO4			Water	10mL	
14	R2208941-006	2209190933C 700-D-186	.01	6850/ClO4			Water	10mL	
15	R2208941-011	2209191058Y 700-H-670	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200430-02	1.00µL	EQ2200430-02	1.00µL	EQ2200430-03	1.00µL	EQ2200430-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200906-001	100.00µL	E2200906-002	100.00µL	E2200918-021	100.00µL	E2200918-022	100.00µL	E2200918-023	100.00µL	E2200918-024	100.00µL
E2200918-025	100.00µL	E2200919-001	100.00µL	EQ2200430-01	100.00µL	EQ2200430-01	100.00µL	EQ2200430-02	100.00µL	EQ2200430-02	100.00µL
EQ2200430-03	100.00µL	EQ2200430-03	100.00µL	R2208801-014	100.00µL	R2208941-004	100.00µL	R2208941-006	100.00µL	R2208941-011	100.00µL

Preparation Materials

Water HPLC Grade	09/22/22 Water (225106)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 9/26/22 14:45
Finished: 9/26/22 15:15
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 407013
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 9/26/22 14:45

Comments:

Reviewed By: GR Date: 09/26/22

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:**	E2200906
Project:	HS22091050	**Date Collected:**	9/21/22 1300
Sample Matrix:	Water	**Date Received:**	9/22/22
Sample Name:	LH18/24-SP650_092122_AIX	**Units:**	µg/L
Lab Code:	E2200906-001	**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	**0.338**		0.100	0.0500	0.0250	1	9/26/22	9/29/22 14:22	407013	779430	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200906
Project:	HS22091050	**Date Collected:**	9/21/22 1300
Sample Matrix:	Water	**Date Received:**	9/22/22
Sample Name:	LH18/24-SP650_092122_BIX	**Units:**	µg/L
Lab Code:	E2200906-002	**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	**0.0438**	J	0.100	0.0500	0.0250	1	9/26/22	9/29/22 14:50	407013	779430	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200906
Project:	HS22091050	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200430-01	**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	9/26/22	9/29/22 13:57	407013	779430	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22091050
Sample Matrix: Water

Service Request: E2200906
Date Analyzed: 9/29/22

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: 407013

	Lab Control Sample EQ2200430-02			Duplicate Lab Control Sample EQ2200430-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.107	0.100	107	0.115	0.100	115	84 - 119	8	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:**	E2200906
Project:	HS22091050	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200430-02	**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	**0.107**		0.100	0.0500	0.0250	1	9/26/22	9/29/22 14:05	407013	779430	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200906
Project:	HS22091050	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200430-03	**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	**0.115**		0.100	0.0500	0.0250	1	9/26/22	9/29/22 14:14	407013	779430	

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Houston, TX 77099
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October 04, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22091362**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 3 sample(s) on Sep 28, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22091362

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22091362-01	LH18/24-SP650_092722	Water		27-Sep-2022 13:00	28-Sep-2022 09:25	☐
HS22091362-02	LH18/24-SP650_092722_AIX	Water		27-Sep-2022 13:00	28-Sep-2022 09:25	☐
HS22091362-03	LH18/24-SP650_0927_BIX	Water		27-Sep-2022 13:00	28-Sep-2022 09:25	☐

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS22091362

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Houston High-Res Lab. Final report attached

WetChemistry by Method E415.1

Batch ID: R418521

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

WetChemistry by Method E365.3

Batch ID: R418261

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

WetChemistry by Method E350.3

Batch ID: R418248

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

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091362
Sample ID: LH18/24-SP650_092722
Lab ID:HS22091362-01
Collection Date: 27-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**25**	a	**0.10**	**0.10**	**0.20**	**mg/L**	1	29-Sep-2022 15:35
ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**3.03**	a	**0.100**	**0.125**	**0.250**	**mg/L**	10	29-Sep-2022 11:29
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: JAC
Organic Carbon, Total	**20.8**	a	**0.500**	**1.00**	**1.00**	**mg/L**	1	03-Oct-2022 12:47

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

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091362
Sample ID: LH18/24-SP650_092722_AIX
Lab ID:HS22091362-02
Collection Date: 27-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	04-Oct-2022 14:43

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

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
ANALYTICAL REPORT
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder:HS22091362
Sample ID: LH18/24-SP650_0927_BIX
Lab ID:HS22091362-03
Collection Date: 27-Sep-2022 13:00
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	04-Oct-2022 14:43

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

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091362

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R418248 (0)	**Test Name :** AMMONIA AS N BY E350.3(ISE)				**Matrix:** Water	
HS22091362-01	LH18/24-SP650_092722	27 Sep 2022 13:00			29 Sep 2022 15:35	1
Batch ID: R418261 (0)	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978				**Matrix:** Water	
HS22091362-01	LH18/24-SP650_092722	27 Sep 2022 13:00			29 Sep 2022 11:29	10
Batch ID: R418521 (0)	**Test Name :** TOTAL ORGANIC CARBON BY E415.1				**Matrix:** Water	
HS22091362-01	LH18/24-SP650_092722	27 Sep 2022 13:00			03 Oct 2022 12:47	1
Batch ID: R418545 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22091362-02	LH18/24-SP650_092722_AIX	27 Sep 2022 13:00			04 Oct 2022 14:43	1
HS22091362-03	LH18/24-SP650_0927_BIX	27 Sep 2022 13:00			04 Oct 2022 14:43	1

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091362

QC BATCH REPORT

Batch ID: R418248 (0) **Instrument: WetChem_HS** **Method: AMMONIA AS N BY E350.3(ISE)**

MBLK Sample ID: **MBLK-R418248** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892985** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.10	0.20								U

LCS Sample ID: **LCS-R418248** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: Run ID: **WetChem_HS_418248** SeqNo: **6892984** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.419	0.20	10	0	94.2	80 - 120				

MS Sample ID: **HS22091362-01MS** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: **LH18/24-SP650_092722** Run ID: **WetChem_HS_418248** SeqNo: **6892987** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	35.26	0.20	10	25.15	101	80 - 120				

MSD Sample ID: **HS22091362-01MSD** Units: **mg/L** Analysis Date: **29-Sep-2022 15:35**
Client ID: **LH18/24-SP650_092722** Run ID: **WetChem_HS_418248** SeqNo: **6892986** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	35.25	0.20	10	25.15	101	80 - 120	35.26	0.017	20	

The following samples were analyzed in this batch: HS22091362-01

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091362

QC BATCH REPORT

Batch ID: R418261 (0) **Instrument:** UV-2450 **Method:** ORTHO PHOSPHATE (PO4) AS P BY E365.3-1978

MBLK Sample ID: **MBLK-R418261** Units: **mg/L** Analysis Date: **29-Sep-2022 11:29**
Client ID: Run ID: **UV-2450_418261** SeqNo: **6893153** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0125	0.0250								U

LCS Sample ID: **LCS-R418261** Units: **mg/L** Analysis Date: **29-Sep-2022 11:29**
Client ID: Run ID: **UV-2450_418261** SeqNo: **6893152** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.267	0.0250	0.25	0	107	85 - 115				

MS Sample ID: **HS22091362-01MS** Units: **mg/L** Analysis Date: **29-Sep-2022 11:29**
Client ID: **LH18/24-SP650_092722** Run ID: **UV-2450_418261** SeqNo: **6893155** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	5.27	0.250	2.5	3.03	89.6	80 - 120				

MSD Sample ID: **HS22091362-01MSD** Units: **mg/L** Analysis Date: **29-Sep-2022 11:29**
Client ID: **LH18/24-SP650_092722** Run ID: **UV-2450_418261** SeqNo: **6893154** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	5.23	0.250	2.5	3.03	88.0	80 - 120	5.27	0.762	20	

The following samples were analyzed in this batch: HS22091362-01

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS22091362

QC BATCH REPORT

Batch ID: R418521 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON BY E415.1**

MBLK Sample ID: **MBLK-10032022** Units: **mg/L** Analysis Date: **03-Oct-2022 11:48**
Client ID: Run ID: **TOC_04_418521** SeqNo: **6899511** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.00	1.00								U

LCS Sample ID: **LCS-10032022** Units: **mg/L** Analysis Date: **03-Oct-2022 12:01**
Client ID: Run ID: **TOC_04_418521** SeqNo: **6899512** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.46	1.00	10	0	105	85 - 115				

LCSD Sample ID: **LCSD-10032022** Units: **mg/L** Analysis Date: **03-Oct-2022 12:32**
Client ID: Run ID: **TOC_04_418521** SeqNo: **6899513** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.71	1.00	10	0	107	85 - 115	10.46	2.36	20	

MS Sample ID: **HS22091362-01MS** Units: **mg/L** Analysis Date: **03-Oct-2022 13:01**
Client ID: **LH18/24-SP650_092722** Run ID: **TOC_04_418521** SeqNo: **6899515** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	31.84	1.00	10	20.82	110	80 - 120				

The following samples were analyzed in this batch: HS22091362-01

ALS Houston, US Date: 04-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: **HS22091362**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 04-Oct-22

Sample Receipt Checklist

Work Order ID: HS22091362 **Date/Time Received:** **28-Sep-2022 09:25**

Client Name: Bhate Environmental **Received by:** **Corey Grandits**

Completed By: */S/ Paresh M. Giga* (eSignature) 28-Sep-2022 12:23 (Date/Time) **Reviewed by:** */S/ Ragen Giga* (eSignature) 04-Oct-2022 08:09 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:Client
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/2.2C U/C	IR31	
Cooler(s)/Kit(s):	46962		
Date/Time sample(s) sent to storage:	9/28/22 12:30		
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: Dane Wacasey

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

Project No. NWO1312.0150.0 16.0001

Job: **GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES**

Prepared By: Scott Beesinger

P.O. Number

HS22091362
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_092722	Water	09/27/22 / 13:00		3	X	X			H2SO4	
LH18/24-SP650_092722	Water	09/27/22 / 13:00		1			X		NONE	
LH18/24–SP650_092722_AIX	Water	09/27/22 / 13:00		1				X	NONE	
LH18/24-SP650_0927_BIX	Water	09/27/22 / 13:00		1				X	NONE	

Additional Remarks: Standard TAT

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/27/22	13:30	FedEx	9/28/22	0830						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

46562 2.96
10211 0.02

(Word) S:\1-ees\Forms\Chain of Custody - BiWeekly

01133533

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

CUSTODY SEAL
Date: 9/27/22 Time: 1330
Name: Beeson
Company: BHATA

FedEx
TRK# 0221 1891 8880 4495
WED - 28 SEP AA
PRIORITY OVERNIGHT
AB SGRA 4656 2 77099
TX-US
IAH

October 04, 2022 Service Request No:E2200941

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22091362

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory September 29, 2022
For your reference, these analyses have been assigned our service request number **E2200941.**

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.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

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 Environmental - US	**Service Request No.:**	E2200941
Project:	HS22091362	**Date Received:**	09/28/22
Sample Matrix:	Water		

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

Two samples were received for analysis at ALS Environmental in Houston on 09/28/22.

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:

EQ2200442-02/03: 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 are within quality control limits.

The batch precision (MS/DMS) measurements were determined on an unrelated sample in the extraction batch. The MS/DMS results are not included 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:**E2200941
Project: HS22091362

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200941-001	LH18/24-SP650_092722_AIX	9/27/2022	1300
E2200941-002	LH18/24-SP650_0927_bIX	9/27/2022	1300

Service Request Summary

Folder #: **E2200941**
Client Name: ALS Environmental - US
Project Name: HS22091362
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 09/29/22
Internal Due Date: 10/5/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22091362
EDD: BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200941-001	LH18/24-SP650_092722_AIX	Water	09/27/22 1300	**IV**
E2200941-002	LH18/24-SP650_0927_bIX	Water	09/27/22 1300	**IV**

Service Request Summary

Folder #:	**E2200941**
Client Name:	ALS Environmental - US
Project Name:	HS22091362
Project Number:	

Report To:	Dane Wacasey ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-575-2190
Cell Number:	
Fax Number:	281-530-5887
E-mail:	dane.wacasey@alsglobal.com

Project Chemist:	James Guin
Originating Lab:	HOUSTON
Logged By:	JGUIN
Date Received:	09/29/22
Internal Due Date:	10/5/2022
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS22091362
EDD:	BASIC_WQC_CASNo_LOD

2 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

Chain of Custody

ALS Environmental - Houston HRMS
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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **19969**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22091362
TSR:	Houston House Acct

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22091362-02**	**LH18/24-SP650_092722_AIX**	**Water**	**27 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			05 Oct 2022
2.	**HS22091362-03**	**LH18/24-SP650_0927_BIX**	**Water**	**27 Sep 2022 13:00**
	6850-Perch. DOD Level II & Level IV in separate pdf			05 Oct 2022

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: ROBERTS Date/Time: 9/28/22 2140

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS

Thermometer ID 1251

Date/Time Received: 9/28/22 Initials: CH Date/Time Logged in: 9/29/22 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?
~		9/28/22	2140	CH	5.1	☒
						☐
						☐
						☐

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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Houston, TX 77099
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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
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 407451 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/3/22 09:20

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200941-001	LH18/24-SP650_092722_AIX	.01	6850/ClO4 DOD			Water	10mL	
2	E2200941-002	LH18/24-SP650_0927_bIX	.01	6850/ClO4 DOD			Water	10mL	
3	E2200944-001	HTA-HTA16-A-0922	.01	6850/ClO4 DOD			Water	10mL	
4	E2200944-002	HTA-RB-0922	.01	6850/ClO4 DOD			Water	10mL	
5	E2200944-003	HTA-HTA25-A-0922	.01	6850/ClO4 DOD			Water	10mL	
6	E2200944-004	HTA-HTA15-A-0922	.01	6850/ClO4 DOD			Water	10mL	
7	E2200944-005	HTA-HTA20-A-0922	.01	6850/ClO4 DOD			Water	10mL	
8	E2200944-006	HTA-HTA10A-A-0922	.01	6850/ClO4 DOD			Water	10mL	
9	E2200944-007	HTA-HTA12-A-0922	.01	6850/ClO4 DOD			Water	10mL	
10	E2200944-008	HTA-HTA17-A-0922	.01	6850/ClO4 DOD			Water	10mL	
11	E2200944-009	HTA-HTA19-A-0922	.01	6850/ClO4 DOD			Water	10mL	
12	E2200944-010	HTA-HTA03-A-0922	.01	6850/ClO4 DOD			Water	10mL	
13	E2200944-011	HTA-HTA03-B-0922	.01	6850/ClO4 DOD			Water	10mL	
14	E2200944-012	HTA-HTA11-A-0922	.01	6850/ClO4 DOD			Water	10mL	
15	E2200944-013	HTA-HTA14-A-0922	.01	6850/ClO4 DOD			Water	10mL	
16	E2200944-014	HTA-HTA13-A-0922	.01	6850/ClO4 DOD			Water	10mL	
17	E2200944-015	HTA-HTA13-B-0922	.01	6850/ClO4 DOD			Water	10mL	
18	E2200944-016	HTA-HTA16D-A-0922	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2200442-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200442-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200442-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2200442-04	HTA-HTA03-B-0922 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2200442-05	HTA-HTA03-B-0922 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200442-02	1.00µL	EQ2200442-03	1.00µL	EQ2200442-04	1.00µL	EQ2200442-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200941-001	100.00µL	E2200941-002	100.00µL	E2200944-001	100.00µL	E2200944-002	100.00µL	E2200944-003	100.00µL	E2200944-004	100.00µL
E2200944-005	100.00µL	E2200944-006	100.00µL	E2200944-007	100.00µL	E2200944-008	100.00µL	E2200944-009	100.00µL	E2200944-010	100.00µL
E2200944-011	100.00µL	E2200944-012	100.00µL	E2200944-013	100.00µL	E2200944-014	100.00µL	E2200944-015	100.00µL	E2200944-016	100.00µL
EQ2200442-01	100.00µL	EQ2200442-02	100.00µL	EQ2200442-03	100.00µL	EQ2200442-04	100.00µL	EQ2200442-05	100.00µL		

Preparation Information Benchsheet

Prep Run#: 407451 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 10/3/22 09:20

Preparation Materials

Water HPLC Grade	09/22/22 Water (225106)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 10/3/22 09:20
Finished: 10/3/22 10:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 10/03/22

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:**	E2200941
Project:	HS22091362	**Date Collected:**	9/27/22 1300
Sample Matrix:	Water	**Date Received:**	9/29/22
Sample Name:	LH18/24-SP650_092722_AIX	**Units:**	µg/L
Lab Code:	E2200941-001	**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	**0.166**		0.100	0.0500	0.0250	1	10/ 3/22	10/3/22 14:41	407451	779763	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200941
Project:	HS22091362	**Date Collected:**	9/27/22 1300
Sample Matrix:	Water	**Date Received:**	9/29/22
Sample Name:	LH18/24-SP650_0927_bIX	**Units:**	µg/L
Lab Code:	E2200941-002	**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	**3.89**		0.100	0.0500	0.0250	1	10/ 3/22	10/3/22 14:49	407451	779763	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200941
Project:	HS22091362	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200442-01	**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/ 3/22	10/3/22 13:51	407451	779763	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22091362
Sample Matrix: Water

Service Request: E2200941
Date Analyzed: 10/ 3/22

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: 407451

	Lab Control Sample EQ2200442-02			Duplicate Lab Control Sample EQ2200442-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0942	0.100	94	0.110	0.100	110	84 - 119	15	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:**	E2200941
Project:	HS22091362	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200442-02	**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	**0.0942**	J	0.100	0.0500	0.0250	1	10/ 3/22	10/3/22 13:59	407451	779763	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200941
Project:	HS22091362	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200442-03	**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/ 3/22	10/3/22 14:24	407451	779763	

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Houston, TX 77099
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October 06, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22091367**

Laboratory Results for: **Longhorn GW Treatment Plant Bi-Weekly Samples**

Dear Marcia Olive,

ALS Environmental received 2 sample(s) on Sep 28, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22091367

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22091367-01	LH18/24-SP650_092722	Water		27-Sep-2022 13:00	28-Sep-2022 09:25	☐
HS22091367-02	Trip Blank	Water	CG-121520-124	27-Sep-2022 00:00	28-Sep-2022 09:25	☐

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
Work Order: HS22091367

CASE NARRATIVE

GCMS Volatiles by Method SW8260

Batch ID: R418731

Sample ID: HS22100193-03MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R418379

Sample ID: HS22091119-01MS

- MS and MSD are for an unrelated sample (Chloride)

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22091367
Sample ID: LH18/24-SP650_092722 Lab ID:HS22091367-01
Collection Date: 27-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	05-Oct-2022 20:22
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	05-Oct-2022 20:22
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	05-Oct-2022 20:22
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	05-Oct-2022 20:22
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	05-Oct-2022 20:22
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22

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

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22091367
Sample ID: LH18/24-SP650_092722 Lab ID:HS22091367-01
Collection Date: 27-Sep-2022 13:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
cis-1,2-Dichloroethene	**2.5**		**0.20**	**0.50**	**1.0**	**ug/L**	1	05-Oct-2022 20:22
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	05-Oct-2022 20:22
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	05-Oct-2022 20:22
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 20:22
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 20:22
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 20:22
Surr: 1,2-Dichloroethane-d4	*95.1*			**0**	*81-118*	*%REC*	*1*	*05-Oct-2022 20:22*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*05-Oct-2022 20:22*
Surr: Dibromofluoromethane	*96.0*			**0**	*80-119*	*%REC*	*1*	*05-Oct-2022 20:22*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*05-Oct-2022 20:22*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,140**		**10.0**	**25.0**	**25.0**	**mg/L**	50	30-Sep-2022 11:02
Sulfate	**33.5**		**1.00**	**2.50**	**2.50**	**mg/L**	5	30-Sep-2022 10:57

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

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22091367
Sample ID: Trip Blank Lab ID:HS22091367-02
Collection Date: 27-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	05-Oct-2022 18:16
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	05-Oct-2022 18:16
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	05-Oct-2022 18:16
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	05-Oct-2022 18:16
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	05-Oct-2022 18:16
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16

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

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: Longhorn GW Treatment Plant Bi-Weekly Samples WorkOrder:HS22091367

Sample ID: Trip Blank Lab ID:HS22091367-02

Collection Date: 27-Sep-2022 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	05-Oct-2022 18:16
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	05-Oct-2022 18:16
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	05-Oct-2022 18:16
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	05-Oct-2022 18:16
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Trichlorofluoromethane	**3.8**		**0.30**	**1.0**	**1.0**	**ug/L**	1	05-Oct-2022 18:16
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	05-Oct-2022 18:16
Surr: 1,2-Dichloroethane-d4	*93.7*			**0**	*81-118*	*%REC*	*1*	*05-Oct-2022 18:16*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Oct-2022 18:16*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*1*	*05-Oct-2022 18:16*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*05-Oct-2022 18:16*

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

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R418379 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS22091367-01	LH18/24-SP650_092722	27 Sep 2022 13:00			30 Sep 2022 11:02	50
HS22091367-01	LH18/24-SP650_092722	27 Sep 2022 13:00			30 Sep 2022 10:57	5
Batch ID: R418731 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22091367-01	LH18/24-SP650_092722	27 Sep 2022 13:00			05 Oct 2022 20:22	1
HS22091367-02	Trip Blank	27 Sep 2022 00:00			05 Oct 2022 18:16	1

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-221005** Units: **ug/L** Analysis Date: **05-Oct-2022 17:34**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903897** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-221005** Units: **ug/L** Analysis Date: **05-Oct-2022 17:34**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903897** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*46.49*	*1.0*	*50*	*0*	*93.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.67*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*47.75*	*1.0*	*50*	*0*	*95.5*	*80 - 119*				
Surr: Toluene-d8	*55.14*	*1.0*	*50*	*0*	*110*	*89 - 112*				

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-221005** Units: **ug/L** Analysis Date: **05-Oct-2022 16:31**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903896** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.94	1.0	20	0	99.7	78 - 124				
1,1,1-Trichloroethane	20.19	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	19.28	1.0	20	0	96.4	71 - 121				
1,1,2-Trichloroethane	19.76	1.0	20	0	98.8	80 - 119				
1,1-Dichloroethane	20.16	1.0	20	0	101	77 - 125				
1,1-Dichloroethene	19.77	1.0	20	0	98.9	71 - 131				
1,1-Dichloropropene	20.07	1.0	20	0	100	78 - 125				
1,2,3-Trichlorobenzene	23.05	1.0	20	0	115	69 - 129				
1,2,3-Trichloropropane	19.82	1.0	20	0	99.1	73 - 122				
1,2,4-Trichlorobenzene	21.57	1.0	20	0	108	69 - 130				
1,2,4-Trimethylbenzene	21.08	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	17.64	1.0	20	0	88.2	62 - 128				
1,2-Dibromoethane	20.04	1.0	20	0	100	77 - 121				
1,2-Dichlorobenzene	20.17	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	19.77	1.0	20	0	98.9	73 - 128				
1,2-Dichloropropane	20.06	1.0	20	0	100	78 - 122				
1,3,5-Trimethylbenzene	21.15	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	20.49	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	19.47	1.0	20	0	97.3	80 - 119				
1,4-Dichlorobenzene	20.08	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	20.05	1.0	20	0	100	60 - 139				
2-Butanone	33.79	2.0	40	0	84.5	56 - 143				
2-Chlorotoluene	20.12	1.0	20	0	101	79 - 122				
2-Hexanone	37.92	2.0	40	0	94.8	57 - 139				
4-Chlorotoluene	20.84	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	21.39	1.0	20	0	107	77 - 127				
4-Methyl-2-pentanone	37.7	2.0	40	0	94.3	67 - 130				
Acetone	38.6	2.0	40	0	96.5	39 - 160				
Benzene	20.26	1.0	20	0	101	79 - 120				
Bromobenzene	20.22	1.0	20	0	101	80 - 120				
Bromochloromethane	20.12	1.0	20	0	101	78 - 123				
Bromodichloromethane	20.23	1.0	20	0	101	79 - 125				
Bromoform	19.36	1.0	20	0	96.8	66 - 130				
Bromomethane	22.9	1.0	20	0	114	53 - 141				

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-221005** Units: **ug/L** Analysis Date: **05-Oct-2022 16:31**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903896** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.19	2.0	40	0	100	64 - 133				
Carbon tetrachloride	19.73	1.0	20	0	98.7	72 - 136				
Chlorobenzene	20.14	1.0	20	0	101	82 - 118				
Chloroethane	19.64	1.0	20	0	98.2	60 - 138				
Chloroform	20.25	1.0	20	0	101	79 - 124				
Chloromethane	19.3	1.0	20	0	96.5	50 - 139				
cis-1,2-Dichloroethene	20.43	1.0	20	0	102	78 - 123				
cis-1,3-Dichloropropene	20.34	1.0	20	0	102	75 - 124				
Dibromochloromethane	19.58	1.0	20	0	97.9	74 - 126				
Dibromomethane	19.74	1.0	20	0	98.7	79 - 123				
Dichlorodifluoromethane	19.75	1.0	20	0	98.7	32 - 152				
Ethylbenzene	20.61	1.0	20	0	103	79 - 121				
Hexachlorobutadiene	21.05	1.0	20	0	105	66 - 134				
Isopropylbenzene	20.77	1.0	20	0	104	72 - 131				
m,p-Xylene	41.84	2.0	40	0	105	80 - 121				
Methylene chloride	23.42	2.0	20	0	117	74 - 124				
Naphthalene	21.73	1.0	20	0	109	61 - 128				
n-Butylbenzene	22.11	1.0	20	0	111	75 - 128				
n-Propylbenzene	21.2	1.0	20	0	106	76 - 126				
o-Xylene	20.71	1.0	20	0	104	78 - 122				
sec-Butylbenzene	20.88	1.0	20	0	104	77 - 126				
Styrene	20.94	1.0	20	0	105	78 - 123				
tert-Butylbenzene	20.83	1.0	20	0	104	78 - 124				
Tetrachloroethene	20.71	1.0	20	0	104	74 - 129				
Toluene	20.03	1.0	20	0	100	80 - 121				
trans-1,2-Dichloroethene	20.29	1.0	20	0	101	75 - 124				
trans-1,3-Dichloropropene	19.85	1.0	20	0	99.3	73 - 127				
Trichloroethene	20.36	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	20.36	1.0	20	0	102	65 - 141				
Vinyl chloride	19.59	1.0	20	0	97.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.44*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.83*	*1.0*	*50*	*0*	*106*	*85 - 114*				
Surr: Dibromofluoromethane	*53.66*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*52.43*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22100193-03MS** Units: **ug/L** Analysis Date: **05-Oct-2022 21:05**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903907** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	17.84	1.0	20	0	89.2	78 - 124				
1,1,1-Trichloroethane	17.56	1.0	20	0	87.8	74 - 131				
1,1,2,2-Tetrachloroethane	18.02	1.0	20	0	90.1	71 - 121				
1,1,2-Trichloroethane	18.4	1.0	20	0	92.0	80 - 119				
1,1-Dichloroethane	16.95	1.0	20	0	84.8	77 - 125				
1,1-Dichloroethene	17.35	1.0	20	0	86.8	71 - 131				
1,1-Dichloropropene	18.32	1.0	20	0	91.6	78 - 125				
1,2,3-Trichlorobenzene	14.8	1.0	20	0	74.0	69 - 129				
1,2,3-Trichloropropane	19.86	1.0	20	0	99.3	73 - 122				
1,2,4-Trichlorobenzene	15.99	1.0	20	0	80.0	69 - 130				
1,2,4-Trimethylbenzene	19.16	1.0	20	0	95.8	76 - 124				
1,2-Dibromo-3-chloropropane	15.78	1.0	20	0	78.9	62 - 128				
1,2-Dibromoethane	18.16	1.0	20	0	90.8	77 - 121				
1,2-Dichlorobenzene	18.3	1.0	20	0	91.5	80 - 119				
1,2-Dichloroethane	17.19	1.0	20	0	86.0	73 - 128				
1,2-Dichloropropane	18.05	1.0	20	0	90.3	78 - 122				
1,3,5-Trimethylbenzene	19.56	1.0	20	0	97.8	75 - 124				
1,3-Dichlorobenzene	18.47	1.0	20	0	92.3	80 - 119				
1,3-Dichloropropane	18.09	1.0	20	0	90.5	80 - 119				
1,4-Dichlorobenzene	18.38	1.0	20	0	91.9	79 - 118				
2,2-Dichloropropane	16.04	1.0	20	0	80.2	60 - 139				
2-Butanone	28.97	2.0	40	0	72.4	56 - 143				
2-Chlorotoluene	18.74	1.0	20	0	93.7	79 - 122				
2-Hexanone	38.07	2.0	40	0	95.2	57 - 139				
4-Chlorotoluene	19.23	1.0	20	0	96.1	78 - 122				
4-Isopropyltoluene	19.64	1.0	20	0	98.2	77 - 127				
4-Methyl-2-pentanone	39.43	2.0	40	0	98.6	67 - 130				
Acetone	570.3	2.0	40	0	1430	39 - 160				SE
Benzene	18.1	1.0	20	0	90.5	79 - 120				
Bromobenzene	18.66	1.0	20	0	93.3	80 - 120				
Bromochloromethane	16.5	1.0	20	0	82.5	78 - 123				
Bromodichloromethane	18.38	1.0	20	1.246	85.7	79 - 125				
Bromoform	17.14	1.0	20	0	85.7	66 - 130				
Bromomethane	16.69	1.0	20	0	83.5	53 - 141				

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22100193-03MS** Units: **ug/L** Analysis Date: **05-Oct-2022 21:05**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903907** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41.31	2.0	40	7.361	84.9	64 - 133				
Carbon tetrachloride	18.26	1.0	20	0	91.3	72 - 136				
Chlorobenzene	18.71	1.0	20	0	93.6	82 - 118				
Chloroethane	16.88	1.0	20	0	84.4	60 - 138				
Chloroform	62.65	1.0	20	44.9	88.8	79 - 124				
Chloromethane	15.19	1.0	20	0	76.0	50 - 139				
cis-1,2-Dichloroethene	16.47	1.0	20	0	82.3	78 - 123				
cis-1,3-Dichloropropene	17.11	1.0	20	0	85.5	75 - 124				
Dibromochloromethane	18.29	1.0	20	0	91.4	74 - 126				
Dibromomethane	17.6	1.0	20	0	88.0	79 - 123				
Dichlorodifluoromethane	14.19	1.0	20	0	71.0	32 - 152				
Ethylbenzene	19.37	1.0	20	0	96.8	79 - 121				
Hexachlorobutadiene	17.67	1.0	20	0	88.4	66 - 134				
Isopropylbenzene	18.98	1.0	20	0	94.9	72 - 131				
m,p-Xylene	38.21	2.0	40	0	95.5	80 - 121				
Methylene chloride	16.75	2.0	20	0	83.8	74 - 124				
Naphthalene	14.37	1.0	20	0	71.9	61 - 128				
n-Butylbenzene	19.9	1.0	20	0	99.5	75 - 128				
n-Propylbenzene	19.83	1.0	20	0	99.1	76 - 126				
o-Xylene	19.26	1.0	20	0	96.3	78 - 122				
sec-Butylbenzene	19.71	1.0	20	0	98.5	77 - 126				
Styrene	18.65	1.0	20	0	93.2	78 - 123				
tert-Butylbenzene	19.63	1.0	20	0	98.2	78 - 124				
Tetrachloroethene	19.55	1.0	20	0	97.8	74 - 129				
Toluene	18.75	1.0	20	0	93.8	80 - 121				
trans-1,2-Dichloroethene	17.28	1.0	20	0	86.4	75 - 124				
trans-1,3-Dichloropropene	17.02	1.0	20	0	85.1	73 - 127				
Trichloroethene	85.63	1.0	20	69.97	78.3	79 - 123				S
Trichlorofluoromethane	17.85	1.0	20	0	89.3	65 - 141				
Vinyl chloride	18.21	1.0	20	0	91.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*47.51*	*1.0*	*50*	*0*	*95.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.56*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*48.01*	*1.0*	*50*	*0*	*96.0*	*80 - 119*				
Surr: Toluene-d8	*55.12*	*1.0*	*50*	*0*	*110*	*89 - 112*				

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22100193-03MSD** Units: **ug/L** Analysis Date: **05-Oct-2022 21:26**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903908** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	17.48	1.0	20	0	87.4	78 - 124	17.84	2.01	20	
1,1,1-Trichloroethane	16.3	1.0	20	0	81.5	74 - 131	17.56	7.46	20	
1,1,2,2-Tetrachloroethane	18.19	1.0	20	0	90.9	71 - 121	18.02	0.904	20	
1,1,2-Trichloroethane	18.15	1.0	20	0	90.7	80 - 119	18.4	1.39	20	
1,1-Dichloroethane	15.93	1.0	20	0	79.7	77 - 125	16.95	6.2	20	
1,1-Dichloroethene	16.3	1.0	20	0	81.5	71 - 131	17.35	6.25	20	
1,1-Dichloropropene	17.07	1.0	20	0	85.3	78 - 125	18.32	7.06	20	
1,2,3-Trichlorobenzene	16.77	1.0	20	0	83.9	69 - 129	14.8	12.5	20	
1,2,3-Trichloropropane	18.15	1.0	20	0	90.7	73 - 122	19.86	9	20	
1,2,4-Trichlorobenzene	16.88	1.0	20	0	84.4	69 - 130	15.99	5.37	20	
1,2,4-Trimethylbenzene	18.4	1.0	20	0	92.0	76 - 124	19.16	4.08	20	
1,2-Dibromo-3-chloropropane	16.56	1.0	20	0	82.8	62 - 128	15.78	4.79	20	
1,2-Dibromoethane	17.85	1.0	20	0	89.3	77 - 121	18.16	1.69	20	
1,2-Dichlorobenzene	17.37	1.0	20	0	86.9	80 - 119	18.3	5.22	20	
1,2-Dichloroethane	16.75	1.0	20	0	83.8	73 - 128	17.19	2.6	20	
1,2-Dichloropropane	16.82	1.0	20	0	84.1	78 - 122	18.05	7.1	20	
1,3,5-Trimethylbenzene	18.32	1.0	20	0	91.6	75 - 124	19.56	6.52	20	
1,3-Dichlorobenzene	18.2	1.0	20	0	91.0	80 - 119	18.47	1.48	20	
1,3-Dichloropropane	17.69	1.0	20	0	88.4	80 - 119	18.09	2.26	20	
1,4-Dichlorobenzene	17.68	1.0	20	0	88.4	79 - 118	18.38	3.89	20	
2,2-Dichloropropane	14.88	1.0	20	0	74.4	60 - 139	16.04	7.54	20	
2-Butanone	27.79	2.0	40	0	69.5	56 - 143	28.97	4.14	20	
2-Chlorotoluene	17.66	1.0	20	0	88.3	79 - 122	18.74	5.94	20	
2-Hexanone	36.66	2.0	40	0	91.7	57 - 139	38.07	3.77	20	
4-Chlorotoluene	18.22	1.0	20	0	91.1	78 - 122	19.23	5.35	20	
4-Isopropyltoluene	18.49	1.0	20	0	92.5	77 - 127	19.64	6.04	20	
4-Methyl-2-pentanone	38.29	2.0	40	0	95.7	67 - 130	39.43	2.92	20	
Acetone	144.5	2.0	40	0	361	39 - 160	570.3	119	20	SR
Benzene	17.2	1.0	20	0	86.0	79 - 120	18.1	5.1	20	
Bromobenzene	17.87	1.0	20	0	89.4	80 - 120	18.66	4.29	20	
Bromochloromethane	16.03	1.0	20	0	80.1	78 - 123	16.5	2.89	20	
Bromodichloromethane	17.74	1.0	20	1.246	82.5	79 - 125	18.38	3.57	20	
Bromoform	17.33	1.0	20	0	86.6	66 - 130	17.14	1.08	20	
Bromomethane	14.57	1.0	20	0	72.8	53 - 141	16.69	13.6	20	

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418731 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22100193-03MSD** Units: **ug/L** Analysis Date: **05-Oct-2022 21:26**
Client ID: Run ID: **VOA6_418731** SeqNo: **6903908** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.38	2.0	40	7.361	77.5	64 - 133	41.31	7.37	20	
Carbon tetrachloride	17.25	1.0	20	0	86.2	72 - 136	18.26	5.69	20	
Chlorobenzene	17.88	1.0	20	0	89.4	82 - 118	18.71	4.55	20	
Chloroethane	16.85	1.0	20	0	84.2	60 - 138	16.88	0.186	20	
Chloroform	59.89	1.0	20	44.9	75.0	79 - 124	62.65	4.5	20	S
Chloromethane	13.99	1.0	20	0	69.9	50 - 139	15.19	8.26	20	
cis-1,2-Dichloroethene	15.9	1.0	20	0	79.5	78 - 123	16.47	3.51	20	
cis-1,3-Dichloropropene	16.54	1.0	20	0	82.7	75 - 124	17.11	3.37	20	
Dibromochloromethane	17.64	1.0	20	0	88.2	74 - 126	18.29	3.58	20	
Dibromomethane	17.01	1.0	20	0	85.0	79 - 123	17.6	3.45	20	
Dichlorodifluoromethane	13.4	1.0	20	0	67.0	32 - 152	14.19	5.73	20	
Ethylbenzene	18.4	1.0	20	0	92.0	79 - 121	19.37	5.09	20	
Hexachlorobutadiene	17.18	1.0	20	0	85.9	66 - 134	17.67	2.84	20	
Isopropylbenzene	18.42	1.0	20	0	92.1	72 - 131	18.98	2.99	20	
m,p-Xylene	36.87	2.0	40	0	92.2	80 - 121	38.21	3.58	20	
Methylene chloride	16.15	2.0	20	0	80.8	74 - 124	16.75	3.66	20	
Naphthalene	16.57	1.0	20	0	82.8	61 - 128	14.37	14.2	20	
n-Butylbenzene	18.78	1.0	20	0	93.9	75 - 128	19.9	5.77	20	
n-Propylbenzene	18.69	1.0	20	0	93.4	76 - 126	19.83	5.94	20	
o-Xylene	18.33	1.0	20	0	91.6	78 - 122	19.26	4.95	20	
sec-Butylbenzene	18.52	1.0	20	0	92.6	77 - 126	19.71	6.21	20	
Styrene	18.19	1.0	20	0	91.0	78 - 123	18.65	2.45	20	
tert-Butylbenzene	18.4	1.0	20	0	92.0	78 - 124	19.63	6.47	20	
Tetrachloroethene	18.61	1.0	20	0	93.0	74 - 129	19.55	4.95	20	
Toluene	17.83	1.0	20	0	89.2	80 - 121	18.75	5.04	20	
trans-1,2-Dichloroethene	16.25	1.0	20	0	81.3	75 - 124	17.28	6.16	20	
trans-1,3-Dichloropropene	16.42	1.0	20	0	82.1	73 - 127	17.02	3.56	20	
Trichloroethene	80.11	1.0	20	69.97	50.7	79 - 123	85.63	6.66	20	S
Trichlorofluoromethane	17.01	1.0	20	0	85.0	65 - 141	17.85	4.85	20	
Vinyl chloride	15.74	1.0	20	0	78.7	58 - 137	18.21	14.5	20	
Surr: 1,2-Dichloroethane-d4	*47.19*	*1.0*	*50*	*0*	*94.4*	*81 - 118*	*47.51*	*0.67*	*20*	
Surr: 4-Bromofluorobenzene	*51.61*	*1.0*	*50*	*0*	*103*	*85 - 114*	*51.56*	*0.105*	*20*	
Surr: Dibromofluoromethane	*47.88*	*1.0*	*50*	*0*	*95.8*	*80 - 119*	*48.01*	*0.272*	*20*	
Surr: Toluene-d8	*54.6*	*1.0*	*50*	*0*	*109*	*89 - 112*	*55.12*	*0.956*	*20*	

ALS Houston, US Date: 06-Oct-22

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder:	HS22091367

QC BATCH REPORT

Batch ID:	**R418731 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS22091367-01 HS22091367-02

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: HS22091367

QC BATCH REPORT

Batch ID: R418379 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **30-Sep-2022 10:25**
Client ID: Run ID: **ICS-Integrion_418379** SeqNo: **6896227** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **30-Sep-2022 10:30**
Client ID: Run ID: **ICS-Integrion_418379** SeqNo: **6896228** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.82	0.500	20	0	104	80 - 120				
Sulfate	20.68	0.500	20	0	103	80 - 120				

MS Sample ID: **HS22091119-01MS** Units: **mg/L** Analysis Date: **30-Sep-2022 10:41**
Client ID: Run ID: **ICS-Integrion_418379** SeqNo: **6896230** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	290.2	0.500	10	286.5	36.3	80 - 120				SEO
Sulfate	29.58	0.500	10	19.56	100	80 - 120				

MSD Sample ID: **HS22091119-01MSD** Units: **mg/L** Analysis Date: **30-Sep-2022 10:46**
Client ID: Run ID: **ICS-Integrion_418379** SeqNo: **6896231** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	291.3	0.500	10	286.5	47.3	80 - 120	290.2	0.378	20	SEO
Sulfate	29.67	0.500	10	19.56	101	80 - 120	29.58	0.317	20	

The following samples were analyzed in this batch: HS22091367-01

ALS Houston, US Date: 06-Oct-22

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Bi-Weekly Samples
WorkOrder: **HS22091367**

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: 06-Oct-22

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 06-Oct-22

Sample Receipt Checklist

Work Order ID: HS22091367 **Date/Time Received:** 28-Sep-2022 09:25

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By: /S/ Paresh M. Giga (eSignature) 28-Sep-2022 13:27 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 04-Oct-2022 08:18 (Date/Time)

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

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:Client
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/2.2C U/C	IR31	
Cooler(s)/Kit(s):	46962		
Date/Time sample(s) sent to storage:	9/28/22 13:35		
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:

01133580

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: Dane Wacasey

Page 1 of 1

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O Number

HS22091367

Bhate Environmental Associates, Inc.

Longhorn GW Treatment Plant Bi-Weekly Samples

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_092722	Water	09/27/22 / 13:00		3	3		HCL	
LH18/24-SP650_092722	Water	09/27/22 / 13:00		1		1	NONE	
Trip Blank	Water	09/27/22		2	2		HCL	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	09/27/22	13:30	[illegible]	9/28/22	0825						

9For Lab Use Only

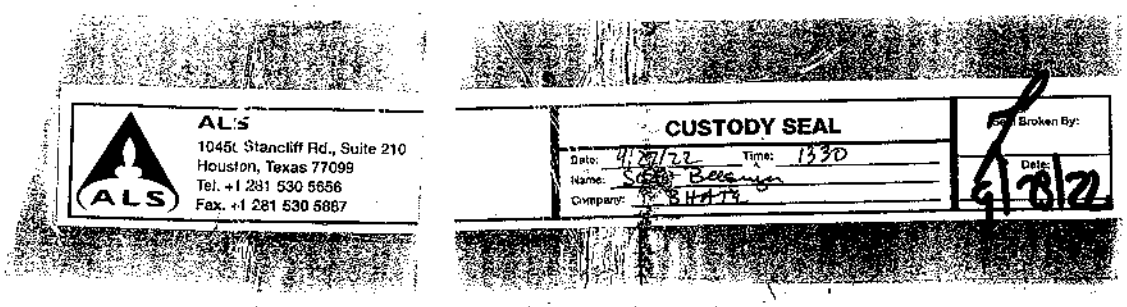
Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

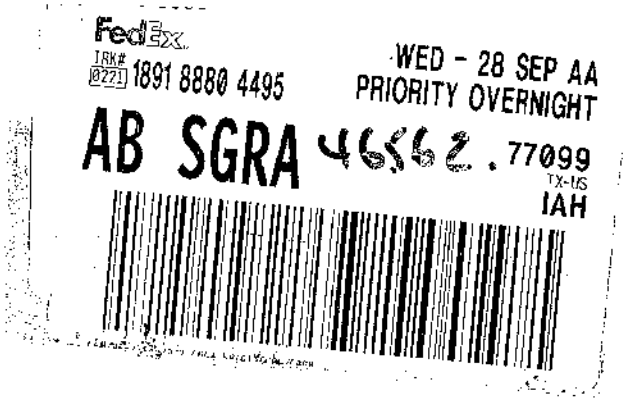
Remarks

46962 2.4C

1231 CR2-0.2

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


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5667
CUSTODY SEAL
Date: 9/27/22 Time: 1330
Name: Scott Beeman
Company: SHELL
Seal Broken By:
Date: 9/28/22


FedEx
TRK# 0271 1891 8880 4495
WED - 28 SEP AA
PRIORITY OVERNIGHT
AB SGRA 46562 .77099
TX-US
IAH

HS22080499 LHAAPSite 18 24 Cover Page

ALS WO# HS22080499

ALS Environmental
ALS Group USA, Corp
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Form 5 - Tune

Form 6 - ICAL

Form 6I - ICV

Form 7 - CCV

Form 8 - ISTD

Run Log

Raw Data VOA6 413360

Raw Data VOA6 414932

HS22080499-MSSEMI-SW8270SIM

Form 1 - Sample Results

Form 2 - Surrogates

Form 3B - LCS/LCSD

Form 4 - MB Assoc

Form 5 - TUNE

Form 6 - ICAL

Form 6I - ICV

Form 7 - CCV

Form 8- ISTD

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Raw Data SV-6 415764

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Form 2 - ICPMS07_415638 CCV

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Houston, TX 77099
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alsglobal.com

right solutions.
right partner.

WorkOrder: HS22080499

LHAAP/Site 18 /24

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

19-Aug-2022

HS22080499 LHAAP 18 24 Final

ALS WO# HS22080499

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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September 02, 2022

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22080499**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 9 sample(s) on Aug 10, 2022 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
Dane J. Wacasey

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS22080499

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22080499-01	MW5_080922	Water		09-Aug-2022 07:05	10-Aug-2022 09:45	☐
HS22080499-02	18CPTMW08DW_080922	Water		09-Aug-2022 07:50	10-Aug-2022 09:45	☐
HS22080499-03	18CPTMW08SW_080922	Water		09-Aug-2022 08:35	10-Aug-2022 09:45	☐
HS22080499-04	AWD1_080922	Water		09-Aug-2022 09:20	10-Aug-2022 09:45	☐
HS22080499-05	MW19_080922	Water		09-Aug-2022 10:05	10-Aug-2022 09:45	☐
HS22080499-06	MW10_080922	Water		09-Aug-2022 10:50	10-Aug-2022 09:45	☐
HS22080499-07	18WW10_080922	Water		09-Aug-2022 11:35	10-Aug-2022 09:45	☐
HS22080499-08	MW17_080922	Water		09-Aug-2022 12:25	10-Aug-2022 09:45	☐
HS22080499-09	Trip Blank	Water	cg-061422-304	09-Aug-2022 00:00	10-Aug-2022 09:45	☐

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS22080499

Work Order Comments

- The analysis for Mercury Method 7470 was subcontracted to ALS Environmental in Kelso WA. Final report attached
- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 182382

Sample ID: MW5_080922 (HS22080499-01)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R414932

Sample ID: HS22080522-05MSD

- MSD was performed on unrelated sample

Metals by Method SW6020A

Batch ID: 182618

Sample ID: HS22080472-01MS

- MS and MSD are for an unrelated sample

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW5_080922
Collection Date: 09-Aug-2022 07:05

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,1-Dichloroethane	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:26
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 16:26
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 16:26
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 16:26
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 16:26
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 16:26
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW5_080922
Collection Date: 09-Aug-2022 07:05

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
cis-1,2-Dichloroethene	**11**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:26
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 16:26
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 16:26
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:26
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:26
Trichloroethene	**41**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:26
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:26
Vinyl chloride	**4.0**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:26
Surr: 1,2-Dichloroethane-d4	*96.7*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 16:26*
Surr: 4-Bromofluorobenzene	*96.3*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 16:26*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 16:26*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 16:26*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**2.1**		**0.10**	**0.10**	**0.10**	**ug/L**	10	23-Aug-2022 18:45
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*10*	*23-Aug-2022 18:45*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*10*	*23-Aug-2022 18:45*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*10*	*23-Aug-2022 18:45*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW08DW_080922
Collection Date: 09-Aug-2022 07:50

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**0.42**		**0.010**	**0.010**	**0.010**	**ug/L**	1	23-Aug-2022 14:33
Surr: 2-Fluorobiphenyl	*49.8*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 14:33*
Surr: 4-Terphenyl-d14	*62.1*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 14:33*
Surr: Nitrobenzene-d5	*99.4*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 14:33*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS22080499
Sample ID: 18CPTMW08SW_080922 Lab ID:HS22080499-03
Collection Date: 09-Aug-2022 08:35 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,1-Dichloroethane	**3.3**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:47
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 16:47
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 16:47
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 16:47
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 16:47
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 16:47
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW08SW_080922
Collection Date: 09-Aug-2022 08:35

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
cis-1,2-Dichloroethene	**9.0**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:47
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 16:47
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 16:47
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 16:47
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 16:47
Trichloroethene	**35**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:47
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 16:47
Vinyl chloride	**0.57**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 16:47
Surr: 1,2-Dichloroethane-d4	*97.0*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 16:47*
Surr: 4-Bromofluorobenzene	*94.6*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 16:47*
Surr: Dibromofluoromethane	*95.7*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 16:47*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 16:47*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**0.89**		**0.10**	**0.10**	**0.10**	**ug/L**	10	24-Aug-2022 13:43
Surr: 2-Fluorobiphenyl	*62.2*			**0**	*40-140*	*%REC*	*10*	*24-Aug-2022 13:43*
Surr: 4-Terphenyl-d14	*57.1*			**0**	*40-140*	*%REC*	*10*	*24-Aug-2022 13:43*
Surr: Nitrobenzene-d5	*69.0*			**0**	*40-140*	*%REC*	*10*	*24-Aug-2022 13:43*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD1_080922
Collection Date: 09-Aug-2022 09:20

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**6.9**		**0.20**	**0.20**	**0.20**	**ug/L**	20	24-Aug-2022 14:01
Surr: 2-Fluorobiphenyl	*102*			**0**	*40-140*	*%REC*	*20*	*24-Aug-2022 14:01*
Surr: 4-Terphenyl-d14	*72.1*			**0**	*40-140*	*%REC*	*20*	*24-Aug-2022 14:01*
Surr: Nitrobenzene-d5	*133*			**0**	*40-140*	*%REC*	*20*	*24-Aug-2022 14:01*

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_080922
Collection Date: 09-Aug-2022 10:05

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,2-Dichloroethane	**0.68**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 17:08
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:08
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 17:08
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 17:08
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:08
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 17:08
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_080922
Collection Date: 09-Aug-2022 10:05

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
cis-1,2-Dichloroethene	**7.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 17:08
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:08
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:08
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:08
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Trichloroethene	**5.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 17:08
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:08
Surr: 1,2-Dichloroethane-d4	*94.4*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 17:08*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 17:08*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 17:08*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 17:08*

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_080922
Collection Date: 09-Aug-2022 10:05

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 19-Aug-2022		Analyst: YP
Aluminum	**0.489**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Aug-2022 13:24
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	23-Aug-2022 13:24
Arsenic	**0.00254**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Barium	**0.244**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Aug-2022 13:24
Cadmium	**0.000474**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Aug-2022 13:24
Calcium	**153**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Aug-2022 13:24
Chromium	**0.0971**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Cobalt	**0.0136**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Copper	**0.00527**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Iron	**89.9**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Aug-2022 13:24
Lead	**0.000645**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Magnesium	**80.8**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Aug-2022 13:24
Manganese	**3.66**		**0.00350**	**0.0125**	**0.0250**	**mg/L**	5	22-Aug-2022 20:56
Nickel	**0.0896**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Potassium	**4.97**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Aug-2022 13:24
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Aug-2022 13:24
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Aug-2022 13:24
Sodium	**1,210**		**0.700**	**2.50**	**10.0**	**mg/L**	50	23-Aug-2022 13:16
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Aug-2022 13:24
Vanadium	**0.00135**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
Zinc	**0.0114**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Aug-2022 13:24
SUBCONTRACT ANALYSIS - MERCURY LOW		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	02-Sep-2022 13:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW10_080922
Collection Date: 09-Aug-2022 10:50

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:29
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 17:29
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 17:29
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:29
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 17:29
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW10_080922
Collection Date: 09-Aug-2022 10:50

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:29
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:29
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:29
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Trichloroethene	**0.93**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Aug-2022 17:29
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:29
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:29
Surr: 1,2-Dichloroethane-d4	*95.1*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 17:29*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 17:29*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 17:29*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 17:29*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**0.14**		**0.010**	**0.010**	**0.010**	**ug/L**	1	23-Aug-2022 15:27
Surr: 2-Fluorobiphenyl	*47.6*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:27*
Surr: 4-Terphenyl-d14	*53.1*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:27*
Surr: Nitrobenzene-d5	*106*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:27*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW10_080922
Collection Date: 09-Aug-2022 11:35

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:50
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 17:50
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 17:50
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:50
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 17:50
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW10_080922
Collection Date: 09-Aug-2022 11:35

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 17:50
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 17:50
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 17:50
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 17:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 17:50
Surr: 1,2-Dichloroethane-d4	*96.1*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 17:50*
Surr: 4-Bromofluorobenzene	*95.3*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 17:50*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 17:50*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 17:50*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**0.34**		**0.010**	**0.010**	**0.010**	**ug/L**	1	23-Aug-2022 15:45
Surr: 2-Fluorobiphenyl	*42.2*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:45*
Surr: 4-Terphenyl-d14	*58.8*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:45*
Surr: Nitrobenzene-d5	*82.5*			**0**	*40-140*	*%REC*	*1*	*23-Aug-2022 15:45*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW17_080922
Collection Date: 09-Aug-2022 12:25

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 12-Aug-2022		Analyst: MBG
1,4-Dioxane	**0.81**		**0.050**	**0.050**	**0.050**	**ug/L**	5	24-Aug-2022 14:19
Surr: 2-Fluorobiphenyl	*73.2*			**0**	*40-140*	*%REC*	*5*	*24-Aug-2022 14:19*
Surr: 4-Terphenyl-d14	*67.3*			**0**	*40-140*	*%REC*	*5*	*24-Aug-2022 14:19*
Surr: Nitrobenzene-d5	*104*			**0**	*40-140*	*%REC*	*5*	*24-Aug-2022 14:19*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	24-Aug-2022 16:59

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Aug-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 12:55
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
2-Hexanone	2.0	U	1.0	2.0	2.0	ug/L	1	11-Aug-2022 12:55
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	ug/L	1	11-Aug-2022 12:55
Acetone	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 12:55
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Carbon disulfide	2.0	U	0.60	2.0	2.0	ug/L	1	11-Aug-2022 12:55
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55

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

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Aug-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22080499
Lab ID:HS22080499-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
cis-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Aug-2022 12:55
Methylene chloride	2.0	U	0.40	2.0	2.0	ug/L	1	11-Aug-2022 12:55
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	11-Aug-2022 12:55
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	11-Aug-2022 12:55
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	11-Aug-2022 12:55
Surr: 1,2-Dichloroethane-d4	*93.9*			**0**	*81-118*	*%REC*	*1*	*11-Aug-2022 12:55*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*1*	*11-Aug-2022 12:55*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*11-Aug-2022 12:55*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*11-Aug-2022 12:55*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

Batch ID: 182382 **Start Date:** 12 Aug 2022 10:30 **End Date:** 12 Aug 2022 14:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22080499-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-02	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-04	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-06	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-07	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22080499-08	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 182618 **Start Date:** 19 Aug 2022 09:00 **End Date:** 19 Aug 2022 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22080499-05		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 182382 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Water	
HS22080499-01	MW5_080922	09 Aug 2022 07:05		12 Aug 2022 13:02	23 Aug 2022 18:45	10
HS22080499-02	18CPTMW08DW_080922	09 Aug 2022 07:50		12 Aug 2022 13:02	23 Aug 2022 14:33	1
HS22080499-03	18CPTMW08SW_080922	09 Aug 2022 08:35		12 Aug 2022 13:02	24 Aug 2022 13:43	10
HS22080499-04	AWD1_080922	09 Aug 2022 09:20		12 Aug 2022 13:02	24 Aug 2022 14:01	20
HS22080499-06	MW10_080922	09 Aug 2022 10:50		12 Aug 2022 13:02	23 Aug 2022 15:27	1
HS22080499-07	18WW10_080922	09 Aug 2022 11:35		12 Aug 2022 13:02	23 Aug 2022 15:45	1
HS22080499-08	MW17_080922	09 Aug 2022 12:25		12 Aug 2022 13:02	24 Aug 2022 14:19	5
Batch ID: 182618 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Water	
HS22080499-05	MW19_080922	09 Aug 2022 10:05		19 Aug 2022 09:00	23 Aug 2022 13:24	1
HS22080499-05	MW19_080922	09 Aug 2022 10:05		19 Aug 2022 09:00	23 Aug 2022 13:16	50
HS22080499-05	MW19_080922	09 Aug 2022 10:05		19 Aug 2022 09:00	22 Aug 2022 20:56	5
Batch ID: R414932 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22080499-01	MW5_080922	09 Aug 2022 07:05			11 Aug 2022 16:26	1
HS22080499-03	18CPTMW08SW_080922	09 Aug 2022 08:35			11 Aug 2022 16:47	1
HS22080499-05	MW19_080922	09 Aug 2022 10:05			11 Aug 2022 17:08	1
HS22080499-06	MW10_080922	09 Aug 2022 10:50			11 Aug 2022 17:29	1
HS22080499-07	18WW10_080922	09 Aug 2022 11:35			11 Aug 2022 17:50	1
HS22080499-09	Trip Blank	09 Aug 2022 00:00			11 Aug 2022 12:55	1
Batch ID: R415778 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS22080499-01	MW5_080922	09 Aug 2022 07:05			24 Aug 2022 16:59	1
HS22080499-02	18CPTMW08DW_080922	09 Aug 2022 07:50			24 Aug 2022 16:59	1
HS22080499-03	18CPTMW08SW_080922	09 Aug 2022 08:35			24 Aug 2022 16:59	1
HS22080499-05	MW19_080922	09 Aug 2022 10:05			24 Aug 2022 16:59	1
HS22080499-06	MW10_080922	09 Aug 2022 10:50			24 Aug 2022 16:59	1
HS22080499-07	18WW10_080922	09 Aug 2022 11:35			24 Aug 2022 16:59	1
HS22080499-08	MW17_080922	09 Aug 2022 12:25			24 Aug 2022 16:59	1
Batch ID: R416444 (0)	**Test Name :** SUBCONTRACT ANALYSIS - MERCURY LOW				**Matrix:** Water	
HS22080499-05	MW19_080922	09 Aug 2022 10:05			02 Sep 2022 13:50	1

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:36**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813234** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.007024	0.0100								J
Antimony	0.00125	0.00500								U
Arsenic	0.00125	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.00125	0.00500								U
Cobalt	0.000500	0.00500								U
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00125	0.00500								U
Magnesium	0.01408	0.200								J
Manganese	0.00250	0.00500								U
Nickel	0.00125	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00125	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-182618** Units: **mg/L** Analysis Date: **22-Aug-2022 20:38**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813235** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1096	0.0100	0.1	0	110	84 - 117				
Antimony	0.05324	0.00500	0.05	0	106	85 - 117				
Arsenic	0.05576	0.00500	0.05	0	112	84 - 116				
Barium	0.05404	0.00500	0.05	0	108	86 - 114				
Beryllium	0.05858	0.00200	0.05	0	117	83 - 121				
Cadmium	0.05591	0.00200	0.05	0	112	87 - 115				
Calcium	5.107	0.500	5	0	102	87 - 118				
Chromium	0.05384	0.00500	0.05	0	108	85 - 116				
Cobalt	0.05553	0.00500	0.05	0	111	86 - 115				
Copper	0.0552	0.00500	0.05	0	110	85 - 118				
Iron	5.326	0.200	5	0	107	87 - 118				
Lead	0.04892	0.00500	0.05	0	97.8	88 - 115				
Magnesium	5.437	0.200	5	0	109	83 - 118				
Manganese	0.0548	0.00500	0.05	0	110	87 - 115				
Nickel	0.05438	0.00500	0.05	0	109	85 - 117				
Potassium	5.402	0.200	5	0	108	87 - 115				
Selenium	0.05753	0.00500	0.05	0	115	80 - 120				
Silver	0.04447	0.00500	0.05	0	88.9	85 - 116				
Sodium	5.232	0.200	5	0	105	85 - 117				
Thallium	0.05171	0.00200	0.05	0	103	82 - 116				
Vanadium	0.05402	0.00500	0.05	0	108	86 - 115				
Zinc	0.05668	0.00500	0.05	0	113	83 - 119				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS22080472-01MS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:08**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815411** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1188	0.0100	0.1	0.0141	105	84 - 117				
Antimony	0.05196	0.00500	0.05	0.000109	104	85 - 117				
Arsenic	0.05655	0.00500	0.05	0.00038	112	84 - 116				
Barium	0.452	0.00500	0.05	0.3987	107	86 - 114				O
Beryllium	0.05533	0.00200	0.05	-0.000003	111	83 - 121				
Cadmium	0.05396	0.00200	0.05	0.000007	108	87 - 115				
Calcium	22.56	0.500	5	18.19	87.3	87 - 118				
Chromium	0.05063	0.00500	0.05	0.000418	100	85 - 116				
Cobalt	0.05215	0.00500	0.05	0.000176	104	86 - 115				
Copper	0.04901	0.00500	0.05	0.000772	96.5	85 - 118				
Iron	5.222	0.200	5	0.09066	103	87 - 118				
Lead	0.05145	0.00500	0.05	0.000298	102	88 - 115				
Magnesium	22.07	0.200	5	18.09	79.6	83 - 118				S
Manganese	0.1245	0.00500	0.05	0.07429	100	87 - 115				
Nickel	0.05098	0.00500	0.05	0.000377	101	85 - 117				
Potassium	7.896	0.200	5	2.681	104	87 - 115				
Selenium	0.04953	0.00500	0.05	0.000217	98.6	80 - 120				
Silver	0.04119	0.00500	0.05	0.000012	82.4	85 - 116				S
Sodium	726.2	0.200	5	768.4	-845	85 - 117				SEO
Thallium	0.05106	0.00200	0.05	0	102	82 - 116				
Vanadium	0.05472	0.00500	0.05	0.000185	109	86 - 115				
Zinc	0.05799	0.00500	0.05	0.00497	106	83 - 119				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS22080472-01MSD** Units: **mg/L** Analysis Date: **23-Aug-2022 15:05**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815479** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1178	0.0100	0.1	0.0141	104	84 - 117	0.1188	0.847	20	
Antimony	0.05285	0.00500	0.05	0	106	85 - 117	0.05196	1.71	20	
Arsenic	0.05658	0.00500	0.05	0	113	84 - 116	0.05655	0.0636	20	
Barium	0.4467	0.00500	0.05	0.3987	96.0	86 - 114	0.452	1.19	20	O
Beryllium	0.0589	0.00200	0.05	0	118	83 - 121	0.05533	6.25	20	
Cadmium	0.05429	0.00200	0.05	0	109	87 - 115	0.05396	0.595	20	
Calcium	22.09	0.500	5	18.19	78.0	87 - 118	22.56	2.1	20	S
Chromium	0.05201	0.00500	0.05	0.000418	103	85 - 116	0.05063	2.68	20	
Cobalt	0.05389	0.00500	0.05	0.000176	107	86 - 115	0.05215	3.28	20	
Copper	0.05065	0.00500	0.05	0	101	85 - 118	0.04901	3.29	20	
Iron	5.322	0.200	5	0.09066	105	87 - 118	5.222	1.91	20	
Lead	0.05234	0.00500	0.05	0	105	88 - 115	0.05145	1.71	20	
Magnesium	22.59	0.200	5	18.09	90.0	83 - 118	22.07	2.33	20	
Manganese	0.1249	0.00500	0.05	0.07429	101	87 - 115	0.1245	0.328	20	
Nickel	0.0527	0.00500	0.05	0	105	85 - 117	0.05098	3.3	20	
Potassium	7.743	0.200	5	2.681	101	87 - 115	7.896	1.95	20	
Selenium	0.04688	0.00500	0.05	0	93.8	80 - 120	0.04953	5.5	20	
Silver	0.04077	0.00500	0.05	0	81.5	85 - 116	0.04119	1.02	20	S
Sodium	751.6	0.200	5	768.4	-337	85 - 117	726.2	3.44	20	SEO
Thallium	0.0518	0.00200	0.05	0	104	82 - 116	0.05106	1.43	20	
Vanadium	0.0555	0.00500	0.05	0	111	86 - 115	0.05472	1.42	20	
Zinc	0.05937	0.00500	0.05	0.00497	109	83 - 119	0.05799	2.35	20	

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22080472-01PDS** Units: **mg/L** Analysis Date: **23-Aug-2022 13:12**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815413** PrepDate: **19-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1162	0.0100	0.1	0.0141	102	80 - 120				
Antimony	0.09826	0.00500	0.1	0.000109	98.2	80 - 120				
Arsenic	0.1104	0.00500	0.1	0.00038	110	80 - 120				
Beryllium	0.1088	0.00200	0.1	-0.000003	109	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000007	106	80 - 120				
Calcium	27.52	0.500	10	18.19	93.3	80 - 120				
Chromium	0.09939	0.00500	0.1	0.000418	99.0	80 - 120				
Cobalt	0.1025	0.00500	0.1	0.000176	102	80 - 120				
Copper	0.09434	0.00500	0.1	0.000772	93.6	80 - 120				
Iron	10.1	0.200	10	0.09066	100	80 - 120				
Lead	0.1084	0.00500	0.1	0.000298	108	80 - 120				
Magnesium	26.68	0.200	10	18.09	86.0	80 - 120				
Manganese	0.1744	0.00500	0.1	0.07429	100	80 - 120				
Nickel	0.09886	0.00500	0.1	0.000377	98.5	80 - 120				
Potassium	13.02	0.200	10	2.681	103	80 - 120				
Selenium	0.1085	0.00500	0.1	0.000217	108	80 - 120				
Silver	0.1035	0.00500	0.1	0.000012	103	80 - 120				
Thallium	0.1099	0.00200	0.1	0	110	80 - 120				
Vanadium	0.107	0.00500	0.1	0.000185	107	80 - 120				
Zinc	0.1083	0.00500	0.1	0.00497	103	80 - 120				

PDS Sample ID: **HS22080472-01PDS** Units: **mg/L** Analysis Date: **22-Aug-2022 20:48**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813240** PrepDate: **19-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.899	0.0250	0.5	0.3548	109	80 - 120				
Sodium	811.5	1.00	50	765.6	91.9	80 - 120				O

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182618 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22080472-01SD** Units: **mg/L** Analysis Date: **23-Aug-2022 13:06**
Client ID: Run ID: **ICPMS07_415638** SeqNo: **6815410** PrepDate: **19-Aug-2022** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02655	0.0500					0.0141	0	10	J
Antimony	0.00625	0.0250					0.000109	0	10	U
Arsenic	0.00625	0.0250					0.00038	0	10	U
Beryllium	0.00250	0.0100					-0.000003	0	10	U
Cadmium	0.00250	0.0100					0.000007	0	10	U
Calcium	18.12	2.50					18.19	0.434	10	
Chromium	0.00625	0.0250					0.000418	0	10	U
Cobalt	0.00250	0.0250					0.000176	0	10	U
Copper	0.0125	0.0250					0.000772	0	10	U
Iron	0.0911	1.00					0.09066	0	10	J
Lead	0.00625	0.0250					0.000298	0	10	U
Magnesium	18.11	1.00					18.09	0.111	10	
Manganese	0.0752	0.0250					0.07429	1.22	10	
Nickel	0.00625	0.0250					0.000377	0	10	U
Potassium	2.409	1.00					2.681	10.1	10	R
Selenium	0.0125	0.0250					0.000217	0	10	U
Silver	0.00250	0.0250					0.000012	0	10	U
Thallium	0.00250	0.0100					0	0	10	U
Vanadium	0.00625	0.0250					0.000185	0	10	U
Zinc	0.0125	0.0250					0.00497	0	10	U

SD Sample ID: **HS22080472-01SD** Units: **mg/L** Analysis Date: **22-Aug-2022 20:42**
Client ID: Run ID: **ICPMS07_415559** SeqNo: **6813237** PrepDate: **19-Aug-2022** DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	0.3432	0.125					0.3548	3.27	10	
Sodium	762.8	5.00					765.6	0.364	10	

The following samples were analyzed in this batch: HS22080499-05

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: 182382 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:16**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817428** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.0349*	*0*	*0.08*	*0*	*43.6*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.05239*	*0*	*0.08*	*0*	*65.5*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07908*	*0*	*0.08*	*0*	*98.9*	*40 - 140*				

LCS Sample ID: **LCS-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:34**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817429** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1057	0.010	0.08	0	132	40 - 140				
Surr: 2-Fluorobiphenyl	*0.03441*	*0*	*0.08*	*0*	*43.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.05302*	*0*	*0.08*	*0*	*66.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07408*	*0*	*0.08*	*0*	*92.6*	*40 - 140*				

LCSD Sample ID: **LCSD-182382** Units: **ug/L** Analysis Date: **23-Aug-2022 11:52**
Client ID: Run ID: **SV-6_415764** SeqNo: **6817430** PrepDate: **12-Aug-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1071	0.010	0.08	0	134	40 - 140	0.1057	1.31	20	
Surr: 2-Fluorobiphenyl	*0.03726*	*0*	*0.08*	*0*	*46.6*	*40 - 140*	*0.03441*	*7.97*	*20*	
Surr: 4-Terphenyl-d14	*0.05532*	*0*	*0.08*	*0*	*69.2*	*40 - 140*	*0.05302*	*4.26*	*20*	
Surr: Nitrobenzene-d5	*0.07327*	*0*	*0.08*	*0*	*91.6*	*40 - 140*	*0.07408*	*1.1*	*20*	

The following samples were analyzed in this batch:

HS22080499-01	HS22080499-02	HS22080499-03	HS22080499-04
HS22080499-06	HS22080499-07	HS22080499-08	

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220811** Units: **ug/L** Analysis Date: **11-Aug-2022 12:34**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799017** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	2.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	2.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-220811** Units: **ug/L** Analysis Date: **11-Aug-2022 12:34**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799017** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	2.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*47.5*	*1.0*	*50*	*0*	*95.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.89*	*1.0*	*50*	*0*	*97.8*	*85 - 114*				
Surr: Dibromofluoromethane	*47.55*	*1.0*	*50*	*0*	*95.1*	*80 - 119*				
Surr: Toluene-d8	*53.99*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220811** Units: **ug/L** Analysis Date: **11-Aug-2022 11:52**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799016** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.58	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	21.31	1.0	20	0	107	74 - 131				
1,1,2,2-Tetrachloroethane	20.08	1.0	20	0	100	71 - 121				
1,1,2-Trichloroethane	19.97	1.0	20	0	99.8	80 - 119				
1,1-Dichloroethane	20.47	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	19.49	1.0	20	0	97.4	71 - 131				
1,1-Dichloropropene	21.3	1.0	20	0	107	78 - 125				
1,2,3-Trichlorobenzene	21.2	1.0	20	0	106	69 - 129				
1,2,3-Trichloropropane	20.03	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	22.11	1.0	20	0	111	69 - 130				
1,2,4-Trimethylbenzene	21.72	1.0	20	0	109	76 - 124				
1,2-Dibromo-3-chloropropane	21.31	1.0	20	0	107	62 - 128				
1,2-Dibromoethane	20.37	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.8	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	20.98	1.0	20	0	105	73 - 128				
1,2-Dichloropropane	20.51	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	21.77	1.0	20	0	109	75 - 124				
1,3-Dichlorobenzene	20.93	1.0	20	0	105	80 - 119				
1,3-Dichloropropane	20.46	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.94	1.0	20	0	105	79 - 118				
2,2-Dichloropropane	22.26	1.0	20	0	111	60 - 139				
2-Butanone	36.34	2.0	40	0	90.8	56 - 143				
2-Chlorotoluene	20.95	1.0	20	0	105	79 - 122				
2-Hexanone	39.82	2.0	40	0	99.6	57 - 139				
4-Chlorotoluene	21.47	1.0	20	0	107	78 - 122				
4-Isopropyltoluene	22.44	1.0	20	0	112	77 - 127				
4-Methyl-2-pentanone	42.03	2.0	40	0	105	67 - 130				
Acetone	38.3	2.0	40	0	95.7	39 - 160				
Benzene	20.56	1.0	20	0	103	79 - 120				
Bromobenzene	21.44	1.0	20	0	107	80 - 120				
Bromochloromethane	20.05	1.0	20	0	100	78 - 123				
Bromodichloromethane	21.05	1.0	20	0	105	79 - 125				
Bromoform	19.03	1.0	20	0	95.2	66 - 130				
Bromomethane	21.11	1.0	20	0	106	53 - 141				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-220811** Units: **ug/L** Analysis Date: **11-Aug-2022 11:52**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799016** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.84	2.0	40	0	102	64 - 133				
Carbon tetrachloride	20.46	1.0	20	0	102	72 - 136				
Chlorobenzene	20.93	1.0	20	0	105	82 - 118				
Chloroethane	20.4	1.0	20	0	102	60 - 138				
Chloroform	20.95	1.0	20	0	105	79 - 124				
Chloromethane	22.49	1.0	20	0	112	50 - 139				
cis-1,2-Dichloroethene	21.76	1.0	20	0	109	78 - 123				
cis-1,3-Dichloropropene	21.05	1.0	20	0	105	75 - 124				
Dibromochloromethane	20.28	1.0	20	0	101	74 - 126				
Dibromomethane	20.6	1.0	20	0	103	79 - 123				
Dichlorodifluoromethane	22.75	1.0	20	0	114	32 - 152				
Ethylbenzene	21.33	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	21.49	1.0	20	0	107	66 - 134				
Isopropylbenzene	21.27	1.0	20	0	106	72 - 131				
m,p-Xylene	42.51	2.0	40	0	106	80 - 121				
Methylene chloride	21.82	2.0	20	0	109	74 - 124				
Naphthalene	21.26	1.0	20	0	106	61 - 128				
n-Butylbenzene	23.03	1.0	20	0	115	75 - 128				
n-Propylbenzene	22.39	1.0	20	0	112	76 - 126				
o-Xylene	20.86	1.0	20	0	104	78 - 122				
sec-Butylbenzene	22.25	1.0	20	0	111	77 - 126				
Styrene	20.83	1.0	20	0	104	78 - 123				
tert-Butylbenzene	21.71	1.0	20	0	109	78 - 124				
Tetrachloroethene	20.49	1.0	20	0	102	74 - 129				
Toluene	20.73	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	21.23	1.0	20	0	106	75 - 124				
trans-1,3-Dichloropropene	20.82	1.0	20	0	104	73 - 127				
Trichloroethene	20.76	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	20.38	1.0	20	0	102	65 - 141				
Vinyl chloride	19.58	1.0	20	0	97.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*54.09*	*1.0*	*50*	*0*	*108*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.04*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*54.58*	*1.0*	*50*	*0*	*109*	*80 - 119*				
Surr: Toluene-d8	*51.63*	*1.0*	*50*	*0*	*103*	*89 - 112*				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22080522-05MS** Units: **ug/L** Analysis Date: **11-Aug-2022 15:01**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799024** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1104	50	1000	0	110	78 - 124				
1,1,1-Trichloroethane	1105	50	1000	0	110	74 - 131				
1,1,2,2-Tetrachloroethane	1025	50	1000	0	103	71 - 121				
1,1,2-Trichloroethane	1044	50	1000	0	104	80 - 119				
1,1-Dichloroethane	1050	50	1000	0	105	77 - 125				
1,1-Dichloroethene	1044	50	1000	0	104	71 - 131				
1,1-Dichloropropene	1140	50	1000	0	114	78 - 125				
1,2,3-Trichlorobenzene	872.2	50	1000	0	87.2	69 - 129				
1,2,3-Trichloropropane	1037	50	1000	0	104	73 - 122				
1,2,4-Trichlorobenzene	993.3	50	1000	0	99.3	69 - 130				
1,2,4-Trimethylbenzene	1163	50	1000	0	116	76 - 124				
1,2-Dibromo-3-chloropropane	932.3	50	1000	0	93.2	62 - 128				
1,2-Dibromoethane	1058	50	1000	0	106	77 - 121				
1,2-Dichlorobenzene	1090	50	1000	0	109	80 - 119				
1,2-Dichloroethane	1121	50	1000	68.64	105	73 - 128				
1,2-Dichloropropane	1044	50	1000	0	104	78 - 122				
1,3,5-Trimethylbenzene	1185	50	1000	0	118	75 - 124				
1,3-Dichlorobenzene	1104	50	1000	0	110	80 - 119				
1,3-Dichloropropane	1066	50	1000	0	107	80 - 119				
1,4-Dichlorobenzene	1096	50	1000	0	110	79 - 118				
2,2-Dichloropropane	1108	50	1000	0	111	60 - 139				
2-Butanone	1671	100	2000	0	83.5	56 - 143				
2-Chlorotoluene	1127	50	1000	0	113	79 - 122				
2-Hexanone	1983	100	2000	0	99.2	57 - 139				
4-Chlorotoluene	1153	50	1000	0	115	78 - 122				
4-Isopropyltoluene	1220	50	1000	0	122	77 - 127				
4-Methyl-2-pentanone	2101	100	2000	0	105	67 - 130				
Acetone	1551	100	2000	0	77.5	39 - 160				
Benzene	1069	50	1000	0	107	79 - 120				
Bromobenzene	1102	50	1000	0	110	80 - 120				
Bromochloromethane	964.7	50	1000	0	96.5	78 - 123				
Bromodichloromethane	1046	50	1000	0	105	79 - 125				
Bromoform	1002	50	1000	0	100	66 - 130				
Bromomethane	1061	50	1000	0	106	53 - 141				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22080522-05MS** Units: **ug/L** Analysis Date: **11-Aug-2022 15:01**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799024** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	2195	100	2000	0	110	64 - 133				
Carbon tetrachloride	1113	50	1000	0	111	72 - 136				
Chlorobenzene	1131	50	1000	0	113	82 - 118				
Chloroethane	974.7	50	1000	0	97.5	60 - 138				
Chloroform	1048	50	1000	0	105	79 - 124				
Chloromethane	1121	50	1000	0	112	50 - 139				
cis-1,2-Dichloroethene	1118	50	1000	150.7	96.7	78 - 123				
cis-1,3-Dichloropropene	1048	50	1000	0	105	75 - 124				
Dibromochloromethane	1054	50	1000	0	105	74 - 126				
Dibromomethane	1014	50	1000	0	101	79 - 123				
Dichlorodifluoromethane	1009	50	1000	0	101	32 - 152				
Ethylbenzene	1152	50	1000	0	115	79 - 121				
Hexachlorobutadiene	1158	50	1000	0	116	66 - 134				
Isopropylbenzene	1192	50	1000	0	119	72 - 131				
m,p-Xylene	2337	100	2000	0	117	80 - 121				
Methylene chloride	1020	100	1000	0	102	74 - 124				
Naphthalene	808.4	50	1000	0	80.8	61 - 128				
n-Butylbenzene	1259	50	1000	0	126	75 - 128				
n-Propylbenzene	1243	50	1000	0	124	76 - 126				
o-Xylene	1120	50	1000	0	112	78 - 122				
sec-Butylbenzene	1240	50	1000	0	124	77 - 126				
Styrene	1117	50	1000	0	112	78 - 123				
tert-Butylbenzene	1208	50	1000	0	121	78 - 124				
Tetrachloroethene	1170	50	1000	0	117	74 - 129				
Toluene	1132	50	1000	0	113	80 - 121				
trans-1,2-Dichloroethene	1070	50	1000	0	107	75 - 124				
trans-1,3-Dichloropropene	1042	50	1000	0	104	73 - 127				
Trichloroethene	3694	50	1000	2615	108	79 - 123				
Trichlorofluoromethane	1085	50	1000	0	109	65 - 141				
Vinyl chloride	969.7	50	1000	0	97.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*2455*	*50*	*2500*	*0*	*98.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*2513*	*50*	*2500*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*2423*	*50*	*2500*	*0*	*96.9*	*80 - 119*				
Surr: Toluene-d8	*2659*	*50*	*2500*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080522-05MSD** Units: **ug/L** Analysis Date: **11-Aug-2022 15:22**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799025** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1088	50	1000	0	109	78 - 124	1104	1.48	20	
1,1,1-Trichloroethane	1060	50	1000	0	106	74 - 131	1105	4.17	20	
1,1,2,2-Tetrachloroethane	1108	50	1000	0	111	71 - 121	1025	7.75	20	
1,1,2-Trichloroethane	1056	50	1000	0	106	80 - 119	1044	1.13	20	
1,1-Dichloroethane	1017	50	1000	0	102	77 - 125	1050	3.22	20	
1,1-Dichloroethene	961.8	50	1000	0	96.2	71 - 131	1044	8.19	20	
1,1-Dichloropropene	1093	50	1000	0	109	78 - 125	1140	4.17	20	
1,2,3-Trichlorobenzene	1131	50	1000	0	113	69 - 129	872.2	25.8	20	R
1,2,3-Trichloropropane	1109	50	1000	0	111	73 - 122	1037	6.64	20	
1,2,4-Trichlorobenzene	1144	50	1000	0	114	69 - 130	993.3	14.1	20	
1,2,4-Trimethylbenzene	1212	50	1000	0	121	76 - 124	1163	4.13	20	
1,2-Dibromo-3-chloropropane	1145	50	1000	0	115	62 - 128	932.3	20.5	20	R
1,2-Dibromoethane	1065	50	1000	0	107	77 - 121	1058	0.705	20	
1,2-Dichlorobenzene	1161	50	1000	0	116	80 - 119	1090	6.31	20	
1,2-Dichloroethane	1116	50	1000	68.64	105	73 - 128	1121	0.404	20	
1,2-Dichloropropane	1004	50	1000	0	100	78 - 122	1044	3.89	20	
1,3,5-Trimethylbenzene	1223	50	1000	0	122	75 - 124	1185	3.16	20	
1,3-Dichlorobenzene	1187	50	1000	0	119	80 - 119	1104	7.18	20	
1,3-Dichloropropane	1058	50	1000	0	106	80 - 119	1066	0.711	20	
1,4-Dichlorobenzene	1164	50	1000	0	116	79 - 118	1096	6.08	20	
2,2-Dichloropropane	1034	50	1000	0	103	60 - 139	1108	6.85	20	
2-Butanone	1743	100	2000	0	87.2	56 - 143	1671	4.23	20	
2-Chlorotoluene	1170	50	1000	0	117	79 - 122	1127	3.79	20	
2-Hexanone	1992	100	2000	0	99.6	57 - 139	1983	0.442	20	
4-Chlorotoluene	1196	50	1000	0	120	78 - 122	1153	3.68	20	
4-Isopropyltoluene	1281	50	1000	0	128	77 - 127	1220	4.89	20	S
4-Methyl-2-pentanone	2161	100	2000	0	108	67 - 130	2101	2.78	20	
Acetone	1514	100	2000	0	75.7	39 - 160	1551	2.41	20	
Benzene	1035	50	1000	0	103	79 - 120	1069	3.31	20	
Bromobenzene	1167	50	1000	0	117	80 - 120	1102	5.74	20	
Bromochloromethane	938.9	50	1000	0	93.9	78 - 123	964.7	2.71	20	
Bromodichloromethane	1038	50	1000	0	104	79 - 125	1046	0.694	20	
Bromoform	999.8	50	1000	0	100.0	66 - 130	1002	0.171	20	
Bromomethane	949.8	50	1000	0	95.0	53 - 141	1061	11	20	

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22080522-05MSD** Units: **ug/L** Analysis Date: **11-Aug-2022 15:22**
Client ID: Run ID: **VOA6_414932** SeqNo: **6799025** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	2048	100	2000	0	102	64 - 133	2195	6.94	20	
Carbon tetrachloride	1073	50	1000	0	107	72 - 136	1113	3.69	20	
Chlorobenzene	1111	50	1000	0	111	82 - 118	1131	1.74	20	
Chloroethane	941.8	50	1000	0	94.2	60 - 138	974.7	3.43	20	
Chloroform	1007	50	1000	0	101	79 - 124	1048	4.05	20	
Chloromethane	1016	50	1000	0	102	50 - 139	1121	9.81	20	
cis-1,2-Dichloroethene	1061	50	1000	150.7	91.0	78 - 123	1118	5.24	20	
cis-1,3-Dichloropropene	1034	50	1000	0	103	75 - 124	1048	1.34	20	
Dibromochloromethane	1067	50	1000	0	107	74 - 126	1054	1.2	20	
Dibromomethane	1013	50	1000	0	101	79 - 123	1014	0.106	20	
Dichlorodifluoromethane	954.4	50	1000	0	95.4	32 - 152	1009	5.59	20	
Ethylbenzene	1138	50	1000	0	114	79 - 121	1152	1.24	20	
Hexachlorobutadiene	1236	50	1000	0	124	66 - 134	1158	6.53	20	
Isopropylbenzene	1171	50	1000	0	117	72 - 131	1192	1.8	20	
m,p-Xylene	2288	100	2000	0	114	80 - 121	2337	2.08	20	
Methylene chloride	980.4	100	1000	0	98.0	74 - 124	1020	3.92	20	
Naphthalene	1050	50	1000	0	105	61 - 128	808.4	26	20	R
n-Butylbenzene	1303	50	1000	0	130	75 - 128	1259	3.42	20	S
n-Propylbenzene	1273	50	1000	0	127	76 - 126	1243	2.4	20	S
o-Xylene	1115	50	1000	0	111	78 - 122	1120	0.448	20	
sec-Butylbenzene	1277	50	1000	0	128	77 - 126	1240	2.92	20	S
Styrene	1111	50	1000	0	111	78 - 123	1117	0.488	20	
tert-Butylbenzene	1249	50	1000	0	125	78 - 124	1208	3.29	20	S
Tetrachloroethene	1137	50	1000	0	114	74 - 129	1170	2.86	20	
Toluene	1114	50	1000	0	111	80 - 121	1132	1.59	20	
trans-1,2-Dichloroethene	1007	50	1000	0	101	75 - 124	1070	6.09	20	
trans-1,3-Dichloropropene	1027	50	1000	0	103	73 - 127	1042	1.44	20	
Trichloroethene	3509	50	1000	2615	89.4	79 - 123	3694	5.13	20	
Trichlorofluoromethane	1017	50	1000	0	102	65 - 141	1085	6.53	20	
Vinyl chloride	915.2	50	1000	0	91.5	58 - 137	969.7	5.78	20	
Surr: 1,2-Dichloroethane-d4	*2368*	*50*	*2500*	*0*	*94.7*	*81 - 118*	*2455*	*3.59*	*20*	
Surr: 4-Bromofluorobenzene	*2494*	*50*	*2500*	*0*	*99.8*	*85 - 114*	*2513*	*0.74*	*20*	
Surr: Dibromofluoromethane	*2387*	*50*	*2500*	*0*	*95.5*	*80 - 119*	*2423*	*1.49*	*20*	
Surr: Toluene-d8	*2693*	*50*	*2500*	*0*	*108*	*89 - 112*	*2659*	*1.29*	*20*	

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22080499

QC BATCH REPORT

Batch ID: R414932 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:				
HS22080499-01	HS22080499-03	HS22080499-05	HS22080499-06	
HS22080499-07	HS22080499-09			

ALS Houston, US Date: 02-Sep-22

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS22080499**

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 02-Sep-22

Sample Receipt Checklist

Work Order ID: HS22080499 **Date/Time Received:** 10-Aug-2022 09:45

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By: /S/ Nilesh D. Ranchod (eSignature) 10-Aug-2022 13:36 (Date/Time) **Reviewed by:** /S/ Ragen Giga (eSignature) 17-Aug-2022 09:12 (Date/Time)

Matrices: W 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 ☐	
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):	2.6uc/3.1c	IR31
Cooler(s)/Kit(s):	48209	
Date/Time sample(s) sent to storage:	8/10/2022	

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:

Bhate
Environmental Associates, Inc.
1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	PERCHLORATE	TOTAL METALS	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
MW5_080922	09 AUG 2022	0705	-	N		WG	5	X	X		X				
18CPTMW08DW_080922	09 AUG 2022	0750	-	N		WG	2		X		X				
18CPTMW08SW_080922	09 AUG 2022	0835	-	N		WG	5	X	X		X				
AWD1_080922	09 AUG 2022	0920		N		WG	1				X				
MW19_080922	09 AUG 2022	1005		N		WG	5	X	X	X					
MW10_080922	09 AUG 2022	1050	-	N		WG	5	X	X		X				
18WW10_080922	09 AUG 2022	1135	-	N		WG	5	X	X		X				
MW17_080922	09 AUG 2022	1225	-	N		WG	2		X		X				
TRIP BLANK	09 AUG 2022		-	TB		W	2	X							
			-												
			-												

Sample Analysis Requested (5)

Quality Assurance Samples (6)

HS22080499
Bhate Environmental Associates, Inc.
LHAAP/Site 18 /24

COMMENTS: STANDARD TAT 2.6°C 98209 IR21 CF=0.5

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	8/9/22	13:00	1. [illegible]	8/10/22	0945
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped No.:

Method of Shipment: ____

Fed Ex ____ Airbill Number:

Analytical Lab: ALS 10450 Stanchff Rd, Suite 210 Houston, TX 77099 (281) 530-5656

ATTN SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number [e.g. 09-02-1999-01]

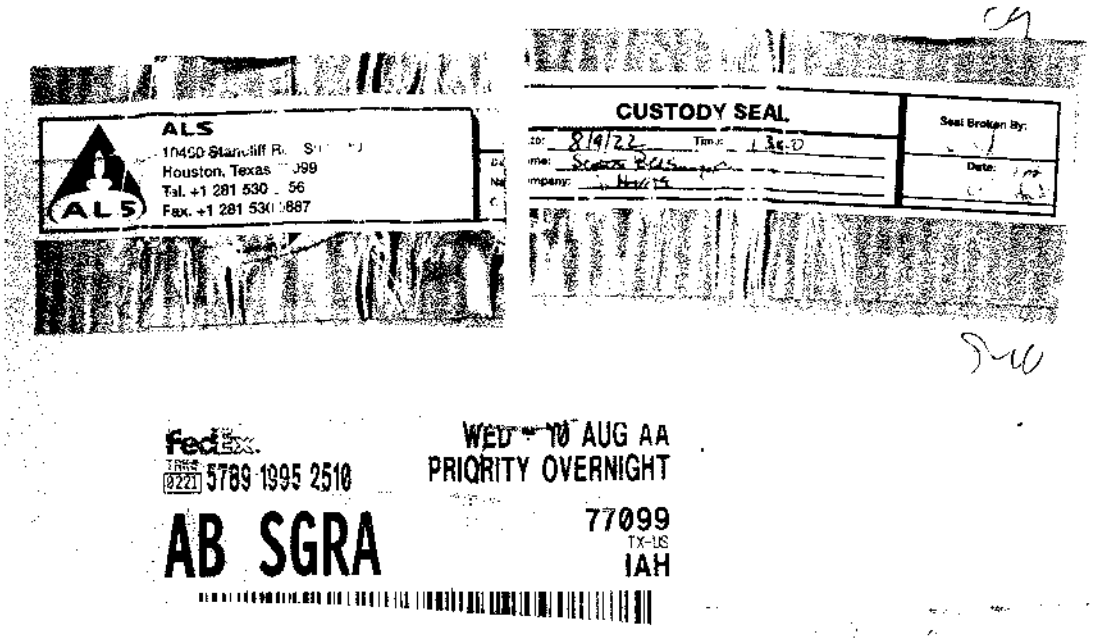
2.) Sample Type [SA] Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date [ddmmyy] and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control



FedEx
TRK# 0221 5789 1995 2510

WED - 10 AUG AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

August 24, 2022 Service Request No:E2200780

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22080499

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 10, 2022
For your reference, these analyses have been assigned our service request number **E2200780.**

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 Environmental - US	**Service Request No.:**	E2200780
Project:	HS22080499	**Date Received:**	08/10/22
Sample Matrix:	Water		

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 08/10/22.

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:

EQ2200345-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS/DLCS recoveries passed.

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:**E2200780
Project: HS22080499

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2200780-001	MW5_080922	8/9/2022	0705
E2200780-002	18CPTMW08DW_080922	8/9/2022	0750
E2200780-003	18CPTMW08SW_080922	8/9/2022	0835
E2200780-004	MW19_080922	8/9/2022	1005
E2200780-005	MW10_080922	8/9/2022	1050
E2200780-006	18WW10_080922	8/9/2022	1135
E2200780-007	MW17_080922	8/9/2022	1225

Service Request Summary

Folder #: **E2200780**
Client Name: ALS Environmental - US
Project Name: HS22080499
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080499
EDD: BASIC_WQC_CASNo_LOD

7 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2200780-001	MW5_080922	Water	08/09/22 0705	**IV**
E2200780-002	18CPTMW08DW_080922	Water	08/09/22 0750	**IV**
E2200780-003	18CPTMW08SW_080922	Water	08/09/22 0835	**IV**
E2200780-004	MW19_080922	Water	08/09/22 1005	**IV**
E2200780-005	MW10_080922	Water	08/09/22 1050	**IV**
E2200780-006	18WW10_080922	Water	08/09/22 1135	**IV**
E2200780-007	MW17_080922	Water	08/09/22 1225	**IV**

Service Request Summary

Folder #: **E2200780**
Client Name: ALS Environmental - US
Project Name: HS22080499
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 08/10/22
Internal Due Date: 8/24/2022
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22080499
EDD: BASIC_WQC_CASNo_LOD

7 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
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	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
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.

Data Qualifiers

Lab Standard

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.
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
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2021-080	8/31/2022
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
United States Department of Agriculture	P330-19-00299	10/10/2022
Washington Department of Health	C819-2022	11/14/2022

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 19353

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Ragen Giga
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RagenP.Giga@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:	HS22080499
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080499-01**	**MW5_080922**	**Water**	**09 Aug 2022 07:05**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
2.	**HS22080499-02**	**18CPTMW08DW_080922**	**Water**	**09 Aug 2022 07:50**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
3.	**HS22080499-03**	**18CPTMW08SW_080922**	**Water**	**09 Aug 2022 08:35**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
4.	**HS22080499-05**	**MW19_080922**	**Water**	**09 Aug 2022 10:05**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
5.	**HS22080499-06**	**MW10_080922**	**Water**	**09 Aug 2022 10:50**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
6.	**HS22080499-07**	**18WW10_080922**	**Water**	**09 Aug 2022 11:35**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022
7.	**HS22080499-08**	**MW17_080922**	**Water**	**09 Aug 2022 12:25**
	Provide Level II and Level IV reports in separate pdf			24 Aug 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 19353

QC Level: DOD IV (DoD Data Package)

Relinquished By:	NR	Date/Time:	
Received By:	tonero	Date/Time:	8/10/22 1710
Cooler ID(s):		Temperature(s):	

Cooler Receipt Form

ALS Environmental

Project Chemist CG

Client/Project ALS-H

Thermometer ID IR21

Date/Time Received: 8/10/22 Initials: CG Date/Time Logged in: 8/10/22 Initials CG

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		8/10/22	1700	CG	4.1°C	☑
						☐
						☐
						☐

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#: 404399 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/22/22 11:04

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200780-001	MW5_080922	.01	6850/ClO4 DOD			Water	10mL	
2	E2200780-002	18CPTMW08DW_080922	.01	6850/ClO4 DOD			Water	10mL	
3	E2200780-003	18CPTMW08SW_080922	.01	6850/ClO4 DOD			Water	10mL	
4	E2200780-004	MW19_080922	.01	6850/ClO4 DOD			Water	10mL	
5	E2200780-005	MW10_080922	.01	6850/ClO4 DOD			Water	10mL	
6	E2200780-006	18WW10_080922	.01	6850/ClO4 DOD			Water	10mL	
7	E2200780-007	MW17_080922	.01	6850/ClO4 DOD			Water	10mL	
8	E2200781-001	MW2_080822	.01	6850/ClO4 DOD			Water	10mL	
9	E2200781-002	MW2_080822_a	.01	6850/ClO4 DOD			Water	10mL	
10	E2200781-003	18CPTMW01DW_080822	.01	6850/ClO4 DOD			Water	10mL	
11	E2200781-004	18CPTMW01SW_080822	.01	6850/ClO4 DOD			Water	10mL	
12	E2200781-005	MW23_080822	.01	6850/ClO4 DOD			Water	10mL	
13	E2200781-006	17WW08_080822	.01	6850/ClO4 DOD			Water	10mL	
14	E2200781-007	17WW08_080822_a	.01	6850/ClO4 DOD			Water	10mL	
15	E2200781-008	MW8_080822	.01	6850/ClO4 DOD			Water	10mL	
16	E2200781-009	18CPTMW23SW_080822	.01	6850/ClO4 DOD			Water	10mL	
17	E2200781-010	18CPTMW23SW_080822	.01	6850/ClO4 DOD			Water	10mL	
18	E2200781-011	18WW24_080822	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2200345-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200345-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2200345-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2200345-04	MW23_080822 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2200345-05	MW23_080822 DMS	.01	6850/ClO4 DOD			Liquid	10mL	
24	R2207269-006	2208030912Y ST-5-985	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 222798 Logbook Ref: Perchlorate (1st Source) Expires On: 10/29/2022

EQ2200345-02	1.00µL	EQ2200345-02	1.00µL	EQ2200345-03	1.00µL	EQ2200345-03	1.00µL	EQ2200345-04	1.00µL	EQ2200345-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 223118 Logbook Ref: Perchlorate Internal Standard Expires On: 10/31/2022

E2200780-001	100.00µL	E2200780-002	100.00µL	E2200780-003	100.00µL	E2200780-004	100.00µL	E2200780-005	100.00µL	E2200780-006	100.00µL
E2200780-007	100.00µL	E2200781-001	100.00µL	E2200781-002	100.00µL	E2200781-003	100.00µL	E2200781-004	100.00µL	E2200781-005	100.00µL
E2200781-006	100.00µL	E2200781-007	100.00µL	E2200781-008	100.00µL	E2200781-009	100.00µL	E2200781-010	100.00µL	E2200781-011	100.00µL
EQ2200345-01	100.00µL	EQ2200345-01	100.00µL	EQ2200345-02	100.00µL	EQ2200345-02	100.00µL	EQ2200345-03	100.00µL	EQ2200345-03	100.00µL

Preparation Information Benchsheet

Prep Run#: 404399 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 8/22/22 11:04

EQ2200345-04 100.00µL EQ2200345-05 100.00µL R2207269-006 100.00µL

Preparation Materials

Water HPLC Grade	5/12/2022 Water (223056)	6850 Amber Glass screw vial	2mL Screw Top Vial (221894)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221929)		

Preparation Steps

Step: Preparation
Started: 8/22/22 11:04
Finished: 8/22/22 11:55
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 08/22/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ 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:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 0705
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	MW5_080922	**Units:**	µg/L
Lab Code:	E2200780-001	**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	**28700**		100	50.0	25.0	1000	8/22/22	8/23/22 19:22	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 0750
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	18CPTMW08DW_080922	**Units:**	µg/L
Lab Code:	E2200780-002	**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	**4930**		50.0	25.0	12.5	500	8/22/22	8/23/22 19:31	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 0835
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	18CPTMW08SW_080922	**Units:**	µg/L
Lab Code:	E2200780-003	**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	**13800**		100	50.0	25.0	1000	8/22/22	8/23/22 19:40	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 1005
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	MW19_080922	**Units:**	µg/L
Lab Code:	E2200780-004	**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	**0.0637**	J	0.100	0.0500	0.0250	1	8/22/22	8/24/22 11:43	404399	775163	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 1050
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	MW10_080922	**Units:**	µg/L
Lab Code:	E2200780-005	**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	8/22/22	8/23/22 18:29	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 1135
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	18WW10_080922	**Units:**	µg/L
Lab Code:	E2200780-006	**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	**0.0340**	J	0.100	0.0500	0.0250	1	8/22/22	8/24/22 12:46	404399	775163	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	8/ 9/22 1225
Sample Matrix:	Water	**Date Received:**	8/10/22
Sample Name:	MW17_080922	**Units:**	µg/L
Lab Code:	E2200780-007	**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	8/22/22	8/23/22 13:43	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200345-01	**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	8/22/22	8/23/22 09:50	404399	775090	

Accuracy & Precision

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22080499
Sample Matrix: Water

Service Request: E2200780
Date Analyzed: 8/23/22

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: 404399

	Lab Control Sample EQ2200345-02			Duplicate Lab Control Sample EQ2200345-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.102	0.100	102	0.0909	0.100	91	84 - 119	12	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:**	E2200780
Project:	HS22080499	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200345-02	**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	**0.102**		0.100	0.0500	0.0250	1	8/22/22	8/23/22 09:59	404399	775090	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2200780
Project:	HS22080499	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200345-03	**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	**0.0909**	J	0.100	0.0500	0.0250	1	8/22/22	8/23/22 10:08	404399	775090	

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September 01, 2022 **Analytical Report for Service Request No:** K2210032

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS22080499

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory August 31, 2022
For your reference, these analyses have been assigned our service request number **K2210032.**

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 3260. You may also contact me via email at Luke.Rahn@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Luke Rahn
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.
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.
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: HS22080499
Sample Matrix: Water

Service Request: K2210032
Date Received: 08/31/2022

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:

One water sample was received for analysis at ALS Environmental on 08/31/2022. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/01/2022

Chain of Custody

ALS Environmental—Kelso Laboratory
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K2210032

~~K2204442~~ =4

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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F: +1 281 530 5887
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Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **19688**

SUBCONTRACT TO:

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

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@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:	HS22080499
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22080499-05**	**MW19_080922**	**Water**	**09 Aug 2022 10:05**
	Mercury by 7470, DOD Tier II & IV;			06 Sep 2022

Comments: **Hg Expires 9/6/22**
Please analyze for 7470 Hg, DoD QSM 5.3 reporting, Excel EDD DL/LOD/LOQ; Tier II and Tier IV.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: [signature] Date/Time: 8/30/22 1800

Received By: Date/Time: 8/31/22 1030

Cooler ID(s): Temperature(s):

K2210032 PM LR

Cooler Receipt and Preservation Form

Client AS Houston Service Request K22 ~~0[illegible]~~

Received: 8/31/22 Opened: 8/31/22 By: [illegible] Unloaded: 8/31/22 By: [illegible]

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? 1 front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

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
	21.9	1Del				578919974960	

4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column above:
   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*

6. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* No Cooling
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
15. Were 100ml sterile microbiology bottles filled exactly to the 100ml mark? (NA) Y N Under filled Overfilled

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: Temp not an issue. Samples for Metals analysis.

1/13/22 *Page* ____ *of* ____

Metals

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2210032
Project:	HS22080499	**Date Collected:**	08/09/22 10:05
Sample Matrix:	Water	**Date Received:**	08/31/22 10:30
Sample Name:	MW19_080922	**Basis:**	NA
Lab Code:	K2210032-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/01/22 12:56	08/31/22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K2210032
Project:	HS22080499	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2214876-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.05	0.02	1	09/01/22 12:08	08/31/22	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22080499
Sample Matrix: Water

Service Request: K2210032
Date Analyzed: 09/01/22

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2214876-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	4.69	5.00	94	82-119

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499
Sample Matrix: Water

Metals

Prep Method: Method **Extraction Lot:** 405699
Analytical Method: 7470A **Extraction Date:** 08/31/22 18:54

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
MW19_080922	K2210032-001	8/9/22	8/31/22	10.0000 mL	10 mL	
Method Blank	KQ2214876-01MB	NA	NA	10.0000 mL	10 mL	
Lab Control Sample	KQ2214876-02LCS	NA	NA	10.0000 mL	10 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 09/01/22 12:00						
Mercury	7470A	776149	4.99	5.00	100	90-110
CCV 09/01/22 12:05						
Mercury	7470A	776149	5.05	5.00	101	90-110
CCV 09/01/22 12:24						
Mercury	7470A	776149	5.03	5.00	101	90-110
CCV 09/01/22 12:43						
Mercury	7470A	776149	5.03	5.00	101	90-110
CCV 09/01/22 13:05						
Mercury	7470A	776149	5.05	5.00	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	C
ICB 09/01/22 12:01				
Mercury	7470A	776149	-0.0270	J
CCB 09/01/22 12:06				
Mercury	7470A	776149	-0.0210	J
CCB 09/01/22 12:26				
Mercury	7470A	776149	-0.0210	J
CCB 09/01/22 12:45				
Mercury	7470A	776149	-0.0200	J
CCB 09/01/22 13:06				
Mercury	7470A	776149	-0.0220	J

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID / Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV							
Mercury	7470A	776149	0.20	0.2	99	50-150	09/01/22 12:03

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499/

Detection Limits

Instrument: K-CVAA-03 **Matrix:** Water

Analyte	Wavelength (nm)	Units	LOQ	LOD	MDL
Mercury	253	ug/L	0.2	0.05	0.02

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499/

ICP Linear Range (Quarterly)

Instrument: K-CVAA-03

Analyte	Concentration (ug/L)	Method
Mercury	10	7470A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499/

Analysis Run Log

Instrument ID: **K-CVAA-03** **Analytical BatchID:** **776149**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/01/22 11:50	
ZZZZZZ	1	09/01/22 11:51	
ZZZZZZ	1	09/01/22 11:53	
ZZZZZZ	1	09/01/22 11:55	
ZZZZZZ	1	09/01/22 11:56	
ZZZZZZ	1	09/01/22 11:58	
ICV1	1	09/01/22 12:00	X
ICB1	1	09/01/22 12:01	X
LLICV1	1	09/01/22 12:03	X
CCV1	1	09/01/22 12:05	X
CCB1	1	09/01/22 12:06	X
KQ2214876-01MB	1	09/01/22 12:08	X
KQ2214876-02LCS	1	09/01/22 12:09	X
ZZZZZZ	1	09/01/22 12:11	
ZZZZZZ	1	09/01/22 12:13	
ZZZZZZ	1	09/01/22 12:14	
ZZZZZZ	1	09/01/22 12:16	
ZZZZZZ	1	09/01/22 12:17	
ZZZZZZ	1	09/01/22 12:19	
ZZZZZZ	1	09/01/22 12:21	
ZZZZZZ	1	09/01/22 12:22	
CCV2	1	09/01/22 12:24	X
CCB2	1	09/01/22 12:26	X
ZZZZZZ	1	09/01/22 12:27	
ZZZZZZ	1	09/01/22 12:29	
ZZZZZZ	1	09/01/22 12:30	
ZZZZZZ	1	09/01/22 12:32	
ZZZZZZ	1	09/01/22 12:34	
ZZZZZZ	1	09/01/22 12:35	
ZZZZZZ	1	09/01/22 12:37	
ZZZZZZ	1	09/01/22 12:39	
ZZZZZZ	1	09/01/22 12:40	
ZZZZZZ	1	09/01/22 12:42	
CCV3	1	09/01/22 12:43	X
CCB3	1	09/01/22 12:45	X
ZZZZZZ	1	09/01/22 12:47	
ZZZZZZ	1	09/01/22 12:48	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K2210032
Project: HS22080499/

Analysis Run Log

Instrument ID: **K-CVAA-03** **Analytical BatchID:** **776149**

Sample	Dilution Factor	Date/Time	Hg
ZZZZZZ	1	09/01/22 12:50	
ZZZZZZ	1	09/01/22 12:52	
ZZZZZZ	1	09/01/22 12:53	
ZZZZZZ	1	09/01/22 12:55	
K2210032-001	1	09/01/22 12:56	X
ZZZZZZ	1	09/01/22 12:58	
ZZZZZZ	1	09/01/22 13:00	
CCV4	1	09/01/22 13:05	X
CCB4	1	09/01/22 13:06	X

HS22080499-MSVOA-SW8260

ALS WO# HS22080499

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-01
MW5_080922

Collected	Received	Matrix	Units
08/09/22 07:05	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1-Dichloroethane	3.2		0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-01
MW5_080922

Collected	Received	Matrix	Units
08/09/22 07:05	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
cis-1,2-Dichloroethene	11		0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 16:26	VOA6_414932	X081118
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Trichloroethene	41		0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118
Vinyl chloride	4		0.20	1.0	1.0	1	08/11/22 16:26	VOA6_414932	X081118

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-03
18CPTMW08SW_080922

Collected	Received	Matrix	Units
08/09/22 08:35	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1-Dichloroethane	3.3		0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-03
18CPTMW08SW_080922

Collected	Received	Matrix	Units
08/09/22 08:35	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
cis-1,2-Dichloroethene	9		0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 16:47	VOA6_414932	X081119
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Trichloroethene	35		0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119
Vinyl chloride	0.57	J	0.20	1.0	1.0	1	08/11/22 16:47	VOA6_414932	X081119

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-05
MW19_080922

Collected	Received	Matrix	Units
08/09/22 10:05	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2-Dichloroethane	0.68	J	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-05
MW19_080922

Collected	Received	Matrix	Units
08/09/22 10:05	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
cis-1,2-Dichloroethene	7.1		0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 17:08	VOA6_414932	X081120
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Trichloroethene	5.2		0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/11/22 17:08	VOA6_414932	X081120

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-06
MW10_080922

Collected	Received	Matrix	Units
08/09/22 10:50	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-06
MW10_080922

Collected	Received	Matrix	Units
08/09/22 10:50	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 17:29	VOA6_414932	X081121
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Trichloroethene	0.93	J	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/11/22 17:29	VOA6_414932	X081121

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-07
18WW10_080922

Collected	Received	Matrix	Units
08/09/22 11:35	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-07
18WW10_080922

Collected	Received	Matrix	Units
08/09/22 11:35	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 17:50	VOA6_414932	X081122
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/11/22 17:50	VOA6_414932	X081122

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-09

Trip Blank

Collected	Received	Matrix	Units
08/09/22 00:00	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

HS22080499-09
Trip Blank

Collected	Received	Matrix	Units
08/09/22 00:00	08/10/22 09:45	Water	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 12:55	VOA6_414932	X081108
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/11/22 12:55	VOA6_414932	X081108

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

VBLKW-220811
VBLKW-220811

Collected	Received	Matrix	Units
NA	NA	Aqueous	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
1,1,1,2-Tetrachloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1,1-Trichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1,2,2-Tetrachloroethane	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1,2-Trichloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,1-Dichloropropene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2,3-Trichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2,3-Trichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2,4-Trichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2,4-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2-Dibromo-3-chloropropane	1	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2-Dibromoethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2-Dichlorobenzene	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2-Dichloroethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,2-Dichloropropane	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,3,5-Trimethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,3-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,3-Dichloropropane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
1,4-Dichlorobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
2,2-Dichloropropane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
2-Butanone	1	U	0.50	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
2-Chlorotoluene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
2-Hexanone	2	U	1.0	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
4-Chlorotoluene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
4-Isopropyltoluene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
4-Methyl-2-pentanone	2	U	0.70	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
Acetone	2	U	0.40	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
Benzene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Bromobenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Bromochloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Bromodichloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

VBLKW-220811
VBLKW-220811

Collected	Received	Matrix	Units
NA	NA	Aqueous	ug/L

Analyte	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	Data File
Bromoform	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Bromomethane	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Carbon disulfide	2	U	0.60	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
Carbon tetrachloride	1	U	0.50	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Chlorobenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Chloroethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Chloroform	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Chloromethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
cis-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
cis-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Dibromochloromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Dibromomethane	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Dichlorodifluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Ethylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Hexachlorobutadiene	1	U	1.0	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Isopropylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
m,p-Xylene	1	U	0.50	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
Methylene chloride	2	U	0.40	2.0	2.0	1	08/11/22 12:34	VOA6_414932	X081107
Naphthalene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
n-Butylbenzene	1	U	0.40	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
n-Propylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
o-Xylene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
sec-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Styrene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
tert-Butylbenzene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Tetrachloroethene	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Toluene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
trans-1,2-Dichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
trans-1,3-Dichloropropene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Trichloroethene	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Trichlorofluoromethane	1	U	0.30	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107
Vinyl chloride	0.5	U	0.20	1.0	1.0	1	08/11/22 12:34	VOA6_414932	X081107

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Form 2

System Monitoring Compound Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

RunID
VOA6_414932

Volatiles Organics by Method 8260C

VLCSW-220811 (6799016)	Analyzed 08/11/22 11:52		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
Dibromofluoromethane	54.58	50.00	109	80 - 119	
Toluene-d8	51.63	50.00	103	89 - 112	
4-Bromofluorobenzene	52.04	50.00	104	85 - 114	
1,2-Dichloroethane-d4	54.09	50.00	108	81 - 118	

VBLKW-220811 (6799017)	Analyzed 08/11/22 12:34		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	47.50	50.00	95	81 - 118	
Dibromofluoromethane	47.55	50.00	95	80 - 119	
Toluene-d8	53.99	50.00	108	89 - 112	
4-Bromofluorobenzene	48.89	50.00	98	85 - 114	

HS22080499-09 (6799018)	Analyzed 08/11/22 12:55		Conc Units µg/L	DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	46.93	50.00	94	81 - 118	
Dibromofluoromethane	47.40	50.00	95	80 - 119	
Toluene-d8	53.02	50.00	106	89 - 112	
4-Bromofluorobenzene	48.90	50.00	98	85 - 114	

ZZZZZZMS (6799024)	Analyzed 08/11/22 15:01		Conc Units µg/L	DF 50
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	2455	2500	98	81 - 118	
Dibromofluoromethane	2423	2500	97	80 - 119	
Toluene-d8	2659	2500	106	89 - 112	
4-Bromofluorobenzene	2513	2500	101	85 - 114	

- Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

RunID
VOA6_414932

Volatiles Organics by Method 8260C

ZZZZZZMSD (6799025)	Analyzed 08/11/22 15:22		Conc Units µg/L		DF 50
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	2368	2500	95	81 - 118	
Dibromofluoromethane	2387	2500	96	80 - 119	
Toluene-d8	2693	2500	108	89 - 112	
4-Bromofluorobenzene	2494	2500	100	85 - 114	

HS22080499-01 (6799028)	Analyzed 08/11/22 16:26		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	48.36	50.00	97	81 - 118	
Dibromofluoromethane	47.72	50.00	95	80 - 119	
Toluene-d8	53.65	50.00	107	89 - 112	
4-Bromofluorobenzene	48.14	50.00	96	85 - 114	

HS22080499-03 (6799029)	Analyzed 08/11/22 16:47		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	48.50	50.00	97	81 - 118	
Dibromofluoromethane	47.85	50.00	96	80 - 119	
Toluene-d8	54.13	50.00	108	89 - 112	
4-Bromofluorobenzene	47.29	50.00	95	85 - 114	

HS22080499-05 (6799030)	Analyzed 08/11/22 17:08		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	47.19	50.00	94	81 - 118	
Dibromofluoromethane	47.73	50.00	96	80 - 119	
Toluene-d8	53.78	50.00	108	89 - 112	
4-Bromofluorobenzene	48.22	50.00	96	85 - 114	

- Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

RunID
VOA6_414932

Volatiles Organics by Method 8260C

HS22080499-06 (6799031)	Analyzed 08/11/22 17:29		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	47.56	50.00	95	81 - 118	
Dibromofluoromethane	46.77	50.00	94	80 - 119	
Toluene-d8	53.19	50.00	106	89 - 112	
4-Bromofluorobenzene	48.08	50.00	96	85 - 114	

HS22080499-07 (6799032)	Analyzed 08/11/22 17:50		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	#
1,2-Dichloroethane-d4	48.06	50.00	96	81 - 118	
Dibromofluoromethane	47.34	50.00	95	80 - 119	
Toluene-d8	53.26	50.00	107	89 - 112	
4-Bromofluorobenzene	47.67	50.00	95	85 - 114	

- Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

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Form 3A

Matrix Spike/Spike Duplicate Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

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Project

LHAAP/Site 18 /24

08/19/2022

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

		HS22080522-05		HS22080522-05MS				HS22080522-05MSD						
Sample Matrix	Aqueous	**Run Date**	08/11/22			08/11/22				08/11/22				
Units	µg/L	**Run Time**	14:40			15:01				15:22				
		Data File	X081113.D			X081114.D				X081115.D				
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	50	0	1104	1000	110		1088	1000	109		20	1.50	
1,1,1-Trichloroethane	74-131	50	0	1105	1000	110		1060	1000	106		20	4.20	
1,1,2,2-Tetrachloroethane	71-121	50	0	1025	1000	103		1108	1000	111		20	7.70	
1,1,2-Trichloroethane	80-119	50	0	1044	1000	104		1056	1000	106		20	1.10	
1,1-Dichloroethane	77-125	50	0	1050	1000	105		1017	1000	102		20	3.20	
1,1-Dichloroethene	71-131	50	0	1044	1000	104		961.8	1000	96		20	8.20	
1,1-Dichloropropene	78-125	50	0	1140	1000	114		1093	1000	109		20	4.20	
1,2,3-Trichlorobenzene	69-129	50	0	872.2	1000	87		1131	1000	113		20	25.8	
1,2,3-Trichloropropane	73-122	50	0	1037	1000	104		1109	1000	111		20	6.60	
1,2,4-Trichlorobenzene	69-130	50	0	993.3	1000	99		1144	1000	114		20	14.1	
1,2,4-Trimethylbenzene	76-124	50	0	1163	1000	116		1212	1000	121		20	4.10	
1,2-Dibromo-3-	62-128	50	0	932.3	1000	93		1145	1000	115		20	20.5	
1,2-Dibromoethane	77-121	50	0	1058	1000	106		1065	1000	107		20	0.700	
1,2-Dichlorobenzene	80-119	50	0	1090	1000	109		1161	1000	116		20	6.30	
1,2-Dichloroethane	73-128	50	68.64	1121	1000	105		1116	1000	105		20	0.400	
1,2-Dichloropropane	78-122	50	0	1044	1000	104		1004	1000	100		20	3.90	
1,3,5-Trimethylbenzene	75-124	50	0	1185	1000	118		1223	1000	122		20	3.20	
1,3-Dichlorobenzene	80-119	50	0	1104	1000	110		1187	1000	119		20	7.20	
1,3-Dichloropropane	80-119	50	0	1066	1000	107		1058	1000	106		20	0.700	
1,4-Dichlorobenzene	79-118	50	0	1096	1000	110		1164	1000	116		20	6.10	
2,2-Dichloropropane	60-139	50	0	1108	1000	111		1034	1000	103		20	6.80	
2-Butanone	56-143	50	0	1671	2000	84		1743	2000	87		20	4.20	
2-Chlorotoluene	79-122	50	0	1127	1000	113		1170	1000	117		20	3.80	
2-Hexanone	57-139	50	0	1983	2000	99		1992	2000	100		20	0.400	
4-Chlorotoluene	78-122	50	0	1153	1000	115		1196	1000	120		20	3.70	
4-Isopropyltoluene	77-127	50	0	1220	1000	122		1281	1000	128	*	20	4.90	
4-Methyl-2-pentanone	67-130	50	0	2101	2000	105		2161	2000	108		20	2.80	
Acetone	39-160	50	0	1551	2000	78		1514	2000	76		20	2.40	
Benzene	79-120	50	0	1069	1000	107		1035	1000	103		20	3.30	
Bromobenzene	80-120	50	0	1102	1000	110		1167	1000	117		20	5.70	
Bromochloromethane	78-123	50	0	964.7	1000	97		938.9	1000	94		20	2.70	
Bromodichloromethane	79-125	50	0	1046	1000	105		1038	1000	104		20	0.700	
Bromoform	66-130	50	0	1002	1000	100		999.8	1000	100		20	0.200	
Bromomethane	53-141	50	0	1061	1000	106		949.8	1000	95		20	11.0	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

		HS22080522-05		HS22080522-05MS				HS22080522-05MSD						
Sample Matrix	Aqueous	**Run Date**	08/11/22			08/11/22				08/11/22				
Units	µg/L	**Run Time**	14:40			15:01				15:22				
		Data File	X081113.D			X081114.D				X081115.D				
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	50	0	2195	2000	110		2048	2000	102		20	6.90	
Carbon tetrachloride	72-136	50	0	1113	1000	111		1073	1000	107		20	3.70	
Chlorobenzene	82-118	50	0	1131	1000	113		1111	1000	111		20	1.70	
Chloroethane	60-138	50	0	974.7	1000	98		941.8	1000	94		20	3.40	
Chloroform	79-124	50	0	1048	1000	105		1007	1000	101		20	4.10	
Chloromethane	50-139	50	0	1121	1000	112		1016	1000	102		20	9.80	
cis-1,2-Dichloroethene	78-123	50	150.7	1118	1000	97		1061	1000	91		20	5.20	
cis-1,3-Dichloropropene	75-124	50	0	1048	1000	105		1034	1000	103		20	1.30	
Dibromochloromethane	74-126	50	0	1054	1000	105		1067	1000	107		20	1.20	
Dibromomethane	79-123	50	0	1014	1000	101		1013	1000	101		20	0.100	
Dichlorodifluoromethane	32-152	50	0	1009	1000	101		954.4	1000	95		20	5.60	
Ethylbenzene	79-121	50	0	1152	1000	115		1138	1000	114		20	1.20	
Hexachlorobutadiene	66-134	50	0	1158	1000	116		1236	1000	124		20	6.50	
Isopropylbenzene	72-131	50	0	1192	1000	119		1171	1000	117		20	1.80	
m,p-Xylene	80-121	50	0	2337	2000	117		2288	2000	114		20	2.10	
Methylene chloride	74-124	50	0	1020	1000	102		980.4	1000	98		20	3.90	
n-Butylbenzene	75-128	50	0	1259	1000	126		1303	1000	130	*	20	3.40	
n-Propylbenzene	76-126	50	0	1243	1000	124		1273	1000	127	*	20	2.40	
Naphthalene	61-128	50	0	808.4	1000	81		1050	1000	105		20	26.0	
o-Xylene	78-122	50	0	1120	1000	112		1115	1000	111		20	0.400	
sec-Butylbenzene	77-126	50	0	1240	1000	124		1277	1000	128	*	20	2.90	
Styrene	78-123	50	0	1117	1000	112		1111	1000	111		20	0.500	
tert-Butylbenzene	78-124	50	0	1208	1000	121		1249	1000	125	*	20	3.30	
Tetrachloroethene	74-129	50	0	1170	1000	117		1137	1000	114		20	2.90	
Toluene	80-121	50	0	1132	1000	113		1114	1000	111		20	1.60	
trans-1,2-Dichloroethene	75-124	50	0	1070	1000	107		1007	1000	101		20	6.10	
trans-1,3-Dichloropropene	73-127	50	0	1042	1000	104		1027	1000	103		20	1.40	
Trichloroethene	79-123	50	2615	3694	1000	108		3509	1000	89		20	5.10	
Trichlorofluoromethane	65-141	50	0	1085	1000	109		1017	1000	102		20	6.50	
Vinyl chloride	58-137	50	0	969.7	1000	97		915.2	1000	92		20	5.80	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

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Form 3B

Laboratory Control Sample Recovery

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

VOA6_414932			VLCSW-220811		
QC Matrix: Aqueous	Units: ug/L	Run Date / Run Time	08/11/22 11:52		
Analyte	%R Limits	Spike Added	LCS Result	%R	Q
1,1,1,2-Tetrachloroethane	78-124	20	20.58	103	
1,1,1-Trichloroethane	74-131	20	21.31	107	
1,1,2,2-Tetrachloroethane	71-121	20	20.08	100	
1,1,2-Trichloroethane	80-119	20	19.97	100	
1,1-Dichloroethane	77-125	20	20.47	102	
1,1-Dichloroethene	71-131	20	19.49	97	
1,1-Dichloropropene	78-125	20	21.3	107	
1,2,3-Trichlorobenzene	69-129	20	21.2	106	
1,2,3-Trichloropropane	73-122	20	20.03	100	
1,2,4-Trichlorobenzene	69-130	20	22.11	111	
1,2,4-Trimethylbenzene	76-124	20	21.72	109	
1,2-Dibromo-3-chloropropane	62-128	20	21.31	107	
1,2-Dibromoethane	77-121	20	20.37	102	
1,2-Dichlorobenzene	80-119	20	20.8	104	
1,2-Dichloroethane	73-128	20	20.98	105	
1,2-Dichloroethane-d4	81-118	50	54.09	108	
1,2-Dichloropropane	78-122	20	20.51	103	
1,3,5-Trimethylbenzene	75-124	20	21.77	109	
1,3-Dichlorobenzene	80-119	20	20.93	105	
1,3-Dichloropropane	80-119	20	20.46	102	
1,4-Dichlorobenzene	79-118	20	20.94	105	
2,2-Dichloropropane	60-139	20	22.26	111	
2-Butanone	56-143	40	36.34	91	
2-Chlorotoluene	79-122	20	20.95	105	
2-Hexanone	57-139	40	39.82	100	
4-Bromofluorobenzene	85-114	50	52.04	104	
4-Chlorotoluene	78-122	20	21.47	107	
4-Isopropyltoluene	77-127	20	22.44	112	
4-Methyl-2-pentanone	67-130	40	42.03	105	
Acetone	39-160	40	38.3	96	
Benzene	79-120	20	20.56	103	
Bromobenzene	80-120	20	21.44	107	
Bromochloromethane	78-123	20	20.05	100	
Bromodichloromethane	79-125	20	21.05	105	
Bromoform	66-130	20	19.03	95	
Bromomethane	53-141	20	21.11	106	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

VOA6_414932			VLCSW-220811		
QC Matrix: Aqueous	Units: ug/L	Run Date / Run Time	08/11/22 11:52		
Analyte	%R Limits	Spike Added	LCS Result	%R	Q
Carbon disulfide	64-133	40	40.84	102	
Carbon tetrachloride	72-136	20	20.46	102	
Chlorobenzene	82-118	20	20.93	105	
Chloroethane	60-138	20	20.4	102	
Chloroform	79-124	20	20.95	105	
Chloromethane	50-139	20	22.49	112	
cis-1,2-Dichloroethene	78-123	20	21.76	109	
cis-1,3-Dichloropropene	75-124	20	21.05	105	
Dibromochloromethane	74-126	20	20.28	101	
Dibromofluoromethane	80-119	50	54.58	109	
Dibromomethane	79-123	20	20.6	103	
Dichlorodifluoromethane	32-152	20	22.75	114	
Ethylbenzene	79-121	20	21.33	107	
Hexachlorobutadiene	66-134	20	21.49	107	
Isopropylbenzene	72-131	20	21.27	106	
m,p-Xylene	80-121	40	42.51	106	
Methylene chloride	74-124	20	21.82	109	
Naphthalene	61-128	20	21.26	106	
n-Butylbenzene	75-128	20	23.03	115	
n-Propylbenzene	76-126	20	22.39	112	
o-Xylene	78-122	20	20.86	104	
sec-Butylbenzene	77-126	20	22.25	111	
Styrene	78-123	20	20.83	104	
tert-Butylbenzene	78-124	20	21.71	109	
Tetrachloroethene	74-129	20	20.49	102	
Toluene	80-121	20	20.73	104	
Toluene-d8	89-112	50	51.63	103	
trans-1,2-Dichloroethene	75-124	20	21.23	106	
trans-1,3-Dichloropropene	73-127	20	20.82	104	
Trichloroethene	79-123	20	20.76	104	
Trichlorofluoromethane	65-141	20	20.38	102	
Vinyl chloride	58-137	20	19.58	98	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

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Form 4

Method Blank Summary

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

BatchID
R414932

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	VBLKW-220811	X081107.D	08/11/22 12:34	VOA6_414932
VLCSW-220811	VLCSW-220811	X081105.D	08/11/22 11:52	VOA6_414932
Trip Blank	HS22080499-09	X081108.D	08/11/22 12:55	VOA6_414932
ZZZZZZ	HS22080522-12	X081109.D	08/11/22 13:16	VOA6_414932
ZZZZZZ	HS22080522-05	X081110.D	08/11/22 13:37	VOA6_414932
ZZZZZZ	HS22080522-01	X081111.D	08/11/22 13:58	VOA6_414932
ZZZZZZ	HS22080522-02	X081112.D	08/11/22 14:19	VOA6_414932
ZZZZZZ	HS22080522-05	X081113.D	08/11/22 14:40	VOA6_414932
ZZZZZZMS	HS22080522-05MS	X081114.D	08/11/22 15:01	VOA6_414932
ZZZZZZMSD	HS22080522-05MSD	X081115.D	08/11/22 15:22	VOA6_414932
ZZZZZZ	HS22080522-01	X081116.D	08/11/22 15:43	VOA6_414932
ZZZZZZ	HS22080522-02	X081117.D	08/11/22 16:04	VOA6_414932
MW5_080922	HS22080499-01	X081118.D	08/11/22 16:26	VOA6_414932
18CPTMW08SW_080922	HS22080499-03	X081119.D	08/11/22 16:47	VOA6_414932
MW19_080922	HS22080499-05	X081120.D	08/11/22 17:08	VOA6_414932
MW10_080922	HS22080499-06	X081121.D	08/11/22 17:29	VOA6_414932
18WW10_080922	HS22080499-07	X081122.D	08/11/22 17:50	VOA6_414932
ZZZZZZ	HS22080522-03	X081123.D	08/11/22 18:11	VOA6_414932
ZZZZZZ	HS22080522-06	X081124.D	08/11/22 18:32	VOA6_414932
ZZZZZZ	HS22080522-07	X081125.D	08/11/22 18:53	VOA6_414932
ZZZZZZ	HS22080522-09	X081126.D	08/11/22 19:14	VOA6_414932
ZZZZZZ	HS22080522-11	X081127.D	08/11/22 19:35	VOA6_414932
ZZZZZZ	HS22080522-08	X081128.D	08/11/22 19:56	VOA6_414932
ZZZZZZ	HS22080522-10	X081129.D	08/11/22 20:17	VOA6_414932

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Form 5

Instrument Performance Check

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

RunID
VOA6_413360

Tune File X071901.D 07/19/22 11:06

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	16 (16)
75	30.0 - 60.0% of mass 95	50.1 (50.1)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6.3 (6.29)
173	Less than 2.0% of mass 174	0.5 (0.527) 1
174	50.0 - 120.0% of mass 95	99.8 (99.8)
175	4.0 - 9.0% of mass 174	6.4 (6.41) 1
176	93.0 - 101.0% of mass 174	99.2 (99.4) 1
177	5.0 - 9.0% of mass 176	5.4 (5.48) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	07/19/22 11:27	X071902	VSTD000.25
2	ICAL2	07/19/22 12:08	X071903	VSTD000.5
3	ICAL3	07/19/22 12:29	X071904	VSTD001
4	ICAL4	07/19/22 12:50	X071905	VSTD002
5	ICAL5	07/19/22 13:11	X071906	VSTD005
6	ICAL6	07/19/22 13:32	X071907	VSTD020
7	ICAL7	07/19/22 13:53	X071908	VSTD050
8	ICAL8	07/19/22 14:14	X071909	VSTD100
9	ICAL9	07/19/22 14:35	X071910	VSTD150
10	ICAL	07/19/22 14:56	X071911	VSTD200
11	ICV	07/19/22 16:20	X071915	CCV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

RunID
VOA6_414932

Tune File X081101.D 08/11/22 10:28

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	17.9 (17.9)
75	30.0 - 60.0% of mass 95	47.3 (47.3)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.2 (7.2)
173	Less than 2.0% of mass 174	0.6 (0.755) 1
174	50.0 - 120.0% of mass 95	83.3 (83.3)
175	4.0 - 9.0% of mass 174	6.3 (7.52) 1
176	93.0 - 101.0% of mass 174	81.3 (97.6) 1
177	5.0 - 9.0% of mass 176	6.4 (7.89) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	08/11/22 11:10	X081103	CCV
2	CCB	08/11/22 11:31	X081104	CCB
3	LCS	08/11/22 11:52	X081105	VLCSW-220811
4	MBLK	08/11/22 12:34	X081107	VBLKW-220811
5	SAMP	08/11/22 12:55	X081108	Trip Blank
6	MS	08/11/22 15:01	X081114	ZZZZZZMS
7	MSD	08/11/22 15:22	X081115	ZZZZZZMSD
8	SAMP	08/11/22 16:26	X081118	MW5_080922
9	SAMP	08/11/22 16:47	X081119	18CPTMW08SW_080922
10	SAMP	08/11/22 17:08	X081120	MW19_080922
11	SAMP	08/11/22 17:29	X081121	MW10_080922
12	SAMP	08/11/22 17:50	X081122	18WW10_080922
13	CCV_EN	08/11/22 20:38	X081130	CCV-END

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Form 6

Initial Calibration Data

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127
ICAL End Date 19-JUL-2022 1456

Calibration Files

Level 1 ..Voa6.i\X220719.b\X071902.D
Level 2 ..Voa6.i\X220719.b\X071903.D
Level 3 ..Voa6.i\X220719.b\X071904.D
Level 4 ..Voa6.i\X220719.b\X071905.D
Level 5 ..Voa6.i\X220719.b\X071906.D
Level 6 ..Voa6.i\X220719.b\X071907.D
Level 7 ..Voa6.i\X220719.b\X071908.D
Level 8 ..Voa6.i\X220719.b\X071909.D
Level 9 ..Voa6.i\X220719.b\X071910.D
Level 10 ..Voa6.i\X220719.b\X071911.D

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Dichlorodifluoromethane	NE 341283	3857 739202	7427 1136547	12732 NE	38222	148427	LINR	-0.00347	0.47469		0.99986	
Chloromethane	NE 337031	3959 703134	7297 1102492	13594 1500734	37005	141389	LINR	0.00105	0.46342		0.99980	
Propionitrile	NE 0.04685	0.04689 0.04773	0.05107 0.04839	0.04322 0.04906	0.04144	0.04294	AVRG		0.04640		6.88983	
Vinyl Chloride	NE 0.50451	0.55489 0.50140	0.58340 0.49744	0.49436 0.48578	0.56842	0.52845	AVRG		0.52429		6.88014	
Bromomethane	NE 257164	3413 532992	6763 802069	13133 1068317	30861	109055	LINR	-0.02742	0.33247		0.99976	
Chloroethane	NE 0.31358	0.31871 0.31044	0.34212 0.30725	0.31021 0.30357	0.35840	0.32202	AVRG		0.32070		5.64994	
Trichlorofluoromethane	NE 0.74240	0.79460 0.77510	0.87952 0.75654	0.73879 0.72528	0.85434	0.81961	AVRG		0.78735		6.86979	
Acrolein	NE 0.01514	0.01840 0.01585	0.01873 0.01488	0.01554 0.01505	0.01690	0.01630	AVRG		0.01631		8.76506	
Acetone	NE 169593	1762 331360	3509 485174	7337 633758	20021	78540	LINR	-0.12005	0.09934		0.99768	*
1,1-Dichloroethene	NE 0.39243	0.44979 0.40203	0.47002 0.39497	0.39454 0.38464	0.44374	0.42427	AVRG		0.41738		7.34470	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isobutyl Alcohol	NE 0.05563	0.05761 0.05548	0.05786 0.05559	0.05329 0.05721	0.05282	0.05451	AVRG		0.05555		3.24430	
Acetonitrile	NE 0.05038	0.05433 0.05104	0.05949 0.04930	0.04820 0.04928	0.04730	0.04952	AVRG		0.05098		7.37463	
Allyl Chloride	NE 0.87043	0.91865 0.89062	0.89575 0.86951	0.81071 0.88679	0.78896	0.84343	AVRG		0.86387		4.87488	
Iodomethane	NE 813391	3948 1806137	9058 2818279	17343 3905197	59955	294206	QUAD	0.03933	1.79246	-0.03172	0.99991	
Acrylonitrile	NE 0.13361	0.13013 0.13802	0.12726 0.13703	0.13561 0.13954	0.12102	0.11542	AVRG		0.13085		6.30029	
Methylene Chloride	NE 346955	4801 702932	7303 1078247	16740 1463710	40888	145583	LINR	-0.01749	0.45185		0.99986	
Methyl tert-butyl ether	NE 1.22369	1.35179 1.22448	1.30218 1.22206	1.22875 1.22105	1.18813	1.17183	AVRG		1.23711		4.51341	
Carbon Disulfide	NE 1.07589	1.14212 1.08991	1.20180 1.08317	0.98938 1.07302	1.17686	1.11263	AVRG		1.10497		5.71600	
trans-1,2-Dichloroethene	NE 0.43451	0.45777 0.43639	0.45194 0.43767	0.39448 0.43557	0.47805	0.43234	AVRG		0.43986		5.15003	
Vinyl Acetate	NE 1.11301	1.13062 1.10686	1.03088 1.12408	0.95722 1.13780	0.99794	1.07050	AVRG		1.07432		6.03941	
1,1-Dichloroethane	NE 0.75448	0.75835 0.74965	0.85338 0.75001	0.72477 0.75483	0.81381	0.76849	AVRG		0.76975		5.10213	
Chloroprene	NE 0.16690	0.21590 0.17780	0.23095 0.18053	0.17755 0.17676	0.18690	0.18468	AVRG		0.18866		11.04258	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
2-Butanone	NE 0.13168	0.11904 0.13218	0.11583 0.13456	0.12216 0.13704	0.11648	0.11993	AVRG		0.12543		6.65094	
Methacrylonitrile	NE 0.32070	0.35509 0.33333	0.36384 0.33543	0.30560 0.33996	0.30364	0.30600	AVRG		0.32929		6.67277	
2,2-Dichloropropane	NE 492680	5133 1068902	10957 1641201	20343 2176392	53750	205808	LINR	-0.00496	0.68028		0.99988	
cis-1,2-Dichloroethene	NE 0.50885	0.49172 0.50016	0.51104 0.50493	0.43069 0.50547	0.52098	0.49999	AVRG		0.49709		5.27080	
Chloroform	NE 0.83760	0.83735 0.82434	0.92168 0.82894	0.76299 0.83133	0.90532	0.84083	AVRG		0.84337		5.50143	
Bromochloromethane	NE 0.27357	0.30545 0.26970	0.30730 0.27351	0.26532 0.27768	0.29021	0.27450	AVRG		0.28191		5.47324	
1,1,1-Trichloroethane	NE 0.68374	0.74347 0.71284	0.70340 0.71494	0.62292 0.70114	0.77773	0.72356	AVRG		0.70930		5.96362	
1,1-Dichloropropene	NE 0.38166	0.44685 0.40803	0.40731 0.41082	0.36152 0.39353	0.41314	0.40896	AVRG		0.40353		5.83045	
1,2-Dichloroethane	NE 0.43158	0.45202 0.42458	0.44506 0.42168	0.42796 0.41752	0.47269	0.45348	AVRG		0.43851		4.18588	
Carbon Tetrachloride	NE 0.39118	0.50908 0.41598	0.46963 0.42471	0.38975 0.40844	0.44487	0.42801	AVRG		0.43130		8.92384	
Benzene	NE 1.15995	1.25620 1.14622	1.26876 1.15552	1.10904 1.13526	1.24627	1.18606	AVRG		1.18481		4.91091	
Trichloroethene	NE 0.34061	0.35992 0.34803	0.35732 0.35175	0.32377 0.34179	0.37398	0.36156	AVRG		0.35097		4.15640	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromodichloromethane	NE 0.42664	0.41476 0.42188	0.41935 0.43361	0.38632 0.43009	0.43854	0.42924	AVRG		0.42227		3.63023	
Methyl Methacrylate	NE 0.33810	0.35428 0.35297	0.36797 0.35384	0.32032 0.35264	0.31605	0.32716	AVRG		0.34259		5.23642	
2-Chloroethylvinyl ether	NE 223234	1850 504631	3725 819469	7768 1149192	17033	78395	LINR	0.10536	0.11870		0.99822	
1,2-Dichloropropane	NE 0.30337	0.35770 0.29927	0.28731 0.30442	0.28964 0.30096	0.32153	0.30561	AVRG		0.30776		6.87676	
2-Nitropropane	NE 0.12611	0.12797 0.13069	0.19178 0.13385	0.11350 0.13391	0.11279	0.11227	AVRG		0.13143		18.50296	*
Dibromomethane	NE 0.20622	0.21251 0.20334	0.21510 0.20760	0.19090 0.20586	0.21208	0.20478	AVRG		0.20649		3.42073	
4-Methyl-2-Pentanone	NE 0.24472	0.22983 0.24442	0.24561 0.25282	0.22592 0.25229	0.25146	0.24562	AVRG		0.24363		3.93284	
cis-1,3-Dichloropropene	NE 0.53443	0.49743 0.52810	0.50399 0.54559	0.46440 0.54209	0.52744	0.52481	AVRG		0.51870		4.97948	
Ethyl Methacrylate	NE 0.39459	0.42724 0.41348	0.44487 0.42518	0.37757 0.41767	0.36951	0.36730	AVRG		0.40416		6.92090	
Toluene	NE 1.35111	1.48534 1.35558	1.47874 1.39012	1.31998 1.34136	1.50056	1.42688	AVRG		1.40552		4.92585	
trans-1,3-Dichloropropene	NE 0.45411	0.43482 0.45430	0.34886 0.46709	0.39948 0.46507	0.40882	0.43356	AVRG		0.42957		8.93088	
2-Hexanone	NE 0.15866	0.15729 0.16217	0.14268 0.16863	0.14354 0.16860	0.15261	0.16082	AVRG		0.15722		6.02939	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,1,2-Trichloroethane	NE 0.25236	0.26865 0.25133	0.25359 0.25533	0.25161 0.25253	0.27292	0.25536	AVRG		0.25708		3.10239	
1,3-Dichloropropane	NE 0.51727	0.53853 0.51284	0.53548 0.52419	0.47624 0.51694	0.55751	0.52730	AVRG		0.52292		4.25815	
Dibromochloromethane	NE 0.37149	0.37697 0.37484	0.36224 0.39045	0.34884 0.38784	0.35529	0.37202	AVRG		0.37111		3.72423	
Tetrachloroethene	NE 0.29942	0.33218 0.31397	0.34917 0.31997	0.30195 0.30320	0.35645	0.34172	AVRG		0.32423		6.63880	
1,2-Dibromoethane	NE 0.32860	0.33970 0.32537	0.30962 0.33375	0.29367 0.33265	0.34003	0.33026	AVRG		0.32596		4.63664	
1-Chlorohexane	NE 0.22707	0.27669 0.26138	0.25539 0.26751	0.22698 0.25288	0.26192	0.26587	AVRG		0.25508		6.79509	
Chlorobenzene	NE 0.92599	0.94815 0.93555	0.96085 0.95703	0.89814 0.93363	1.00628	0.96687	AVRG		0.94805		3.19309	
1,1,1,2-Tetrachloroethane	NE 0.34858	0.35679 0.35393	0.35956 0.36522	0.30262 0.35850	0.36041	0.35591	AVRG		0.35128		5.35668	
Ethylbenzene	NE 0.45868	0.48108 0.47563	0.48827 0.48606	0.43327 0.46961	0.51619	0.50151	AVRG		0.47892		5.02565	
m,p-Xylenes	NE 0.57839	0.55805 0.59729	0.59871 0.61406	0.56232 0.58838	0.63413	0.62999	AVRG		0.59570		4.55362	
o-Xylene	NE 0.55697	0.59290 0.57740	0.58091 0.58940	0.53642 0.57361	0.60968	0.59466	AVRG		0.57911		3.77403	
Styrene	NE 0.95759	0.91159 0.99020	0.92976 1.01045	0.83032 0.98766	0.97583	0.98950	AVRG		0.95366		5.86887	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromoform	NE 238426	1755 516716	3730 810870	7169 1117306	20344	88254	LINR	0.02467	0.24853		0.99965	
Isopropylbenzene	NE 1.35695	1.43849 1.44809	1.47443 1.47877	1.30268 1.40439	1.54245	1.51550	AVRG		1.44020		5.26370	
1,1,2,2-Tetrachloroethane	NE 0.66696	0.78144 0.66668	0.76770 0.68892	0.65338 0.69597	0.70660	0.69246	AVRG		0.70224		6.32540	
1,2,3-Trichloropropane	NE 0.49473	0.58784 0.49603	0.58996 0.56553	0.54572 0.52662	0.53765	0.52889	AVRG		0.54144		6.44455	
trans-1,4-Dichloro-2-butene	NE 0.08441	0.08639 0.08926	0.07814 0.09300	0.07380 0.09316	0.07809	0.08014	AVRG		0.08404		8.27424	
n-Propylbenzene	NE 3.09097	3.25257 3.29325	3.29066 3.37575	2.95890 3.28483	3.57342	3.56584	AVRG		3.29846		6.00434	
Bromobenzene	NE 0.81720	0.87451 0.82902	0.85594 0.85910	0.81226 0.85431	0.91203	0.87056	AVRG		0.85388		3.65984	
1,3,5-Trimethylbenzene	NE 2.25194	2.59658 2.36457	2.46258 2.43329	2.25441 2.36654	2.59000	2.53828	AVRG		2.42869		5.38765	
2-Chlorotoluene	NE 1.93372	2.44781 1.97524	2.37660 2.01189	2.08294 2.01003	2.31087	2.13956	AVRG		2.14319		8.82358	
4-Chlorotoluene	NE 2.23415	2.65636 2.28193	2.51503 2.35478	2.21178 2.34073	2.48509	2.44971	AVRG		2.39217		6.10354	
tert-Butylbenzene	NE 1.87857	2.09660 2.01729	2.17146 2.06018	1.85260 1.99143	2.27190	2.18568	AVRG		2.05841		6.80340	
1,2,4-Trimethylbenzene	NE 2.26858	2.54200 2.34756	2.45760 2.40073	2.18686 2.36591	2.52880	2.48717	AVRG		2.39836		4.98293	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
sec-Butylbenzene	NE 2.56004	2.95435 2.79338	2.91853 2.87407	2.53800 2.77273	2.97323	2.98357	AVRG		2.81866		6.02795	
p-Isopropyltoluene	NE 2.27539	2.49491 2.44665	2.57620 2.52369	2.05158 2.45478	2.51906	2.60761	AVRG		2.43888		7.11852	
1,3-Dichlorobenzene	NE 1.33559	1.42838 1.36835	1.38167 1.40273	1.27970 1.39635	1.47031	1.42236	AVRG		1.38727		4.01099	
1,4-Dichlorobenzene	NE 1.38400	1.63964 1.39934	1.49121 1.43248	1.51626 1.42707	1.47011	1.49485	AVRG		1.47277		5.23516	
Benzyl Chloride	NE 0.39135	0.43855 0.44029	0.35095 0.47061	0.36716 0.48435	0.33474	0.36186	AVRG		0.40443		13.62917	
n-Butylbenzene	NE 1.93301	2.09569 2.10694	1.88248 2.19365	1.73548 2.12379	1.99640	2.17139	AVRG		2.02654		7.49858	
1,2-Dichlorobenzene	NE 1.20556	1.25628 1.22245	1.27315 1.26196	1.17606 1.26277	1.33041	1.27128	AVRG		1.25110		3.57355	
1,2-Dibromo-3-Chloropropane	NE 25520	270 61674	348 99187	994 141749	2347	9850	QUAD	0.00789	19.55533	-15.65262	0.99973	*
1,2,4-Trichlorobenzene	NE 0.43214	0.45967 0.47716	0.38549 0.51475	0.41755 0.51794	0.44197	0.45194	AVRG		0.45540		9.50182	
Hexachlorobutadiene	NE 0.36108	0.50564 0.42134	0.40894 0.43716	0.38476 0.43414	0.40071	0.43144	AVRG		0.42058		9.64578	
Naphthalene	NE 0.46478	0.50994 0.51932	0.48404 0.57671	0.47311 0.61432	0.48572	0.45717	AVRG		0.50946		10.49645	
1,2,3-Trichlorobenzene	NE 0.23796	0.28871 0.26010	0.23370 0.29029	0.23930 0.30074	0.24443	0.24414	AVRG		0.25993		10.08886	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Ethyl Acetate	NE 0.37468	0.40866 0.36462	0.36149 0.36571	0.38433 0.37416	0.37402	0.38793	AVRG		0.37729		3.88483	
Methyl Acrylate	NE 0.41135	NE 0.42110	0.08197 0.42509	0.18205 0.42984	0.32449	0.34779	AVRG		0.32796		39.52952	*
n-Butanol	NE 92515	245 210846	576 347477	1120 481768	5230	31323	LINR	1.40108	0.00747		0.99785	*
Ethyl Acrylate	NE 1.02705	NE 1.03586	0.33536 1.03173	0.44170 1.03664	0.52229	0.97049	AVRG		0.80014		38.58861	*
Cyclohexanone	NE 0.01354	0.02999 0.01391	0.02591 0.01452	0.01565 0.01455	0.01586	0.01385	AVRG		0.01753		34.47473	*
1,4-Dioxane	0.00383 0.00352	0.00344 0.00359	0.00432 0.00382	0.00347 0.00389	0.00372	0.00373	AVRG		0.00373		6.94690	
n-Hexane	NE 0.38690	0.44005 0.45615	0.48427 0.45806	0.38126 0.43794	0.43490	0.47909	AVRG		0.43985		8.18722	
Freon TF	NE 0.37612	0.42449 0.41014	0.45970 0.40358	0.37786 0.38444	0.46969	0.44805	AVRG		0.41712		8.52239	
Methyl Acetate	NE 0.23356	0.25878 0.23289	0.22048 0.23995	0.22103 0.24622	0.21722	0.22389	AVRG		0.23267		5.92161	
Methylcyclohexane	NE 0.69515	0.67480 0.69631	0.68095 0.70106	0.62360 0.69110	0.60827	0.66355	AVRG		0.67053		4.96855	
Isopropyl alcohol	NE 225158	3316 475723	4535 762854	7686 1075115	21076	91055	LINR	0.58093	0.01644		0.99840	
Amyl alcohol	NE NE	NE NE	NE NE	0.00150 0.00580	0.00100	0.00119	AVRG		0.00237		96.60442	*

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Allyl alcohol	NE 0.01935	0.02200 0.02281	0.02421 0.02290	0.01906 0.02190	0.02175	0.02395	AVRG		0.02199		8.18722	
4-Methyl-2-pentanol	NE 0.03573	0.05681 0.04032	0.05065 0.04227	0.04072 0.04253	0.03508	0.03609	AVRG		0.04224		17.16161	*
Tert-butyl alcohol	NE 0.02887	0.03495 0.02931	0.03178 0.02975	0.02713 0.03113	0.03008	0.02915	AVRG		0.03024		7.32692	
Diethyl ether	NE 0.30552	0.35577 0.30995	0.38001 0.30402	0.32336 0.30495	0.30084	0.30367	AVRG		0.32090		8.75260	
1,3-Butadiene	NE 0.34821	0.41434 0.36545	0.39518 0.36900	0.35913 0.35842	0.42141	0.38099	AVRG		0.37913		6.82959	
Cyclohexane	NE 0.53317	0.60481 0.59663	0.62314 0.59826	0.52543 0.57664	0.60938	0.60593	AVRG		0.58593		5.87736	
alpha-Methylstyrene	NE 1.08513	1.07038 1.12750	1.08091 1.16571	0.96349 1.16247	1.14232	1.15146	AVRG		1.10549		5.83113	
Diisopropyl ether	NE 1.26380	1.39968 1.27752	1.86885 1.26796	1.23209 1.27650	1.19970	1.22713	AVRG		1.33480		15.58023	*
Dichlorofluoromethane	NE 0.83117	NE 0.83166	NE 0.79161	0.86084 0.78977	0.77145	0.83721	AVRG		0.81624		3.93915	*
Propylene oxide	NE 0.04772	0.08712 0.04576	0.10974 0.04255	0.03868 0.04249	0.05506	0.04912	AVRG		0.05758		42.17888	*
3-Methyl-1-butanol	NE 0.00447	NE 0.00494	NE 0.00549	0.00237 0.00565	0.00347	0.00444	AVRG		0.00440		26.26662	*
Butyl acrylate	NE 0.50164	0.30448 0.56732	0.59325 0.61418	0.42297 0.61867	0.44119	0.46640	AVRG		0.50334		20.95468	*

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,2,3-Trimethylbenzene	NE 2.31984	2.92740 2.29092	3.22779 2.27588	2.21255 2.25601	2.09670	2.30114	AVRG		2.43425		15.53604	*
Ethanol	NE 0.00232	NE 0.00216	0.00334 0.00200	0.00286 0.00196	0.00237	0.00232	AVRG		0.00242		19.26668	*
tert-Butyl formate	NE 0.22700	NE 0.22636	NE 0.23607	0.18272 0.24972	0.27854	0.22563	AVRG		0.23229		12.45420	*
3,3-Dimethyl-1-butanol	NE 0.01872	NE 0.01954	NE 0.02065	NE 0.02030	0.01892	0.01905	AVRG		0.01953		4.03874	*
tert-Amyl methyl ether	NE 1.39217	2.10676 1.38747	2.26865 1.41592	1.57527 1.40512	1.57965	1.34448	AVRG		1.60839		21.19632	*
tert-Butyl ethyl ether	NE 1.34295	1.74247 1.34765	1.95381 1.34309	1.30884 1.34382	1.28219	1.29607	AVRG		1.44010		16.55837	*
tert-Amyl alcohol	NE 0.02270	0.03356 0.02264	0.02895 0.02361	0.01827 0.02454	0.02785	0.02256	AVRG		0.02496		17.98305	*
Epichlorohydrin	NE 0.01961	0.02675 0.01958	0.02118 0.02021	NE 0.01986	0.01652	0.01783	AVRG		0.02019		14.96144	*
Isoprene	NE 0.14709	0.19912 0.15073	0.26507 0.14545	0.34024 0.14053	0.20189	0.16573	AVRG		0.19510		34.67071	*
n-Amyl acetate	NE 0.39560	NE 0.41555	NE 0.45595	NE 0.47052	0.44323	0.39671	AVRG		0.42959		7.35377	*
Isopropyl acetate	NE 0.75305	NE 0.74717	0.96396 0.75576	0.66183 0.76345	0.82124	0.74749	AVRG		0.77674		11.21768	*
n-Butyl acetate	NE 0.16576	0.27205 0.16246	0.23390 0.17091	0.20429 0.16666	0.19245	0.17604	AVRG		0.19384		19.29181	*

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

ICAL Start Date 19-JUL-2022 1127 **ICAL End Date** 19-JUL-2022 1456

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Acetaldehyde	NE 0.03193	NE 0.02386	0.05959 0.02374	0.05176 0.02405	0.03872	0.03091	AVRG		0.03557		38.21836	*
Methyl Amyl Ketone	NE 0.46461	0.23961 0.50221	0.44401 0.52577	0.33336 0.52518	0.41392	0.43757	AVRG		0.43180		21.77319	*
Dimethyl Disulfide	NE 0.67315	0.69299 0.70100	0.77600 0.71236	0.57117 0.70344	0.54730	0.62588	AVRG		0.66703		10.90625	
1,2-Dichloroethylene (total)	NE 0.47168	0.47474 0.46828	0.48149 0.47130	0.41258 0.47052	0.49952	0.46616	AVRG		0.46847		4.96279	
Xylenes (total)	NE 0.53624	0.51161 0.55294	0.53945 0.56412	0.49606 0.54437	0.57109	0.56990	AVRG		0.54286		4.74421	
Dibromofluoromethane	NE 346983	4991 746005	9308 1092576	18364 1508056	40606	142500	LINR	-0.01456	0.46506		0.99958	
1,2-Dichloroethane-d4	NE 382235	5362 809230	8675 1212903	15130 1659515	40441	154444	LINR	-0.00656	0.51338		0.99986	
Toluene-d8	NE 1.21663	1.45682 1.22523	1.25577 1.14163	1.35456 1.15509	1.16759	1.25429	AVRG		1.24751		8.16353	
4-Bromofluorobenzene	NE 453323	6586 977060	11894 1441404	19061 1974506	56818	180100	LINR	-0.01650	0.43895		0.99984	

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Form 6I

Initial Calibration Verification (ICV)

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachlor	50.00	48.60	97.20	80-120	
1,1,1-Trichloroeth	50.00	47.27	94.55	80-120	
1,1,2,2-Tetrachlor	50.00	47.91	95.82	80-120	
Freon TF	50.00	47.39	94.80	80-120	
Methyl Acetate	50.00	48.74	97.49	80-120	
Cyclohexane	50.00	49.16	98.32	80-120	
Methylcyclohexane	50.00	49.18	98.36	80-120	
Carbon Disulfide	100.00	94.16	94.17	80-120	
2-Hexanone	100.00	104.32	104.33	80-120	
1,1,2-Trichloroeth	50.00	47.73	95.46	80-120	
1,1-Dichloroethane	50.00	46.55	93.12	80-120	
1,1-Dichloroethene	50.00	45.69	91.38	80-120	
1,1-Dichloropropen	50.00	47.92	95.85	80-120	
1,2,3-Trichloroben	50.00	58.54	117.10	80-120	
1,2,3-Trichloropro	50.00	46.25	92.50	80-120	
1,2,4-Trichloroben	50.00	56.47	112.95	80-120	
1,2,4-Trimethylben	50.00	48.76	97.53	80-120	
1,2-Dibromo-3-Chlo	50.00	54.31	108.62	80-120	
1,2-Dibromoethane	50.00	49.55	99.12	80-120	
1,2-Dichlorobenzen	50.00	49.77	99.55	80-120	
1,2-Dichloroethane	50.00	47.21	94.43	80-120	
1,2-Dichloropropan	50.00	47.16	94.33	80-120	
1,3,5-Trimethylben	50.00	47.69	95.39	80-120	
1,3-Dichlorobenzen	50.00	49.18	98.38	80-120	
1,3-Dichloropropan	50.00	48.03	96.07	80-120	
1,4-Dichlorobenzen	50.00	48.10	96.21	80-120	
1-Chlorohexane	50.00	47.00	94.02	80-120	
2,2-Dichloropropan	50.00	48.90	97.81	80-120	
2-Butanone	100.00	106.54	106.54	80-120	
2-Chlorotoluene	50.00	45.50	91.01	80-120	
4-Chlorotoluene	50.00	47.59	95.20	80-120	
p-Isopropyltoluene	50.00	48.81	97.64	80-120	
4-Methyl-2-Pentano	100.00	101.12	101.12	80-120	
Acetone	100.00	117.86	117.87	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
Acetonitrile	50.00	464.45	928.91*	80-120	
Benzene	50.00	46.73	93.48	80-120	
Bromobenzene	50.00	48.10	96.21	80-120	
Bromochloromethane	50.00	46.01	92.02	80-120	
Bromodichlorometha	50.00	48.71	97.43	80-120	
Bromoform	50.00	48.27	96.55	80-120	
Bromomethane	50.00	48.45	96.92	80-120	
Carbon Tetrachlori	50.00	45.89	91.79	80-120	
Chlorobenzene	50.00	48.25	96.51	80-120	
Chloroethane	50.00	46.05	92.11	80-120	
Chloroform	50.00	47.08	94.16	80-120	
Chloromethane	50.00	47.90	95.81	80-120	
cis-1,2-Dichloroet	50.00	48.42	96.85	80-120	
cis-1,3-Dichloropr	50.00	50.10	100.21	80-120	
Dibromochlorometha	50.00	49.75	99.50	80-120	
Dibromomethane	50.00	48.27	96.55	80-120	
Dichlorodifluorome	50.00	49.07	98.16	80-120	
Ethylbenzene	50.00	48.53	97.07	80-120	
Hexachlorobutadien	50.00	51.08	102.17	80-120	
Isopropylbenzene	50.00	48.21	96.42	80-120	
m,p-Xylenes	100.00	99.09	99.09	80-120	
Methyl tert-butyl	50.00	46.68	93.37	80-120	
Methylene Chloride	50.00	47.96	95.92	80-120	
n-Butylbenzene	50.00	50.58	101.18	80-120	
n-Propylbenzene	50.00	48.36	96.73	80-120	
Naphthalene	50.00	59.28	118.57	80-120	
o-Xylene	50.00	48.22	96.45	80-120	
sec-Butylbenzene	50.00	47.71	95.44	80-120	
Styrene	50.00	50.47	100.96	80-120	
tert-Butylbenzene	50.00	47.36	94.73	80-120	
Tetrachloroethene	50.00	47.11	94.22	80-120	
Toluene	50.00	47.23	94.48	80-120	
trans-1,2-Dichloro	50.00	47.08	94.17	80-120	
trans-1,3-Dichloro	50.00	50.76	101.54	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_413360

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 19-JUL-2022
Lab File ID X071915.D ICAL Time 1353
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
Trichloroethene	50.00	47.65	95.31	80-120	
Trichlorofluoromet	50.00	47.02	94.04	80-120	
Vinyl Chloride	50.00	45.66	91.34	80-120	
1,2-Dichloroethyle	50.00	95.51	191.02*	80-120	
Xylenes (total)	150.00	147.31	98.21	80-120	
Tert-butyl alcohol	1000.00	983.68	98.37	80-120	
Dibromofluorometha	50.00	51.93	103.87	80-120	
1,2-Dichloroethane	50.00	50.89	101.79	80-120	
Toluene-d8	50.00	50.01	100.04	80-120	
4-Bromofluorobenze	50.00	52.16	104.34	80-120	
Dibromofluorometha	50.00	51.93	103.87	0-130	
1,2-Dichloroethane	50.00	50.89	101.79	0-130	
Toluene-d8	50.00	50.01	100.04	0-130	
4-Bromofluorobenze	50.00	52.16	104.34	0-130	

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Form 7

Continuing Calibration Verification (CCV)

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_414932

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 11-AUG-2022 1110
Lab File ID X081103.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dibromofluoromethane	50.0	54.65168	0.51510	0.100	-9.30336	20.0	Linear	
1,2-Dichloroethane-d4	50.0	54.73014	0.56532	0.100	-9.46029	20.0	Linear	
Toluene-d8	1.24751	1.29175	1.29175	0.100	-3.54637	20.0	Averaged	
4-Bromofluorobenzene	50.0	52.82721	0.47101	0.100	-5.65443	20.0	Linear	
1,1,1,2-Tetrachloroethane	0.35128	0.38362	0.38362	0.100	-9.20609	20.0	Averaged	
1,1,1-Trichloroethane	0.70930	0.79243	0.79243	0.100	-11.71896	20.0	Averaged	
1,1,2,2-Tetrachloroethane	0.70224	0.74434	0.74434	0.300	-5.99549	20.0	Averaged	
1,1,2-Trichloroethane	0.25708	0.26641	0.26641	0.100	-3.63156	20.0	Averaged	
1,1-Dichloroethane	0.76975	0.85637	0.85637	0.200	-11.25297	20.0	Averaged	
1,1-Dichloroethene	0.41738	0.41869	0.41869	0.100	-0.31413	20.0	Averaged	
1,1-Dichloropropene	0.40353	0.45224	0.45224	0.100	-12.06928	20.0	Averaged	
1,2,3-Trichlorobenzene	0.25993	0.28966	0.28966	0.010	-11.43743	20.0	Averaged	
1,2,3-Trichloropropane	0.54144	0.55276	0.55276	0.100	-2.09028	20.0	Averaged	
1,2,4-Trichlorobenzene	0.45540	0.51588	0.51588	0.100	-13.28096	20.0	Averaged	
1,2,4-Trimethylbenzene	2.39836	2.70744	2.70744	0.100	-12.88706	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	57.18432	0.06107	0.040	-14.36864	20.0	Quadratic	
1,2-Dibromoethane	0.32596	0.34750	0.34750	0.100	-6.60917	20.0	Averaged	
1,2-Dichlorobenzene	1.25110	1.37634	1.37634	0.400	-10.01005	20.0	Averaged	
1,2-Dichloroethane	0.43851	0.46276	0.46276	0.100	-5.52927	20.0	Averaged	
1,2-Dichloropropane	0.30776	0.33148	0.33148	0.100	-7.70732	20.0	Averaged	
1,3,5-Trimethylbenzene	2.42869	2.71876	2.71876	0.100	-11.94338	20.0	Averaged	
1,3-Dichlorobenzene	1.38727	1.51970	1.51970	0.600	-9.54622	20.0	Averaged	
1,3-Dichloropropane	0.52292	0.55274	0.55274	0.100	-5.70163	20.0	Averaged	
1,4-Dichlorobenzene	1.47277	1.57802	1.57802	0.400	-7.14630	20.0	Averaged	
2,2-Dichloropropane	50.0	56.96788	0.77845	0.100	-13.93576	20.0	Linear	
2-Butanone	0.12543	0.14345	0.14345	0.100	-14.36180	20.0	Averaged	
2-Chlorotoluene	2.14319	2.26293	2.26293	0.100	-5.58734	20.0	Averaged	
2-Hexanone	0.15722	0.17511	0.17511	0.100	-11.37513	20.0	Averaged	
4-Chlorotoluene	2.39217	2.60515	2.60515	0.100	-8.90289	20.0	Averaged	
p-Isopropyltoluene	2.43888	2.82057	2.82057	0.100	-15.65032	20.0	Averaged	
4-Methyl-2-Pentanone	0.24363	0.27220	0.27220	0.100	-11.72597	20.0	Averaged	
Acetone	100	101	0.10673	0.100	-1.43567	20.0	Linear	
Benzene	1.18481	1.26602	1.26602	0.500	-6.85469	20.0	Averaged	
Bromobenzene	0.85388	0.91888	0.91888	0.100	-7.61198	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder
HS22080499

RunID
VOA6_414932

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 11-AUG-2022 1110
Lab File ID X081103.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Bromochloromethane	0.28191	0.29458	0.29458	0.100	-4.49439	20.0	Averaged	
Bromodichloromethane	0.42227	0.46030	0.46030	0.200	-9.00516	20.0	Averaged	
Bromoform	50.0	51.58742	0.25028	0.100	-3.17484	20.0	Linear	
Bromomethane	50.0	53.35380	0.36388	0.100	-6.70760	20.0	Linear	
Carbon Disulfide	1.10497	1.19547	1.19547	0.100	-8.18968	20.0	Averaged	
Carbon Tetrachloride	0.43130	0.46473	0.46473	0.100	-7.75114	20.0	Averaged	
Chlorobenzene	0.94805	1.01859	1.01859	0.500	-7.44052	20.0	Averaged	
Chloroethane	0.32070	0.36339	0.36339	0.100	-13.31308	20.0	Averaged	
Chloroform	0.84337	0.90932	0.90932	0.200	-7.81984	20.0	Averaged	
Chloromethane	50.0	58.15895	0.53855	0.100	-16.31790	20.0	Linear	
cis-1,2-Dichloroethene	0.49709	0.55145	0.55145	0.100	-10.93513	20.0	Averaged	
cis-1,3-Dichloropropene	0.51870	0.57512	0.57512	0.200	-10.87851	20.0	Averaged	
Dibromochloromethane	0.37111	0.39856	0.39856	0.100	-7.39838	20.0	Averaged	
Dibromomethane	0.20649	0.21767	0.21767	0.100	-5.41547	20.0	Averaged	
Dichlorodifluoromethane	50.0	59.88374	0.57017	0.100	-19.76747	20.0	Linear	
Ethylbenzene	0.47892	0.52580	0.52580	0.100	-9.78865	20.0	Averaged	
Hexachlorobutadiene	0.42058	0.45473	0.45473	0.100	-8.12041	20.0	Averaged	
Isopropylbenzene	1.44020	1.61822	1.61822	0.100	-12.36134	20.0	Averaged	
m,p-Xylenes	0.59570	0.66171	0.66171	0.100	-11.08069	20.0	Averaged	
Methylene Chloride	50.0	56.41739	0.51775	0.100	-12.83477	20.0	Linear	
n-Butylbenzene	2.02654	2.43066	2.43066	0.500	-19.94147	20.0	Averaged	
n-Propylbenzene	3.29846	3.78401	3.78401	0.100	-14.72033	20.0	Averaged	
Naphthalene	0.50946	0.58868	0.58868	0.200	-15.55141	20.0	Averaged	
o-Xylene	0.57911	0.62604	0.62604	0.300	-8.10421	20.0	Averaged	
sec-Butylbenzene	2.81866	3.23733	3.23733	0.100	-14.85355	20.0	Averaged	
Styrene	0.95366	1.06230	1.06230	0.300	-11.39213	20.0	Averaged	
tert-Butylbenzene	2.05841	2.29041	2.29041	0.100	-11.27048	20.0	Averaged	
Tetrachloroethene	0.32423	0.34068	0.34068	0.200	-5.07458	20.0	Averaged	
Toluene	1.40552	1.49636	1.49636	0.400	-6.46322	20.0	Averaged	
trans-1,2-Dichloroethene	0.43986	0.48639	0.48639	0.100	-10.57879	20.0	Averaged	
trans-1,3-Dichloropropene	0.42957	0.48745	0.48745	0.100	-13.47398	20.0	Averaged	
Trichloroethene	0.35097	0.37603	0.37603	0.200	-7.13987	20.0	Averaged	
Trichlorofluoromethane	0.78735	0.82976	0.82976	0.100	-5.38650	20.0	Averaged	
Vinyl Chloride	0.52429	0.54287	0.54287	0.100	-3.54340	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder HS22080499

RunID VOA6_414932

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 11-AUG-2022 2038
Lab File ID X081130.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dibromofluoromethane	50.0	55.28431	0.52098	0.100	-10.56863	50.0	Linear	
1,2-Dichloroethane-d4	50.0	55.18143	0.56995	0.100	-10.36286	50.0	Linear	
Toluene-d8	1.24751	1.25464	1.25464	0.100	-0.57146	50.0	Averaged	
4-Bromofluorobenzene	50.0	50.95821	0.45460	0.100	-1.91641	50.0	Linear	
1,1,1,2-Tetrachloroethane	0.35128	0.36721	0.36721	0.100	-4.53479	50.0	Averaged	
1,1,1-Trichloroethane	0.70930	0.78359	0.78359	0.100	-10.47281	50.0	Averaged	
1,1,2,2-Tetrachloroethane	0.70224	0.68814	0.68814	0.300	2.00659	50.0	Averaged	
1,1,2-Trichloroethane	0.25708	0.25914	0.25914	0.100	-0.80369	50.0	Averaged	
1,1-Dichloroethane	0.76975	0.83478	0.83478	0.200	-8.44838	50.0	Averaged	
1,1-Dichloroethene	0.41738	0.41043	0.41043	0.100	1.66487	50.0	Averaged	
1,1-Dichloropropene	0.40353	0.43035	0.43035	0.100	-6.64391	50.0	Averaged	
1,2,3-Trichlorobenzene	0.25993	0.22719	0.22719	0.010	12.59460	50.0	Averaged	
1,2,3-Trichloropropane	0.54144	0.55044	0.55044	0.100	-1.66187	50.0	Averaged	
1,2,4-Trichlorobenzene	0.45540	0.43447	0.43447	0.100	4.59602	50.0	Averaged	
1,2,4-Trimethylbenzene	2.39836	2.53009	2.53009	0.100	-5.49270	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	44.41397	0.04677	0.040	11.17207	50.0	Quadratic	
1,2-Dibromoethane	0.32596	0.33126	0.33126	0.100	-1.62454	50.0	Averaged	
1,2-Dichlorobenzene	1.25110	1.26284	1.26284	0.400	-0.93813	50.0	Averaged	
1,2-Dichloroethane	0.43851	0.45652	0.45652	0.100	-4.10666	50.0	Averaged	
1,2-Dichloropropane	0.30776	0.31548	0.31548	0.100	-2.51092	50.0	Averaged	
1,3,5-Trimethylbenzene	2.42869	2.57028	2.57028	0.100	-5.82975	50.0	Averaged	
1,3-Dichlorobenzene	1.38727	1.41933	1.41933	0.600	-2.31074	50.0	Averaged	
1,3-Dichloropropane	0.52292	0.52467	0.52467	0.100	-0.33438	50.0	Averaged	
1,4-Dichlorobenzene	1.47277	1.45779	1.45779	0.400	1.01718	50.0	Averaged	
2,2-Dichloropropane	50.0	52.03600	0.71135	0.100	-4.07201	50.0	Linear	
2-Butanone	0.12543	0.13102	0.13102	0.100	-4.45552	50.0	Averaged	
2-Chlorotoluene	2.14319	2.13765	2.13765	0.100	0.25833	50.0	Averaged	
2-Hexanone	0.15722	0.15820	0.15820	0.100	-0.62344	50.0	Averaged	
4-Chlorotoluene	2.39217	2.45447	2.45447	0.100	-2.60400	50.0	Averaged	
p-Isopropyltoluene	2.43888	2.61437	2.61437	0.100	-7.19592	50.0	Averaged	
4-Methyl-2-Pentanone	0.24363	0.25280	0.25280	0.100	-3.76186	50.0	Averaged	
Acetone	100	97.58163	0.10290	0.100	2.41837	50.0	Linear	
Benzene	1.18481	1.21329	1.21329	0.500	-2.40415	50.0	Averaged	
Bromobenzene	0.85388	0.87326	0.87326	0.100	-2.26940	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP/Site 18 /24

Workorder
HS22080499

RunID
VOA6_414932

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 11-AUG-2022 2038
Lab File ID X081130.D ICAL Date(s) 19-JUL-2022 19-JUL-2022
Analysis Type WATER ICAL Times 1127 1456
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Bromochloromethane	0.28191	0.28305	0.28305	0.100	-0.40159	50.0	Averaged	
Bromodichloromethane	0.42227	0.43717	0.43717	0.200	-3.52905	50.0	Averaged	
Bromoform	50.0	47.40714	0.22951	0.100	5.18573	50.0	Linear	
Bromomethane	50.0	51.14877	0.34922	0.100	-2.29754	50.0	Linear	
Carbon Disulfide	1.10497	1.11311	1.11311	0.100	-0.73587	50.0	Averaged	
Carbon Tetrachloride	0.43130	0.44028	0.44028	0.100	-2.08348	50.0	Averaged	
Chlorobenzene	0.94805	0.97203	0.97203	0.500	-2.52929	50.0	Averaged	
Chloroethane	0.32070	0.31439	0.31439	0.100	1.96869	50.0	Averaged	
Chloroform	0.84337	0.90912	0.90912	0.200	-7.79598	50.0	Averaged	
Chloromethane	50.0	48.24126	0.44663	0.100	3.51748	50.0	Linear	
cis-1,2-Dichloroethene	0.49709	0.54237	0.54237	0.100	-9.10790	50.0	Averaged	
cis-1,3-Dichloropropene	0.51870	0.53422	0.53422	0.200	-2.99339	50.0	Averaged	
Dibromochloromethane	0.37111	0.37666	0.37666	0.100	-1.49482	50.0	Averaged	
Dibromomethane	0.20649	0.20992	0.20992	0.100	-1.66303	50.0	Averaged	
Dichlorodifluoromethane	50.0	40.43380	0.38552	0.100	19.13240	50.0	Linear	
Ethylbenzene	0.47892	0.50558	0.50558	0.100	-5.56681	50.0	Averaged	
Hexachlorobutadiene	0.42058	0.40763	0.40763	0.100	3.07901	50.0	Averaged	
Isopropylbenzene	1.44020	1.53655	1.53655	0.100	-6.69033	50.0	Averaged	
m,p-Xylenes	0.59570	0.63459	0.63459	0.100	-6.52882	50.0	Averaged	
Methylene Chloride	50.0	54.52896	0.50068	0.100	-9.05792	50.0	Linear	
n-Butylbenzene	2.02654	2.18955	2.18955	0.500	-8.04385	50.0	Averaged	
n-Propylbenzene	3.29846	3.56114	3.56114	0.100	-7.96370	50.0	Averaged	
Naphthalene	0.50946	0.42681	0.42681	0.200	16.22220	50.0	Averaged	
o-Xylene	0.57911	0.60195	0.60195	0.300	-3.94553	50.0	Averaged	
sec-Butylbenzene	2.81866	2.98355	2.98355	0.100	-5.84999	50.0	Averaged	
Styrene	0.95366	0.99955	0.99955	0.300	-4.81242	50.0	Averaged	
tert-Butylbenzene	2.05841	2.16435	2.16435	0.100	-5.14652	50.0	Averaged	
Tetrachloroethene	0.32423	0.32821	0.32821	0.200	-1.23013	50.0	Averaged	
Toluene	1.40552	1.43420	1.43420	0.400	-2.04065	50.0	Averaged	
trans-1,2-Dichloroethene	0.43986	0.47241	0.47241	0.100	-7.40125	50.0	Averaged	
trans-1,3-Dichloropropene	0.42957	0.45057	0.45057	0.100	-4.88874	50.0	Averaged	
Trichloroethene	0.35097	0.36252	0.36252	0.200	-3.29062	50.0	Averaged	
Trichlorofluoromethane	0.78735	0.80059	0.80059	0.100	-1.68144	50.0	Averaged	
Vinyl Chloride	0.52429	0.48275	0.48275	0.100	7.92388	50.0	Averaged	

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Form 8

Internal Standard Area and RT Summary

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

RunID
VOA6_414932

		IS1		IS2		IS3		IS4	
Sample ID	File ID	Area	RT	Area	RT	Area	RT	Area	RT
12-HOUR STD (CCV)	X081103	606308 #	4.19 #	912569 #	4.97 #	852798 #	7.67 #	419644 #	9.66 #
CCB	X081104	695996	4.19	976548	4.97	838888	7.68	354216	9.67
VLCSW-220811	X081105	583274	4.19	873927	4.97	811653	7.67	391164	9.67
VBLKW-220811	X081107	679155	4.19	967095	4.97	826020	7.67	348323	9.67
HS22080499-09	X081108	682163	4.19	959015	4.97	847765	7.67	371220	9.67
ZZZZZZMS	X081114	664479	4.19	957035	4.97	840559	7.67	403245	9.67
ZZZZZZMSD	X081115	676677	4.19	957979	4.97	832744	7.67	382896	9.66
HS22080499-01	X081118	663127	4.19	951985	4.97	822503	7.67	358538	9.67
HS22080499-03	X081119	658982	4.19	948829	4.97	821238	7.67	348607	9.67
HS22080499-05	X081120	663291	4.19	935190	4.97	813029	7.67	344207	9.67
HS22080499-06	X081121	675779	4.19	951411	4.97	836805	7.67	358817	9.67
HS22080499-07	X081122	662275	4.19	944289	4.97	828159	7.67	356513	9.67
CCV-END	X081130	569313	4.19	882986	4.97	830230	7.67	408946	9.66

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

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Analysis Run Log

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

RunID
VOA6_413360

Instrument ID VOA6 **Matrix** R413360 **Start Date** 07/19/2022 **EndDate** 07/19/2022

Client Sample ID	Type	Lab Sample ID	DF	Analysis Date	File ID
BFB	TUNE	BFB	1	07/19/22 11:06	X071901.D
VSTD000.25	ICAL1	VSTD000.25	1	07/19/22 11:27	X071902.D
VSTD000.5	ICAL2	VSTD000.5	1	07/19/22 12:08	X071903.D
VSTD001	ICAL3	VSTD001	1	07/19/22 12:29	X071904.D
VSTD002	ICAL4	VSTD002	1	07/19/22 12:50	X071905.D
VSTD005	ICAL5	VSTD005	1	07/19/22 13:11	X071906.D
VSTD020	ICAL6	VSTD020	1	07/19/22 13:32	X071907.D
VSTD050	ICAL7	VSTD050	1	07/19/22 13:53	X071908.D
VSTD100	ICAL8	VSTD100	1	07/19/22 14:14	X071909.D
VSTD150	ICAL9	VSTD150	1	07/19/22 14:35	X071910.D
VSTD200	ICAL	VSTD200	1	07/19/22 14:56	X071911.D
CCV	ICV	CCV	1	07/19/22 16:20	X071915.D

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP/Site 18 /24

Workorder
HS22080499

Volatiles Organics by Method 8260C

RunID
VOA6_414932

Instrument ID VOA6 **Matrix** R414932 **Start Date** 08/11/2022 **EndDate** 08/11/2022

Client Sample ID	Type	Lab Sample ID	DF	Analysis Date	File ID
BFB	TUNE	BFB	1	08/11/22 10:28	X081101.D
CCV	CCV	CCV	1	08/11/22 11:10	X081103.D
CCB	CCB	CCB	1	08/11/22 11:31	X081104.D
VLCSW-220811	LCS	VLCSW-220811	1	08/11/22 11:52	X081105.D
VBLKW-220811	MBLK	VBLKW-220811	1	08/11/22 12:34	X081107.D
Trip Blank	SAMP	HS22080499-09	1	08/11/22 12:55	X081108.D
ZZZZZZZZZZ	SAMP	HS22080522-12	1	08/11/22 13:16	X081109.D
ZZZZZZZZZZ	SAMP	HS22080522-05	5	08/11/22 13:37	X081110.D
ZZZZZZZZZZ	SAMP	HS22080522-01	25	08/11/22 13:58	X081111.D
ZZZZZZZZZZ	SAMP	HS22080522-02	25	08/11/22 14:19	X081112.D
ZZZZZZZZZZ	SAMP	HS22080522-05	50	08/11/22 14:40	X081113.D
ZZZZZZMS	MS	HS22080522-05MS	50	08/11/22 15:01	X081114.D
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ZZZZZZZZZZ	SAMP	HS22080522-02	1000	08/11/22 16:04	X081117.D
MW5_080922	SAMP	HS22080499-01	1	08/11/22 16:26	X081118.D
18CPTMW08SW_080922	SAMP	HS22080499-03	1	08/11/22 16:47	X081119.D
MW19_080922	SAMP	HS22080499-05	1	08/11/22 17:08	X081120.D
MW10_080922	SAMP	HS22080499-06	1	08/11/22 17:29	X081121.D
18WW10_080922	SAMP	HS22080499-07	1	08/11/22 17:50	X081122.D
ZZZZZZZZZZ	SAMP	HS22080522-03	1	08/11/22 18:11	X081123.D
ZZZZZZZZZZ	SAMP	HS22080522-06	1	08/11/22 18:32	X081124.D
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ZZZZZZZZZZ	SAMP	HS22080522-09	1	08/11/22 19:14	X081126.D
ZZZZZZZZZZ	SAMP	HS22080522-11	1	08/11/22 19:35	X081127.D
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CCV-END	CCV_END	CCV-END	1	08/11/22 20:38	X081130.D

right solutions.
right partner.

Raw Data VOA6 413360

Volatiles Organics by Method 8260C

Workorder

HS22080499

Client

Bhate Environmental Associates, Inc.

Project

LHAAP/Site 18 /24

08/19/2022

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 19-JUL-2022 11:06
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : HS22052000V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\bfb.m
Meth Date : 14-Jun-2022 12:47 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
8.698	8.889	(0.000)	95	32320			0.00- 100.00	100.00
8.698	8.889	(0.000)	50	5179			15.00- 40.00	16.02
8.698	8.889	(0.000)	75	16180			30.00- 60.00	50.06
8.698	8.889	(0.000)	96	2034			5.00- 9.00	6.29
8.698	8.889	(0.000)	173	170			0.00- 2.00	0.53
8.698	8.889	(0.000)	174	32248			50.00- 0.00	99.78
8.698	8.889	(0.000)	175	2068			5.00- 9.00	6.41
8.698	8.889	(0.000)	176	32048			95.00- 101.00	99.38
8.698	8.889	(0.000)	177	1757			5.00- 9.00	5.48

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.02
75	30.00 - 60.00% of mass 95	50.06
96	5.00 - 9.00% of mass 95	6.29
173	Less than 2.00% of mass 174	0.53 (0.53)
174	Greater than 50.00% of mass 95	99.78
175	5.00 - 9.00% of mass 174	6.40 (6.41)
176	95.00 - 101.00% of mass 174	99.16 (99.38)
177	5.00 - 9.00% of mass 176	5.44 (5.48)

Data File: X071901.D
Spectrum: Scan 2165 (8.70)
Location of Maximum: 95.00
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	403	61.90	879	87.90	1444	128.80	207
37.10	1658	63.00	1157	90.90	136	129.80	301
38.10	1647	64.00	301	92.00	847	137.00	117
39.00	908	65.00	56	93.10	1045	139.00	107
40.10	707	65.80	80	94.00	3846	141.00	494
41.00	93	67.00	143	95.00	32320	141.90	76
44.00	900	68.00	3426	96.00	2034	142.90	211
45.00	387	69.10	3149	97.00	70	147.80	82
47.10	310	70.10	316	103.70	114	149.70	61
47.80	125	71.90	395	104.10	107	155.10	64
48.30	97	72.90	1771	104.80	86	156.80	105
49.00	1195	74.00	5297	105.90	90	170.00	130
50.00	5179	75.00	16180	106.60	55	172.90	170
51.00	1985	76.00	1271	109.10	59	173.90	32248
52.20	111	77.00	406	109.90	93	175.00	2068
54.90	93	77.90	329	112.80	52	175.90	32048
56.10	488	78.90	1240	115.90	314	177.00	1757
56.90	1104	79.80	364	116.80	350	177.90	82
58.00	145	80.90	1270	118.00	96	186.10	221
60.00	255	81.90	202	118.80	198	262.00	64
61.00	1500	86.90	1378	128.00	111		

Data File: \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D Page 1

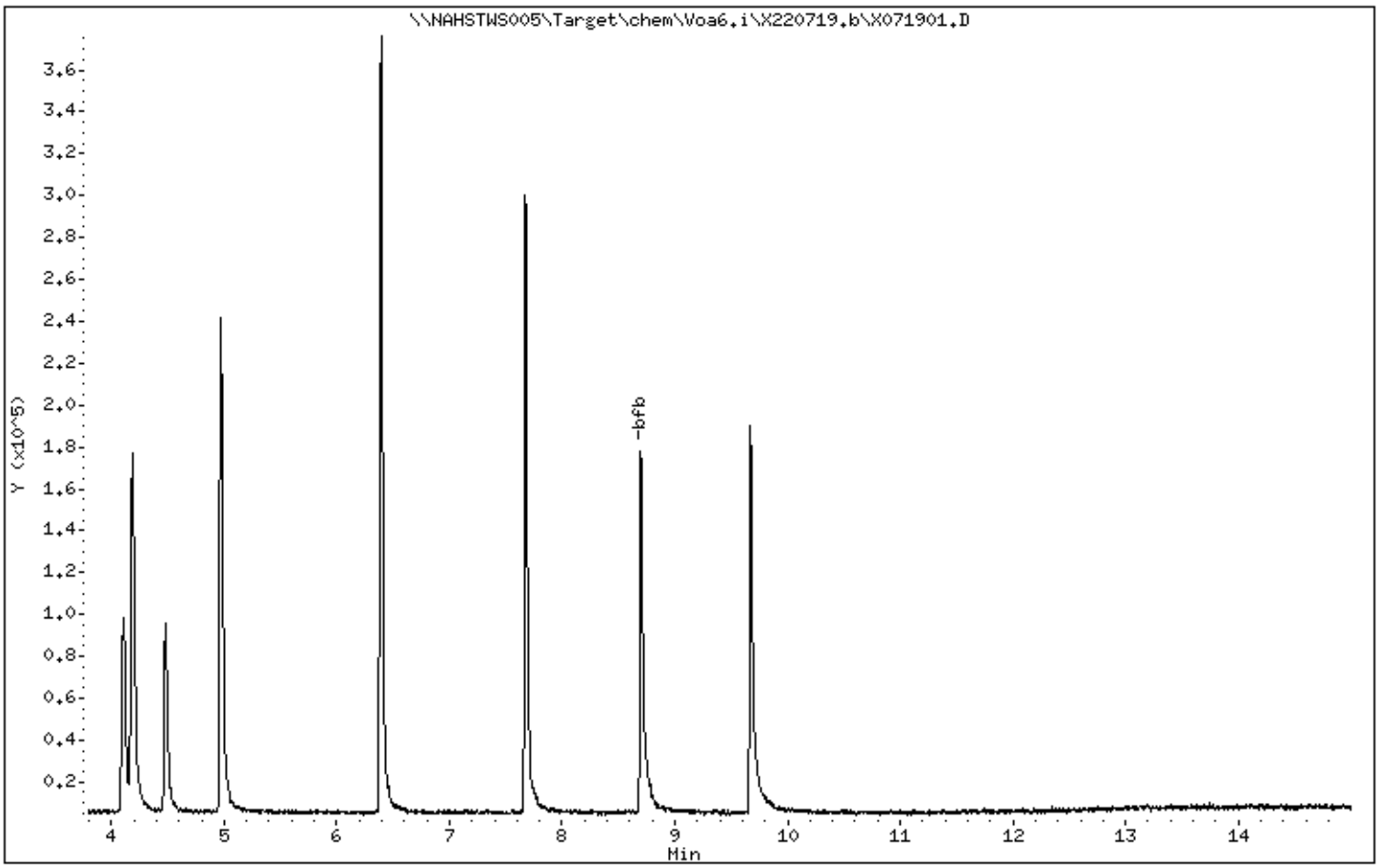
Date : 19-JUL-2022 11:06

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\X220719.b\X071901.D Page 2

Date : 19-JUL-2022 11:06

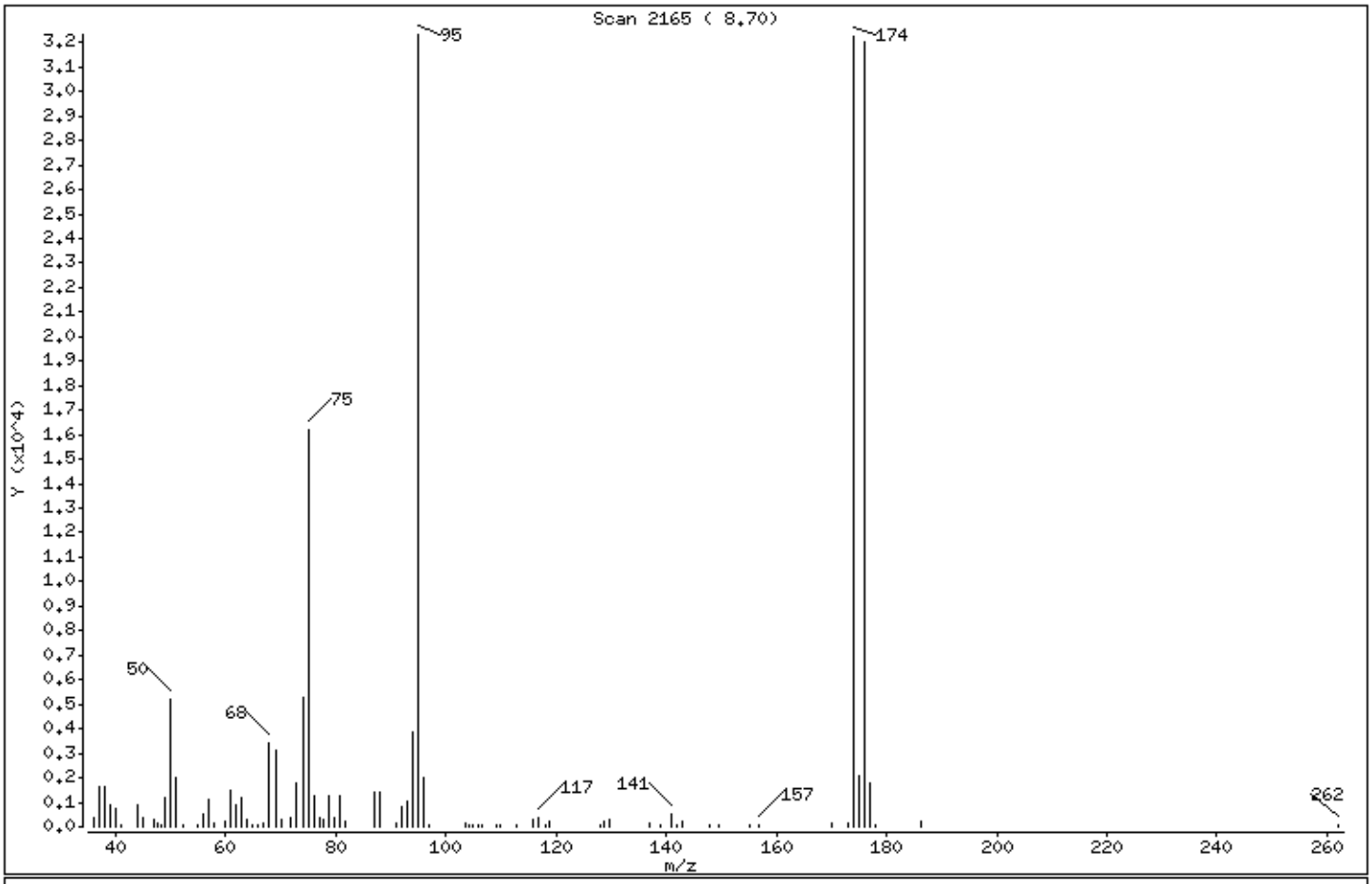
Client ID: BFB Instrument: voa6.i

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	16.02
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176	95.00 - 101.00% of mass 174	99.16 (99.38)
177	5.00 - 9.00% of mass 176	5.44 (5.48)

Data File: \\NAHSTWS005\Target\chem\Voa6.i\X220719.b\X071901.D

Date : 19-JUL-2022 11:06

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: X071901.D
Spectrum: Scan 2165 (8.70)
Location of Maximum: 95.00
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	403	61.90	879	87.90	1444	128.80	207
37.10	1658	63.00	1157	90.90	136	129.80	301
38.10	1647	64.00	301	92.00	847	137.00	117
39.00	908	65.00	56	93.10	1045	139.00	107
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41.00	93	67.00	143	95.00	32320	141.90	76
44.00	900	68.00	3426	96.00	2034	142.90	211
45.00	387	69.10	3149	97.00	70	147.80	82
47.10	310	70.10	316	103.70	114	149.70	61
47.80	125	71.90	395	104.10	107	155.10	64
48.30	97	72.90	1771	104.80	86	156.80	105
49.00	1195	74.00	5297	105.90	90	170.00	130
50.00	5179	75.00	16180	106.60	55	172.90	170
51.00	1985	76.00	1271	109.10	59	173.90	32248
52.20	111	77.00	406	109.90	93	175.00	2068
54.90	93	77.90	329	112.80	52	175.90	32048
56.10	488	78.90	1240	115.90	314	177.00	1757
56.90	1104	79.80	364	116.80	350	177.90	82
58.00	145	80.90	1270	118.00	96	186.10	221
60.00	255	81.90	202	118.80	198	262.00	64
61.00	1500	86.90	1378	128.00	111		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D Page 1
Report Date: 19-Aug-2022 10:59

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 19-JUL-2022 11:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 10:59 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 14:56 Cal File: X071911.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	835764	50.0000	
* 36 1,4-Difluorobenzene	114	4.969	4.969	(1.000)	1243619	50.0000	
* 47 Chlorobenzene-d5	117	7.675	7.675	(1.000)	1125944	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	516358	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	2821	0.25000	(a)
$ 35 1,2-Dichloroethane-d4	65	4.489	4.489	(1.073)	3098	0.25000	0.03(aM)
$ 48 Toluene-d8	98	6.404	6.404	(0.834)	8187	0.25000	0.29(aM)
$ 69 4-Bromofluorobenzene	95	8.717	8.717	(1.136)	4127	0.25000	(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.013)	2061	0.25000	0.26(a)
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.978)	2586	0.25000	0.21(a)
68 1,1,2,2-Tetrachloroethane	83	8.852	8.852	(0.916)	2066	0.25000	0.28(aM)
53 1,1,2-Trichloroethane	83	6.854	6.854	(0.893)	1586	0.25000	0.27(a)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	3255	0.25000	0.25(Ta)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	1876	0.25000	0.26(a)
32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	3123	0.25000	0.31(a)
93 1,2,3-Trichlorobenzene	180	11.791	11.791	(1.220)	365	0.25000	0.13(aM)
71 1,2,3-Trichloropropane	75	8.878	8.878	(0.919)	898	0.25000	0.16(a)
90 1,2,4-Trichlorobenzene	180	11.427	11.427	(1.182)	737	0.25000	0.15(aM)
79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	5841	0.25000	0.23(a)
57 1,2-Dibromoethane	107	7.281	7.281	(0.949)	1909	0.25000	0.26(a)

88 1,2-Dichlorobenzene	146	10.018	10.018 (1.036)	2967	0.25000	0.22(a)
33 1,2-Dichloroethane	62	4.571	4.571 (0.920)	2679	0.25000	0.24(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D Page 2
Report Date: 19-Aug-2022 10:59

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.452	5.452	(1.097)	1860	0.25000	0.24(a)
75	1,3,5-Trimethylbenzene	105	9.081	9.081	(0.940)	5704	0.25000	0.22(a)
83	1,3-Dichlorobenzene	146	9.617	9.617	(0.995)	3278	0.25000	0.22(a)
54	1,3-Dichloropropane	76	7.000	7.000	(0.912)	3168	0.25000	0.26(a)
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	4292	0.25000	0.28(a)
26	2,2-Dichloropropane	77	3.522	3.522	(0.841)	2918	0.25000	0.00(aM)
24	2-Butanone	43	3.709	3.709	(0.886)	1011	0.50000	0.48(aM)
76	2-Chlorotoluene	91	8.991	8.991	(0.930)	5527	0.25000	0.24(a)
52	2-Hexanone	43	7.139	7.139	(0.930)	1144	0.50000	0.32(a)
77	4-Chlorotoluene	91	9.103	9.103	(0.942)	5589	0.25000	0.22(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	5688	0.25000	0.22(a)
45	4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	1814	0.50000	0.33(a)
10	Acetone	43	1.973	1.973	(0.472)	1327	0.50000	(aM)
37	Benzene	78	4.530	4.530	(0.912)	7348	0.25000	0.24(a)
74	Bromobenzene	156	8.833	8.833	(0.914)	1831	0.25000	0.20(a)
29	Bromochloromethane	128	3.810	3.810	(0.910)	1379	0.25000	0.29(a)
39	Bromodichloromethane	83	5.741	5.741	(1.155)	2545	0.25000	0.24(aM)
66	Bromoform	173	8.421	8.421	(1.097)	995	0.25000	1.41(aM)
6	Bromomethane	94	1.351	1.351	(0.323)	3274	0.25000	(a)
19	Carbon Disulfide	76	2.082	2.082	(0.498)	9996	0.50000	0.54(a)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	2941	0.25000	0.27(aM)
59	Chlorobenzene	112	7.698	7.698	(1.003)	5699	0.25000	0.26(a)
7	Chloroethane	64	1.407	1.407	(0.336)	1480	0.25000	0.27(aM)
28	Chloroform	83	3.919	3.919	(0.936)	3577	0.25000	0.25(a)
3	Chloromethane	50	1.081	1.081	(0.258)	2143	0.25000	0.32(a)
27	cis-1,2-Dichloroethene	96	3.555	3.555	(0.850)	2176	0.25000	0.26(aM)
46	cis-1,3-Dichloropropene	75	6.176	6.176	(1.243)	3069	0.25000	0.23(aM)
55	Dibromochloromethane	129	7.191	7.191	(0.937)	1966	0.25000	0.23(a)
44	Dibromomethane	93	5.565	5.565	(1.120)	1155	0.25000	0.22(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	1741	0.25000	0.04(a)
61	Ethylbenzene	106	7.810	7.810	(1.018)	2551	0.25000	0.23(a)
91	Hexachlorobutadiene	225	11.491	11.491	(1.189)	656	0.25000	0.15(aM)
67	Isopropylbenzene	105	8.575	8.575	(1.117)	7326	0.25000	0.22(a)
62	m,p-Xylenes	106	7.915	7.915	(1.031)	5956	0.50000	0.44(a)
17	Methylene Chloride	84	2.303	2.303	(0.550)	2179	0.25000	(aM)
87	n-Butylbenzene	91	10.022	10.022	(1.037)	2636	0.25000	0.12(aM)
73	n-Propylbenzene	91	8.935	8.935	(0.924)	8239	0.25000	0.24(a)
92	Naphthalene	128	11.671	11.671	(1.207)	1028	0.25000	0.19(aM)
63	o-Xylene	106	8.264	8.264	(1.077)	3336	0.25000	0.25(a)
81	sec-Butylbenzene	105	9.527	9.527	(0.986)	7167	0.25000	0.24(a)
64	Styrene	104	8.309	8.309	(1.083)	4361	0.25000	0.20(a)
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	4918	0.25000	0.23(a)
56	Tetrachloroethene	164	6.933	6.933	(0.903)	1792	0.25000	0.24(a)
50	Toluene	91	6.460	6.460	(0.842)	8059	0.25000	0.25(a)
20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	1679	0.25000	0.22(a)
51	trans-1,3-Dichloropropene	75	6.715	6.715	(1.352)	2385	0.25000	0.22(a)
38	Trichloroethene	130	5.220	5.220	(1.051)	2042	0.25000	0.23(a)
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	2838	0.25000	0.21(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	2270	0.25000	0.25(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.

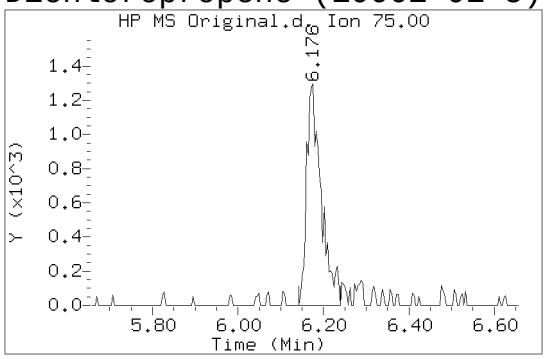
Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Date : 19-JUL-2022 11:27
Client ID: WSTD000.25
Sample Info: WSTD000.25;WSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 1
Y (x10^6)
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1
Min
1 2 3 4 5 6 7 8 9 10 11 12 13 14
-Bromomethane+
-Trichlorofluoromethane
-Diethyl ether+
-1,1-Dichloroethene+
-Isopropyl alcohol
-Acetonitrile+
-Methylene Chloride+
-Methyl tert-butyl ether+
-n-Hexane+
-1,1-Dichloroethane+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-Ethyl Acetate+
-Bromochloromethane+
-Chloroform+
-Dibromofluoromethane+
-Pentafluorobenzene
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-tert-Amyl methyl ether+
-1,4-Difluorobenzene
-Trichloroethene
-1,2-Dichloropropane+
-Dibromomethane+
-Bromodichloromethane
-2-Nitropropane
-Dimethyl Disulfide+
-4-Methyl-2-Pentanone+
-Toluene
-Ethyl Methacrylate+
-1,1,2-Trichloroethane
-1,3-Dichloropropane+
-2-Hexanone+
-1,2-Dibromoethane
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes
Chlorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene
-1,2,3-Trichloropropane+
-n-Propylbenzene+
-1,3,5-Trimethylbenzene+
-tert-Butylbenzene+
-1,2,4-Trimethylbenzene
-sec-Butylbenzene
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-1,2-Dichlorobenzene+
-1,2,4-Trichlorobenzene+
-Naphthalene
-1,2,3-Trichlorobenzene
\\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D

Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

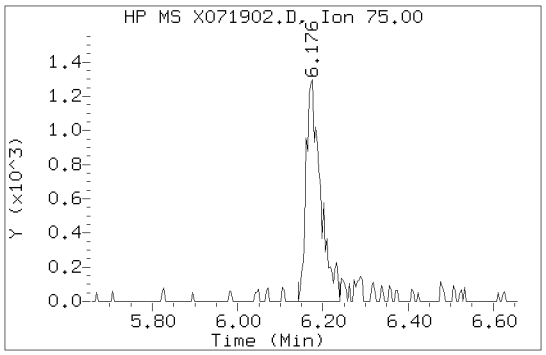
cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

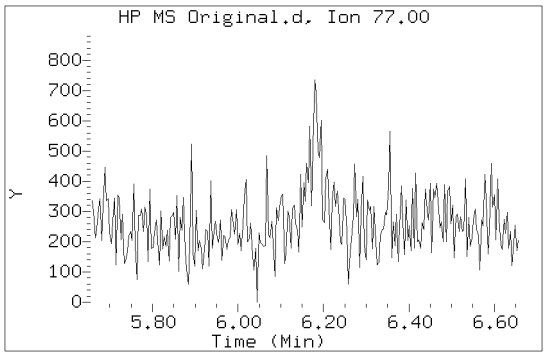
BEFORE
MASS
128
AREA
1379
HEIGHT
582
25-Jul-2022
09:00
linh
pham



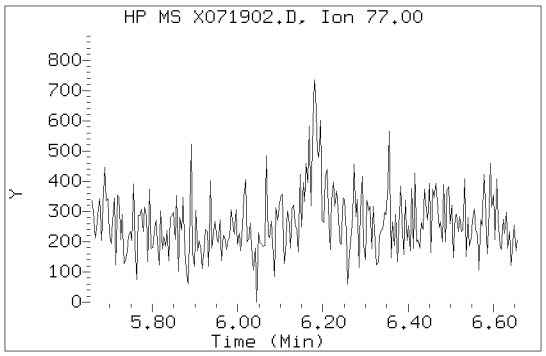
AFTER
MASS
75
AREA
3069
HEIGHT
1297
19-Aug-2022
10:59
linh
pham



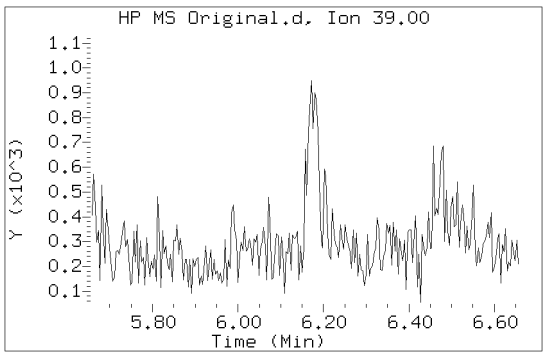
BEFORE
MASS
49
AREA
1593
HEIGHT
651
25-Jul-2022
09:00
linh
pham



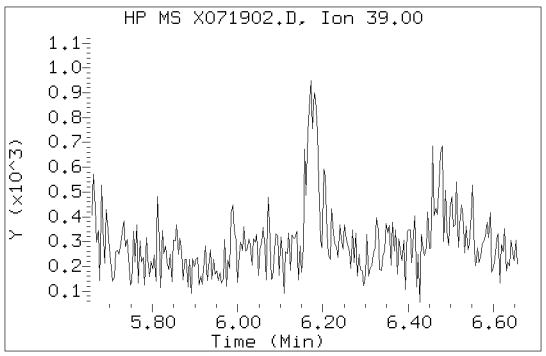
AFTER
MASS
77
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
130
AREA
1583
HEIGHT
689
25-Jul-2022
09:00
linh
pham



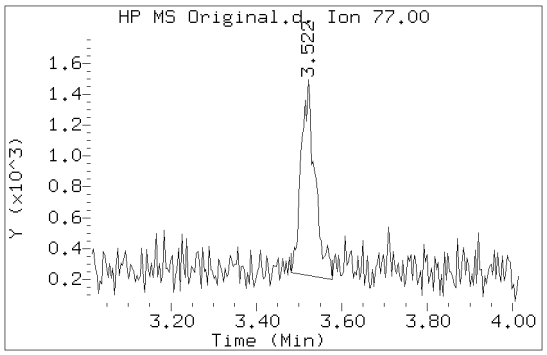
AFTER
MASS
39
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



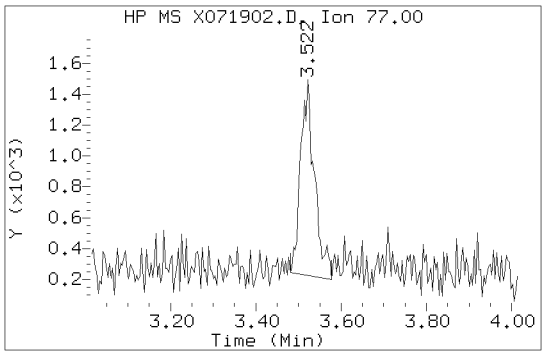
2,2-Dichloropropane (594-20-7)

Reason Code:

BEFORE
MASS
43
AREA
1144
HEIGHT
523
25-Jul-2022
09:00
linh
pham



AFTER
MASS
77
AREA
2918
HEIGHT
1268
19-Aug-2022
10:59
linh
pham



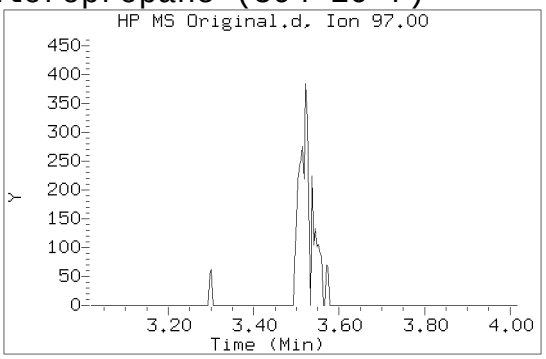
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

2,2-Dichloropropane (594-20-7)

Reason Code:

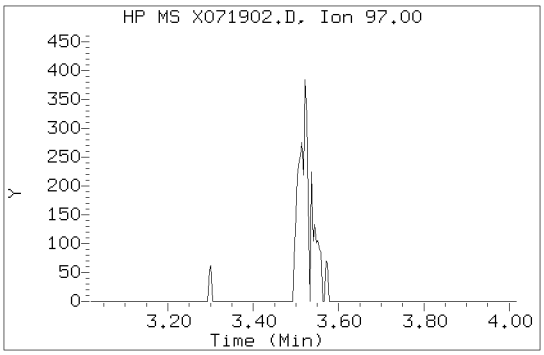
BEFORE

MASS
58
AREA
718
HEIGHT
357
25-Jul-2022
09:00
linh
pham



AFTER

MASS
97
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

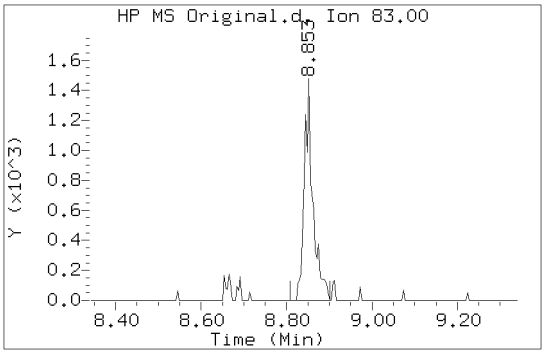


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

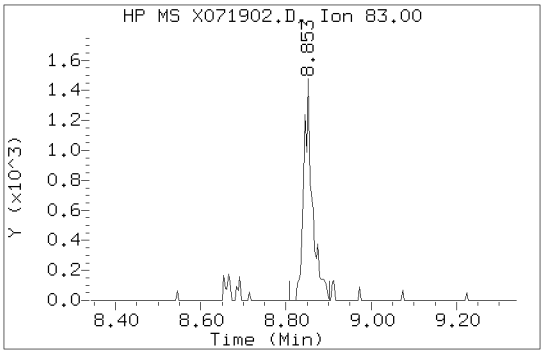
BEFORE

MASS
101
AREA
1540
HEIGHT
826
25-Jul-2022
09:00
linh
pham



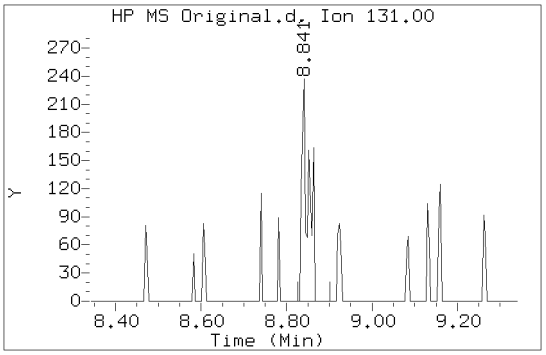
AFTER

MASS
83
AREA
2066
HEIGHT
1478
19-Aug-2022
10:59
linh
pham



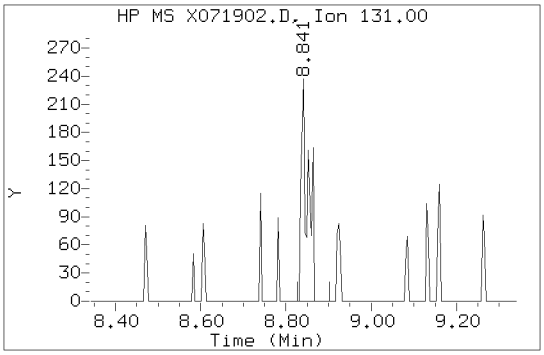
BEFORE

MASS
151
AREA
1093
HEIGHT
601
25-Jul-2022
09:00
linh
pham



AFTER

MASS
131
AREA
261
HEIGHT
237
19-Aug-2022
10:59
linh
pham

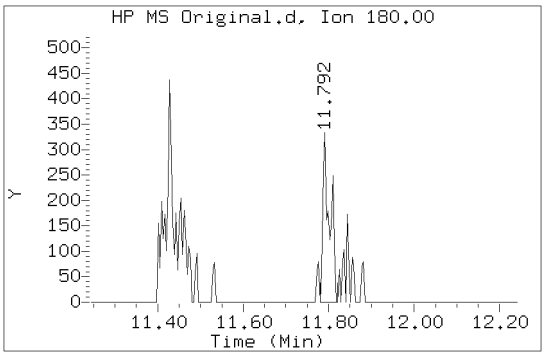


1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

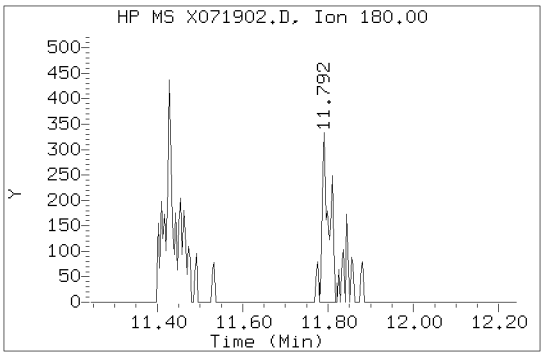
BEFORE

MASS
77
AREA
2918
HEIGHT
1268
25-Jul-2022
09:00
linh
pham



AFTER

MASS
180
AREA
365
HEIGHT
333
19-Aug-2022
10:59
linh
pham

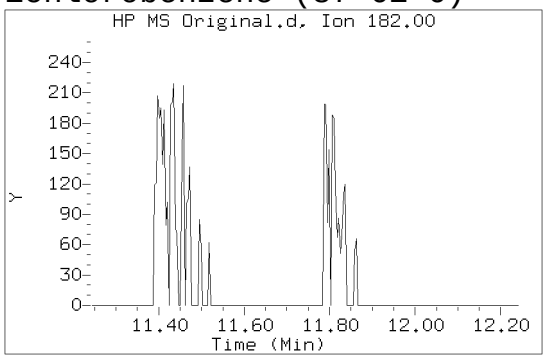


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

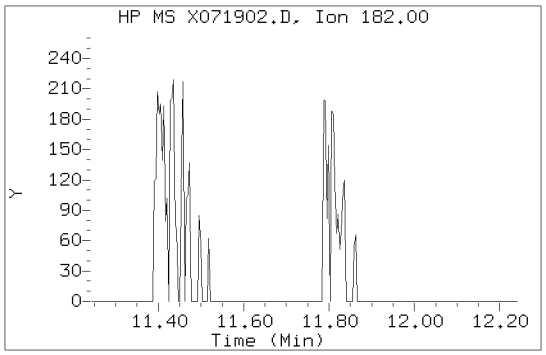
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

BEFORE
MASS
97
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



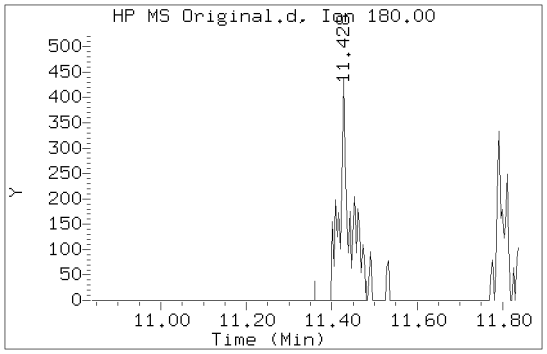
AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



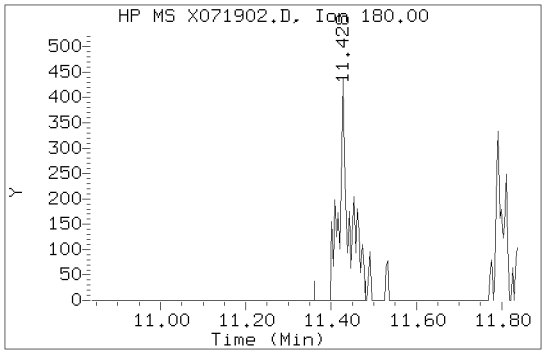
1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

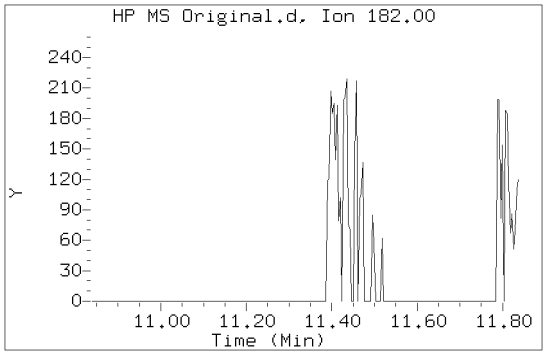
BEFORE
MASS
93
AREA
1155
HEIGHT
850
25-Jul-2022
09:00
linh
pham



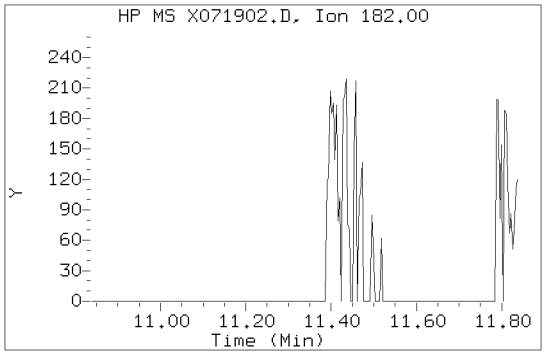
AFTER
MASS
180
AREA
737
HEIGHT
437
19-Aug-2022
10:59
linh
pham



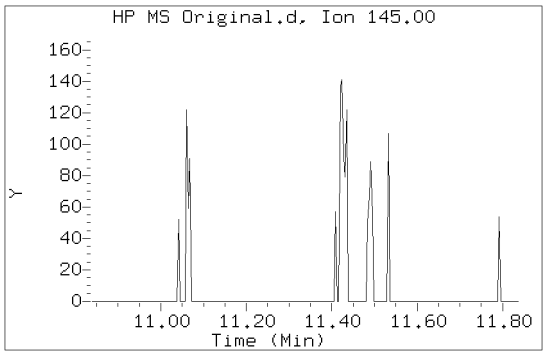
BEFORE
MASS
95
AREA
1189
HEIGHT
756
25-Jul-2022
09:00
linh
pham



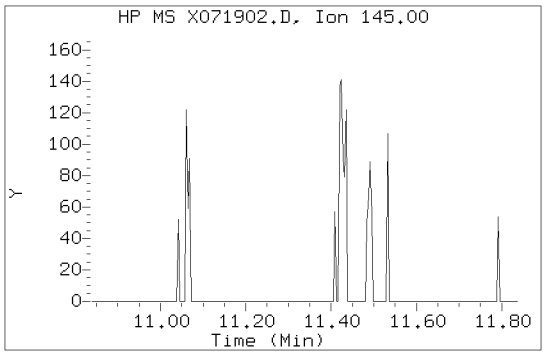
AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
174
AREA
1408
HEIGHT
628
25-Jul-2022
09:00
linh
pham



AFTER
MASS
145
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



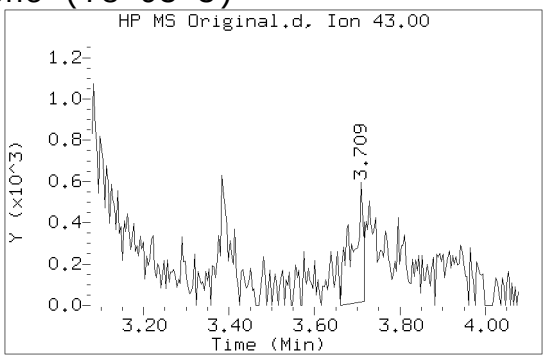
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

2-Butanone (78-93-3)

Reason Code:

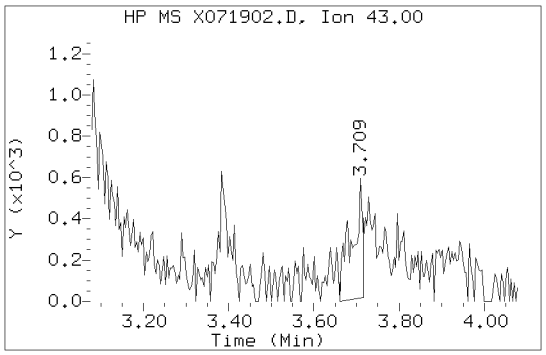
BEFORE

MASS
83
AREA
2066
HEIGHT
1478
25-Jul-2022
09:00
linh
pham



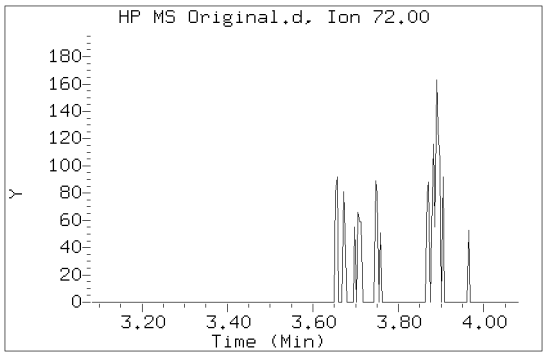
AFTER

MASS
43
AREA
1011
HEIGHT
580
19-Aug-2022
10:59
linh
pham



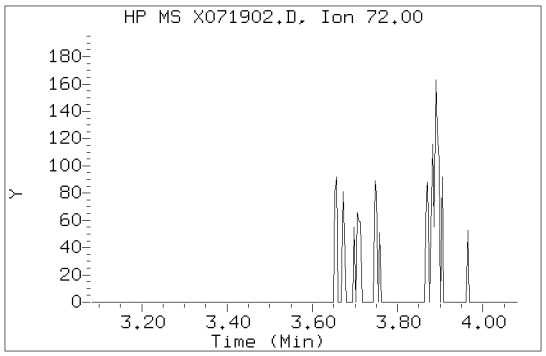
BEFORE

MASS
131
AREA
261
HEIGHT
237
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

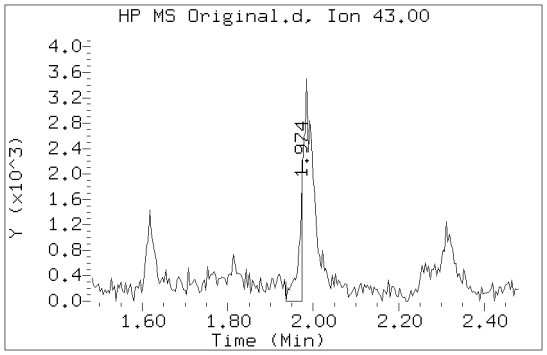


Acetone (67-64-1)

Reason Code:

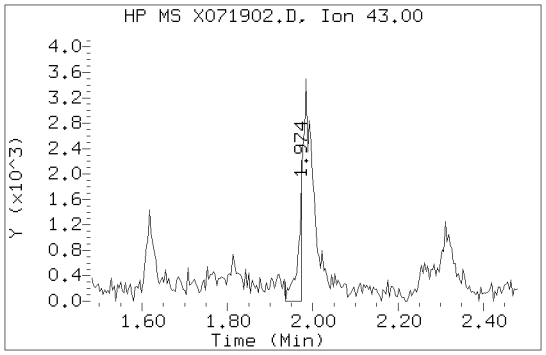
BEFORE

MASS
62
AREA
2270
HEIGHT
1999
25-Jul-2022
09:00
linh
pham



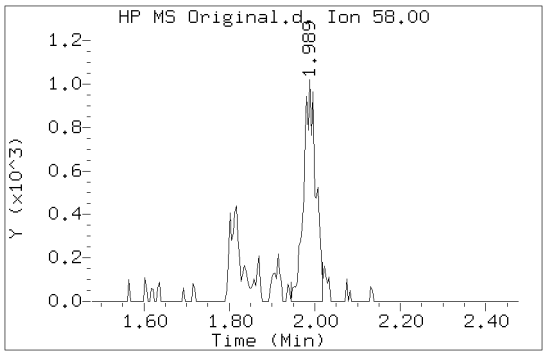
AFTER

MASS
43
AREA
1327
HEIGHT
1915
19-Aug-2022
10:59
linh
pham



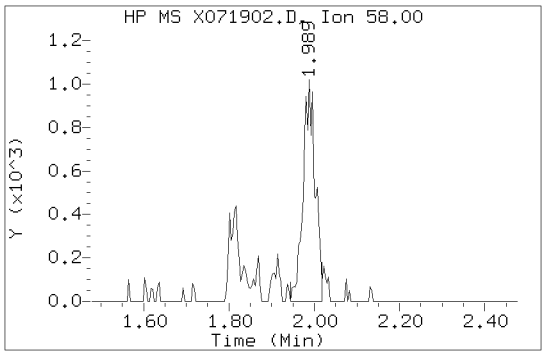
BEFORE

MASS
64
AREA
1357
HEIGHT
893
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
2032
HEIGHT
1020
19-Aug-2022
10:59
linh
pham



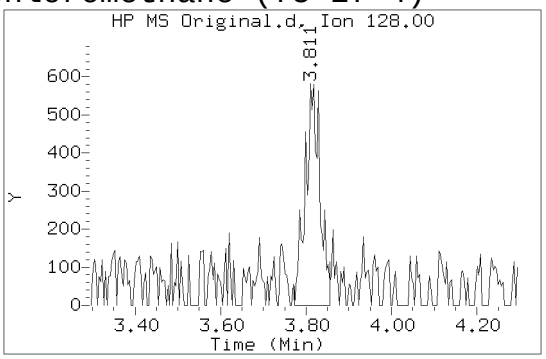
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Bromodichloromethane (75-27-4)

Reason Code:

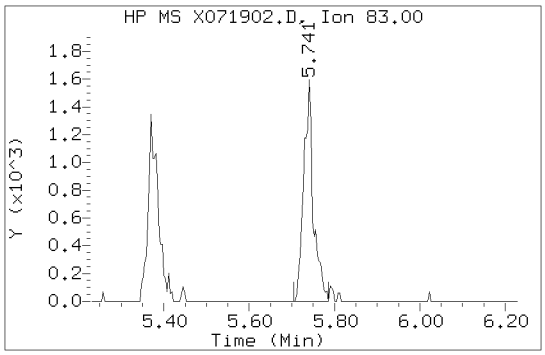
BEFORE

MASS
112
AREA
5699
HEIGHT
4160
25-Jul-2022
09:00
linh
pham



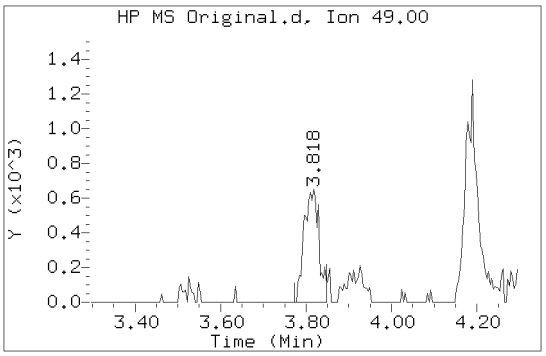
AFTER

MASS
83
AREA
2545
HEIGHT
1596
19-Aug-2022
10:59
linh
pham



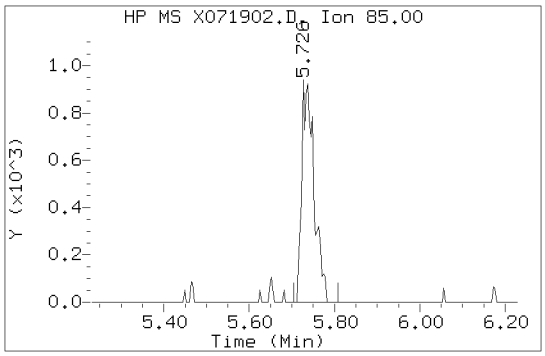
BEFORE

MASS
77
AREA
13059
HEIGHT
6542
25-Jul-2022
09:00
linh
pham



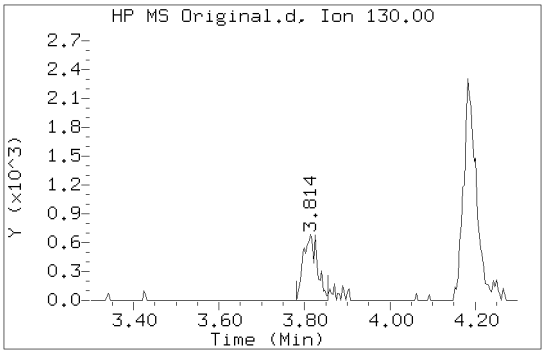
AFTER

MASS
85
AREA
1904
HEIGHT
940
19-Aug-2022
10:59
linh
pham



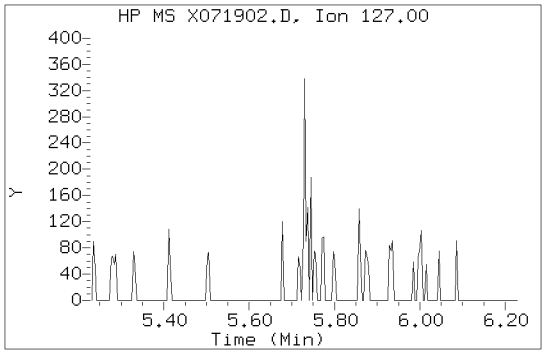
BEFORE

MASS
114
AREA
1994
HEIGHT
1227
25-Jul-2022
09:00
linh
pham



AFTER

MASS
127
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

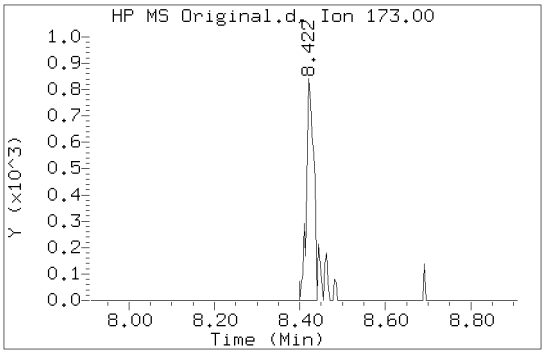


Bromoform (75-25-2)

Reason Code:

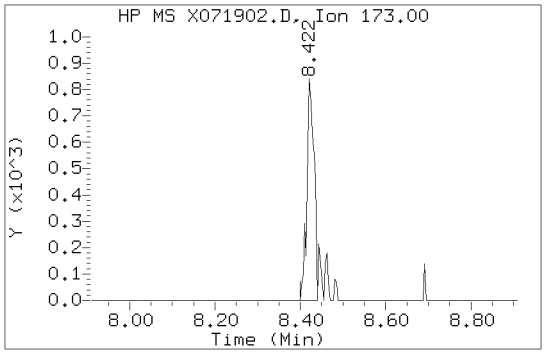
BEFORE

MASS
64
AREA
1480
HEIGHT
1248
25-Jul-2022
09:00
linh
pham



AFTER

MASS
173
AREA
995
HEIGHT
841
19-Aug-2022
10:59
linh
pham



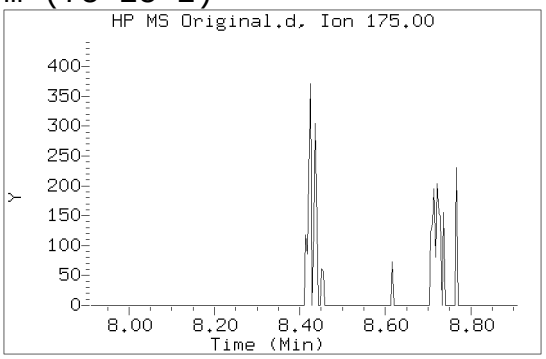
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Bromoform (75-25-2)

Reason Code:

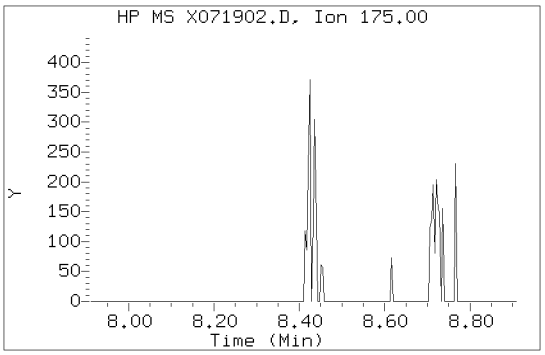
BEFORE

MASS
66
AREA
908
HEIGHT
577
25-Jul-2022
09:00
linh
pham



AFTER

MASS
175
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

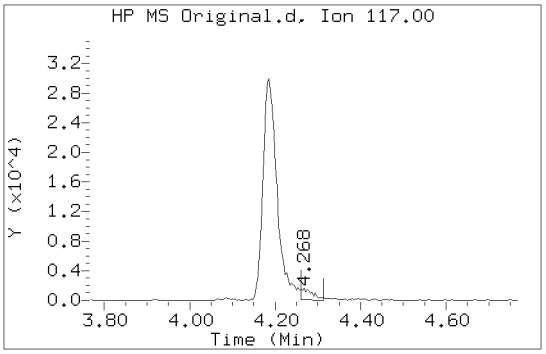


Carbon Tetrachloride (56-23-5)

Reason Code:

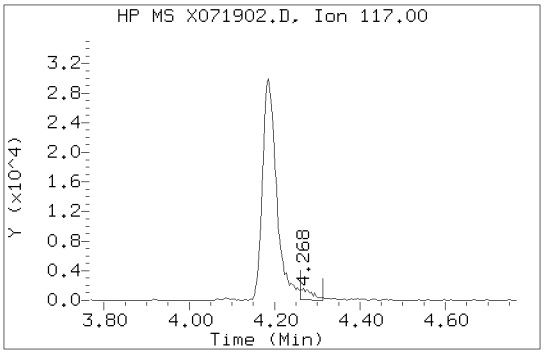
BEFORE

MASS
96
AREA
2176
HEIGHT
1100
25-Jul-2022
09:00
linh
pham



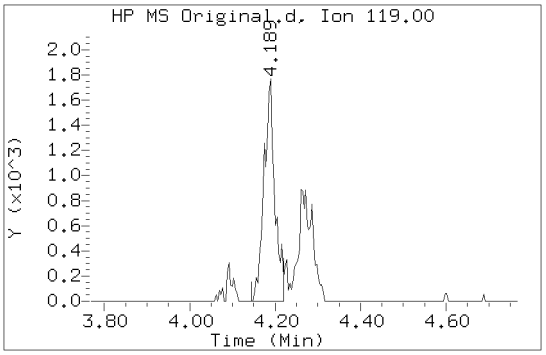
AFTER

MASS
117
AREA
2941
HEIGHT
1575
19-Aug-2022
10:59
linh
pham



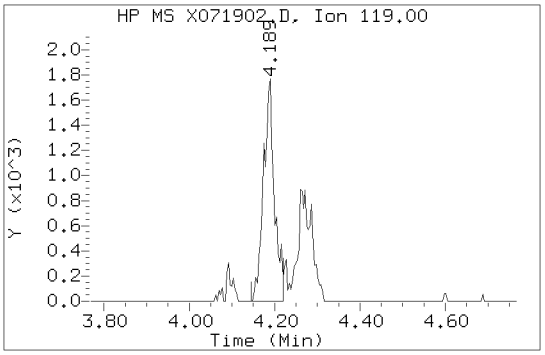
BEFORE

MASS
61
AREA
2985
HEIGHT
1241
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
3120
HEIGHT
1768
19-Aug-2022
10:59
linh
pham

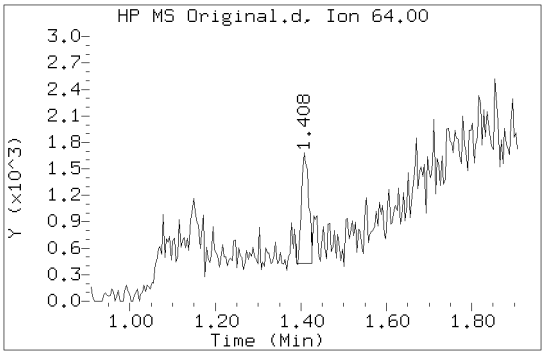


Chloroethane (75-00-3)

Reason Code:

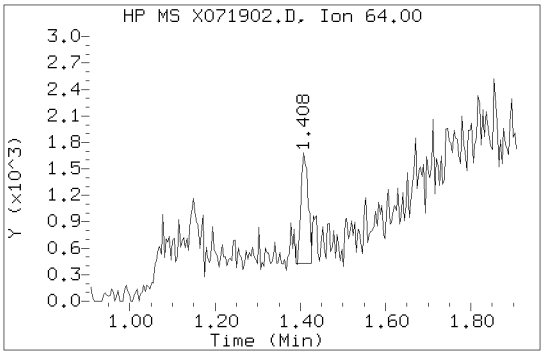
BEFORE

MASS
117
AREA
1125944
HEIGHT
749184
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
1480
HEIGHT
1248
19-Aug-2022
10:59
linh
pham



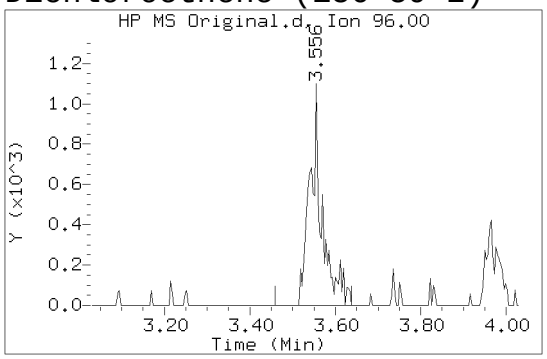
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

cis-1,2-Dichloroethene (156-59-2)

Reason Code:

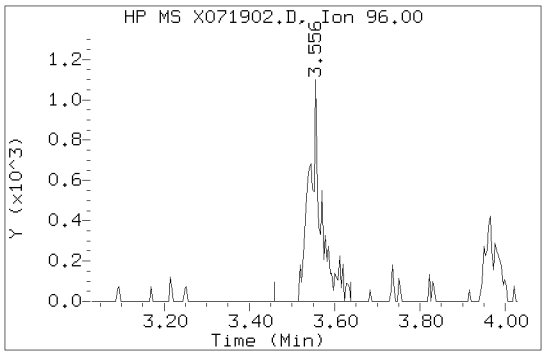
BEFORE

MASS
106
AREA
2551
HEIGHT
1284
25-Jul-2022
09:00
linh
pham



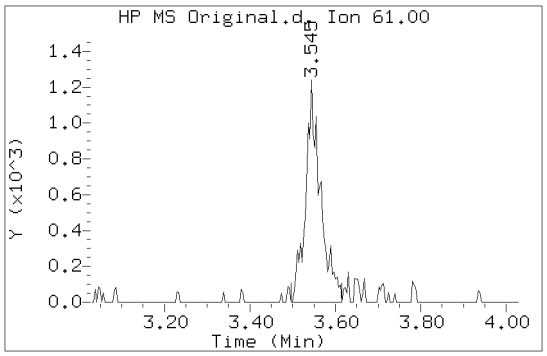
AFTER

MASS
96
AREA
2176
HEIGHT
1100
19-Aug-2022
10:59
linh
pham



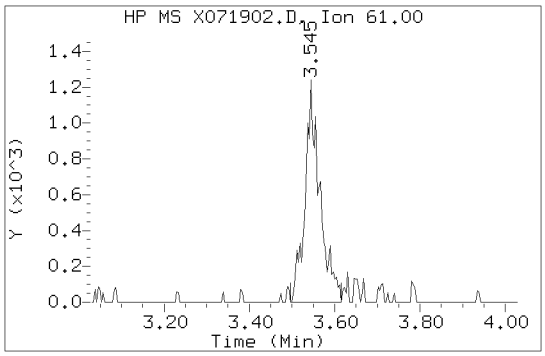
BEFORE

MASS
91
AREA
8845
HEIGHT
4301
25-Jul-2022
09:00
linh
pham



AFTER

MASS
61
AREA
2985
HEIGHT
1241
19-Aug-2022
10:59
linh
pham

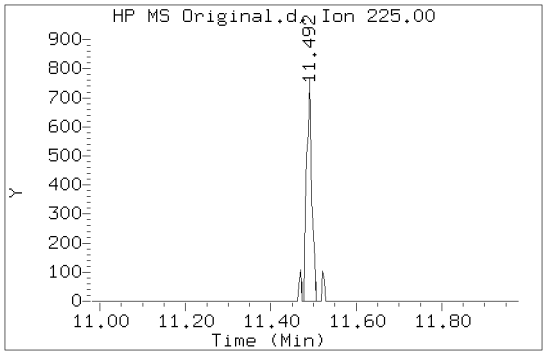


Hexachlorobutadiene (87-68-3)

Reason Code:

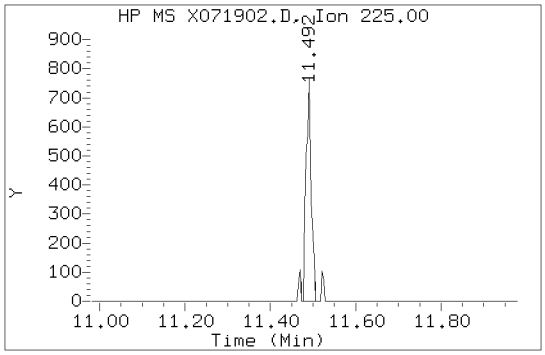
BEFORE

MASS
91
AREA
8239
HEIGHT
3499
25-Jul-2022
09:00
linh
pham



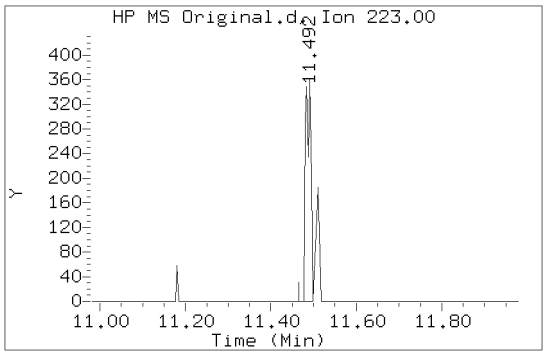
AFTER

MASS
225
AREA
656
HEIGHT
765
19-Aug-2022
10:59
linh
pham



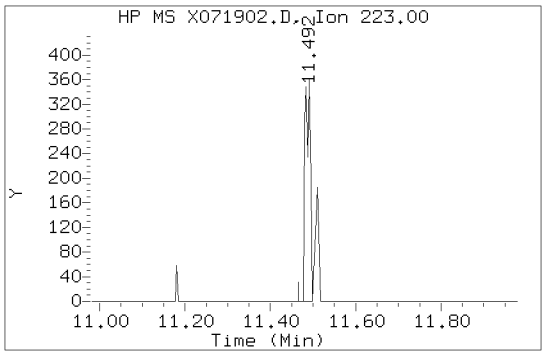
BEFORE

MASS
120
AREA
2347
HEIGHT
1333
25-Jul-2022
09:00
linh
pham



AFTER

MASS
223
AREA
322
HEIGHT
360
19-Aug-2022
10:59
linh
pham

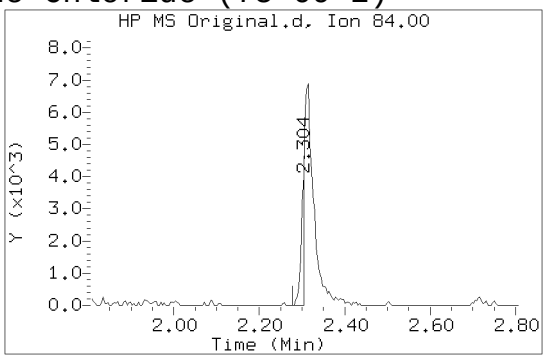


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

Methylene Chloride (75-09-2)

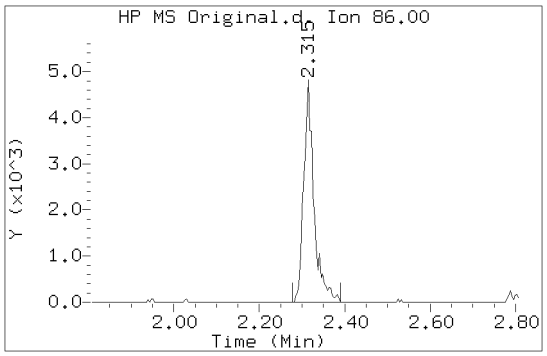
BEFORE

MASS
91
AREA
5589
HEIGHT
2011
25-Jul-2022
09:00
linh
pham



BEFORE

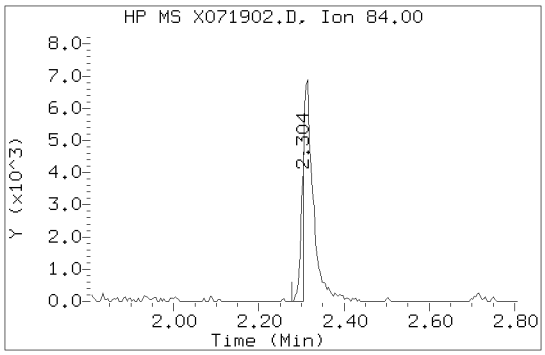
MASS
126
AREA
1833
HEIGHT
712
25-Jul-2022
09:00
linh
pham



Reason Code:

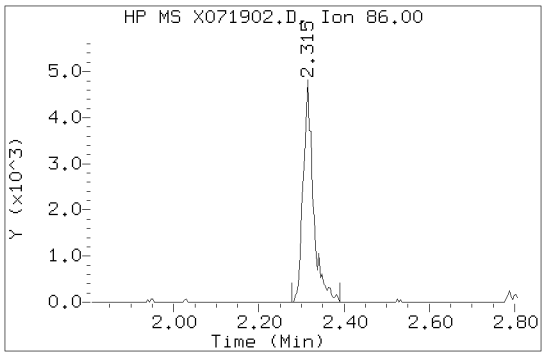
AFTER

MASS
84
AREA
2179
HEIGHT
4047
19-Aug-2022
10:59
linh
pham



AFTER

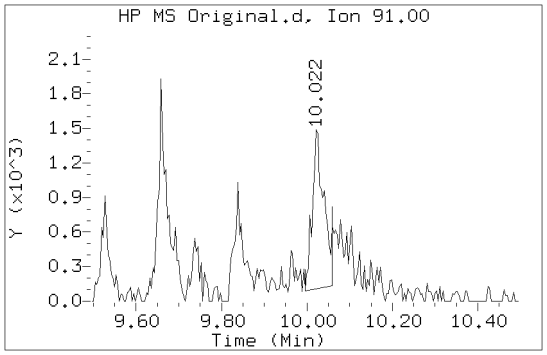
MASS
86
AREA
8177
HEIGHT
4819
19-Aug-2022
10:59
linh
pham



n-Butylbenzene (104-51-8)

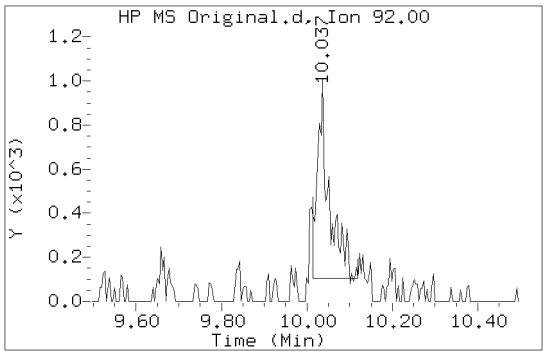
BEFORE

MASS
119
AREA
4918
HEIGHT
3300
25-Jul-2022
09:00
linh
pham



BEFORE

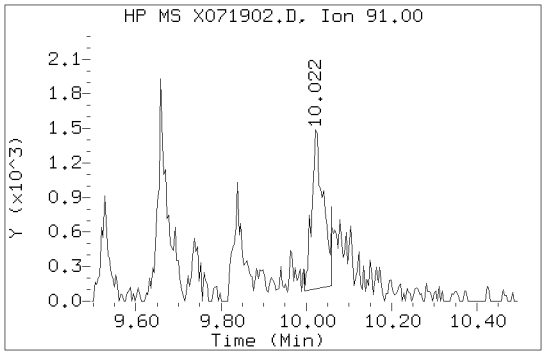
MASS
91
AREA
3272
HEIGHT
2266
25-Jul-2022
09:00
linh
pham



Reason Code:

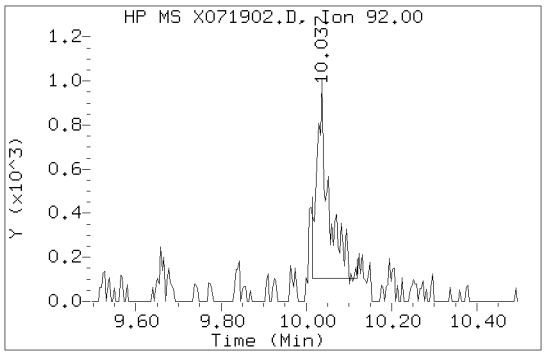
AFTER

MASS
91
AREA
2636
HEIGHT
1379
19-Aug-2022
10:59
linh
pham



AFTER

MASS
92
AREA
1706
HEIGHT
901
19-Aug-2022
10:59
linh
pham

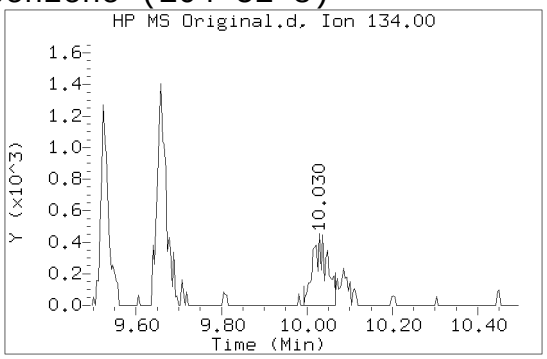


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

n-Butylbenzene (104-51-8)

BEFORE

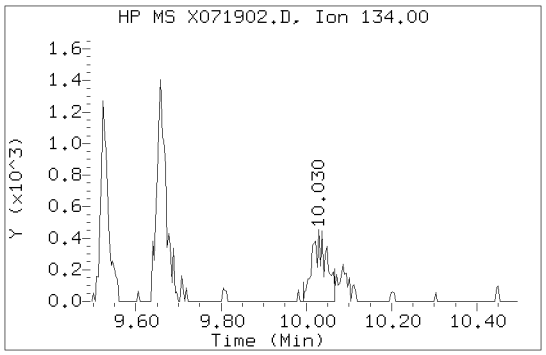
MASS
134
AREA
1291
HEIGHT
839
25-Jul-2022
09:00
linh
pham



Reason Code:

AFTER

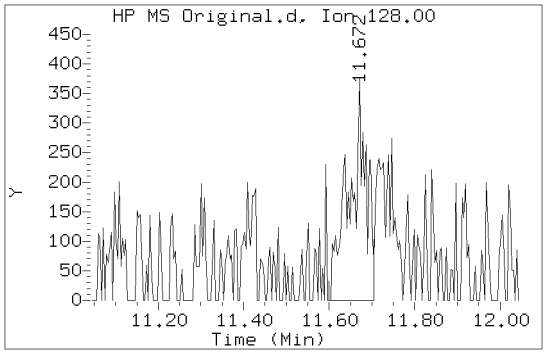
MASS
134
AREA
1039
HEIGHT
456
19-Aug-2022
10:59
linh
pham



Naphthalene (91-20-3)

BEFORE

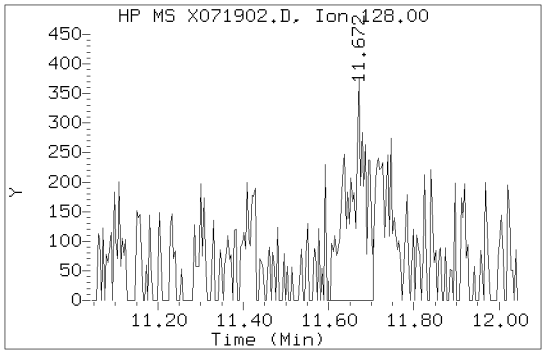
MASS
105
AREA
7167
HEIGHT
4920
25-Jul-2022
09:00
linh
pham



Reason Code:

AFTER

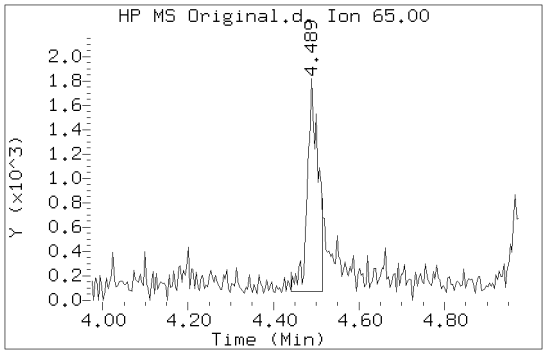
MASS
128
AREA
1028
HEIGHT
375
19-Aug-2022
10:59
linh
pham



1,2-Dichloroethane-d4 (17060-07-0)

BEFORE

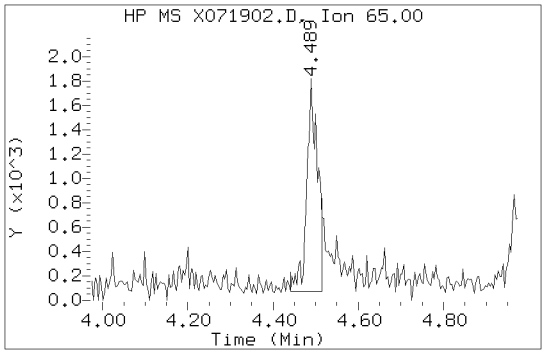
MASS
113
AREA
2821
HEIGHT
1201
25-Jul-2022
09:00
linh
pham



Reason Code:

AFTER

MASS
65
AREA
3098
HEIGHT
1743
19-Aug-2022
10:59
linh
pham



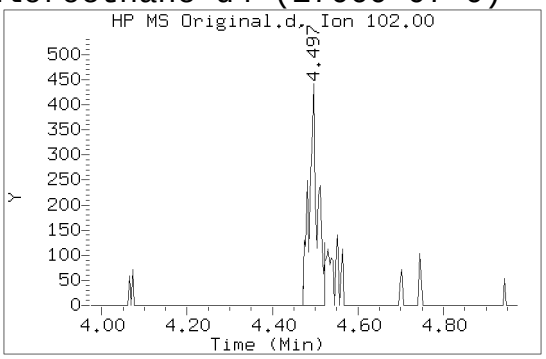
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

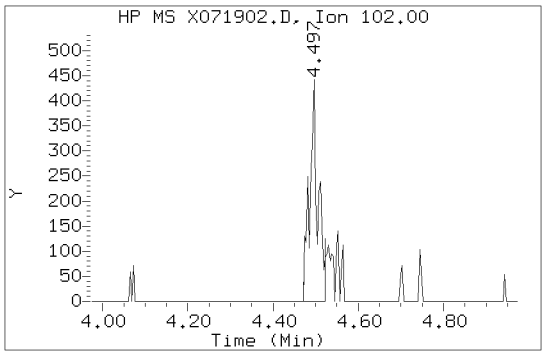
BEFORE

MASS
111
AREA
2894
HEIGHT
1282
25-Jul-2022
09:00
linh
pham



AFTER

MASS
102
AREA
606
HEIGHT
442
19-Aug-2022
10:59
linh
pham

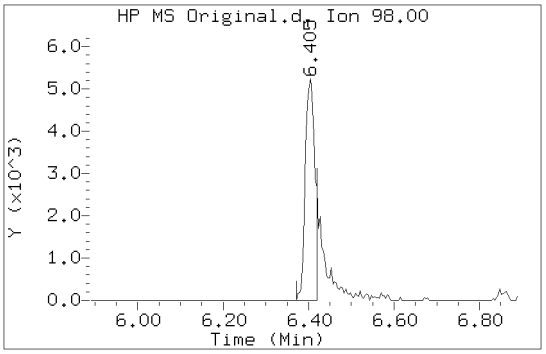


Toluene-d8 (2037-26-5)

Reason Code:

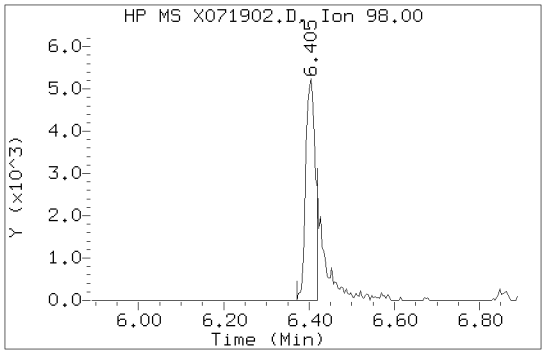
BEFORE

MASS
65
AREA
3098
HEIGHT
1743
25-Jul-2022
09:00
linh
pham



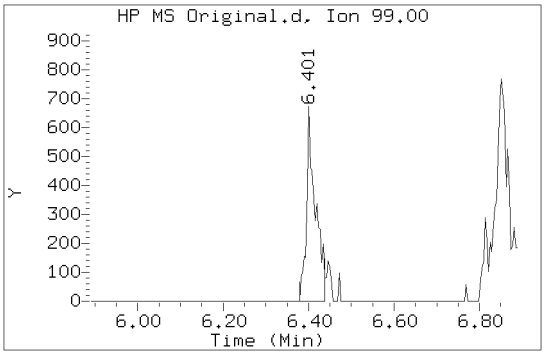
AFTER

MASS
98
AREA
8187
HEIGHT
5242
19-Aug-2022
10:59
linh
pham



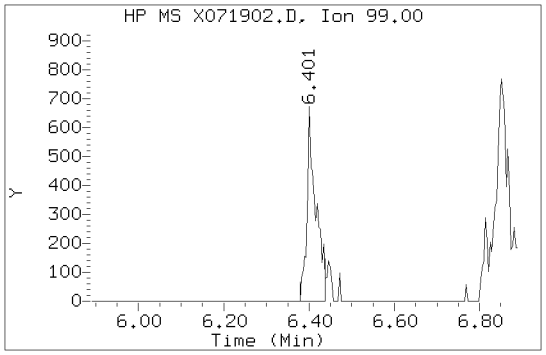
BEFORE

MASS
102
AREA
606
HEIGHT
442
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
978
HEIGHT
672
19-Aug-2022
10:59
linh
pham

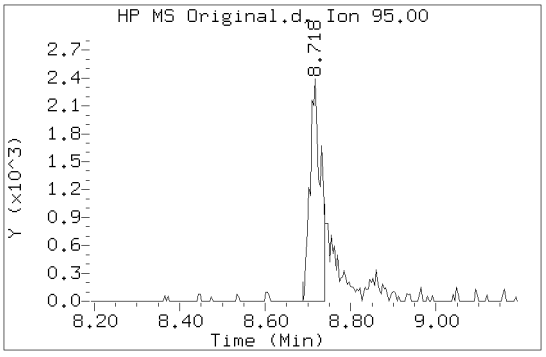


4-Bromofluorobenzene (460-00-4)

Reason Code:

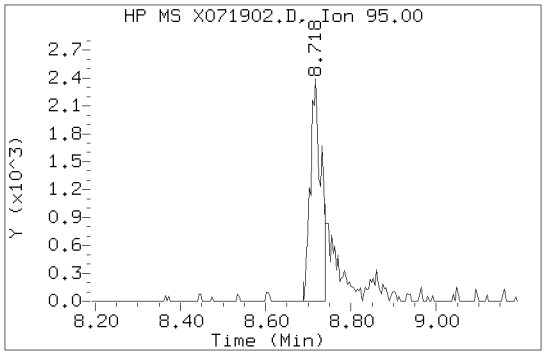
BEFORE

MASS
95
AREA
4127
HEIGHT
2390
25-Jul-2022
09:00
linh
pham



AFTER

MASS
95
AREA
4127
HEIGHT
2390
19-Aug-2022
10:59
linh
pham



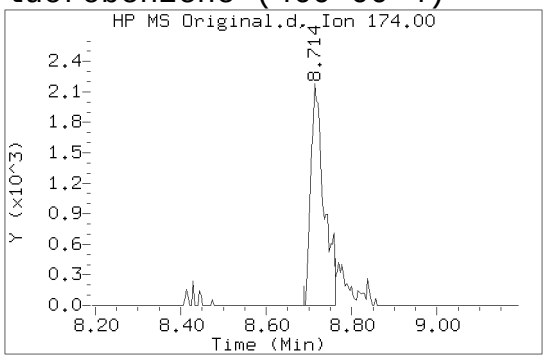
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071902.D
Inj Date : 19-JUL-2022 11:27
InstruID : voa6.i
LabSampID : VSTD000.25

4-Bromofluorobenzene (460-00-4)

Reason Code:

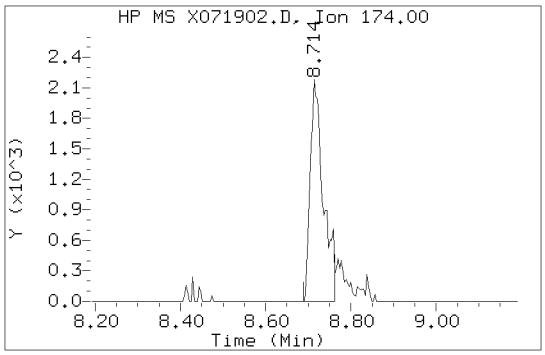
BEFORE

MASS
174
AREA
4648
HEIGHT
2180
25-Jul-2022
09:00
linh
pham



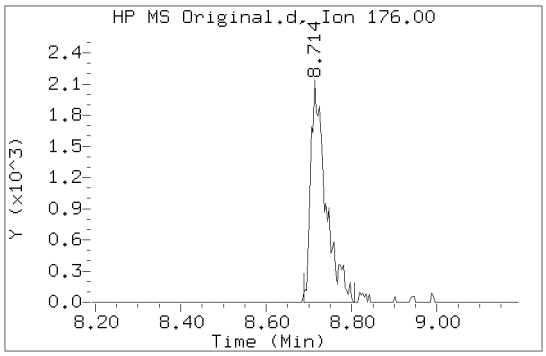
AFTER

MASS
174
AREA
4648
HEIGHT
2180
19-Aug-2022
10:59
linh
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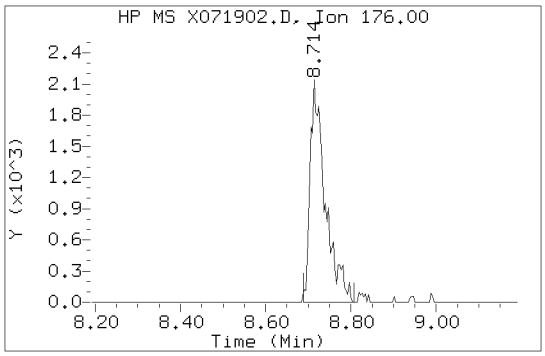
BEFORE

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25-Jul-2022
09:00
linh
pham



AFTER

MASS
176
AREA
5254
HEIGHT
2140
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
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Inj Date : 19-JUL-2022 12:08
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 11:27 Cal File: X071902.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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

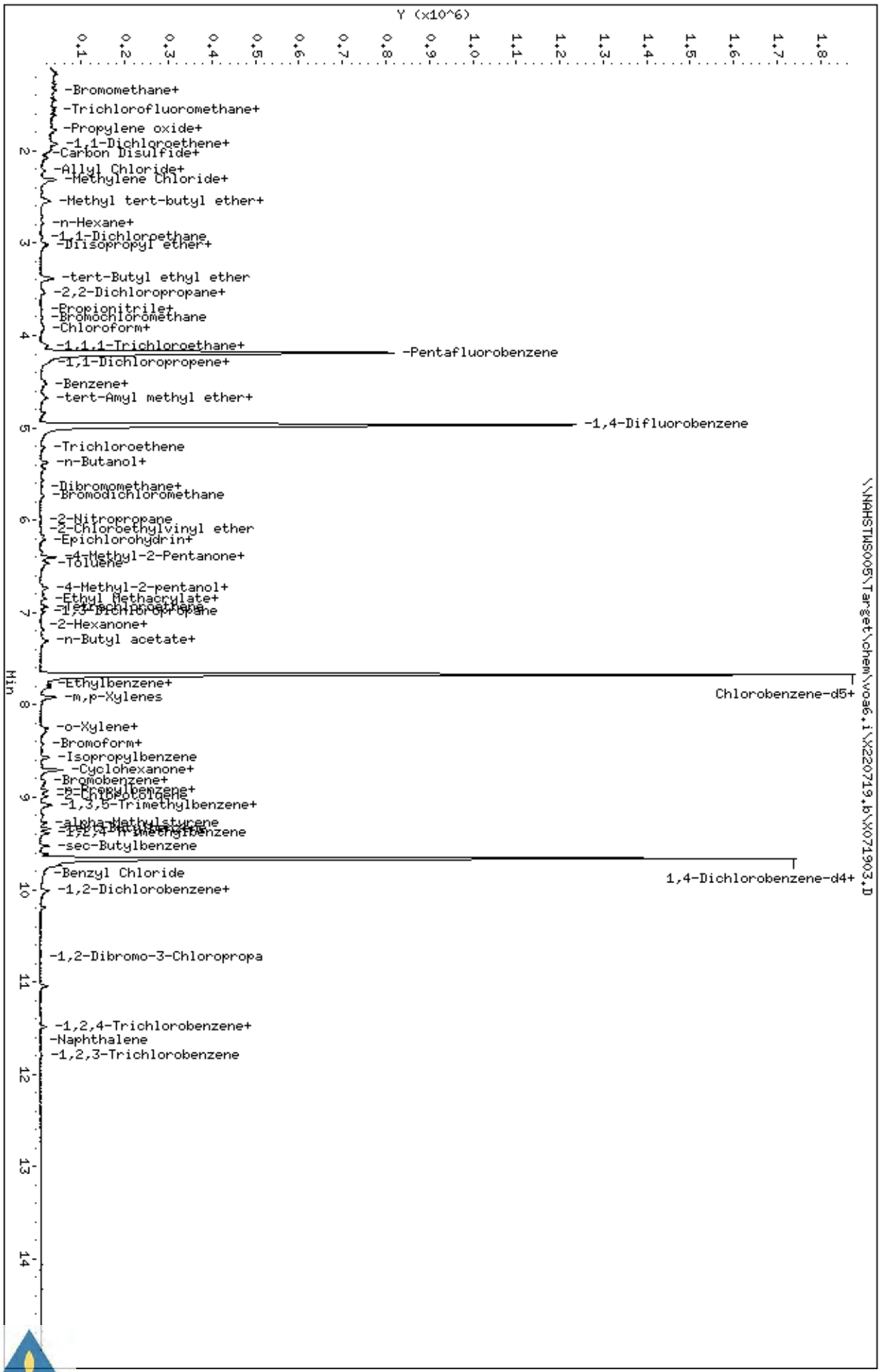
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.185	4.185	(1.000)	739240	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1081359	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	971157	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	441620	50.0000	
$ 30 Dibromofluoromethane	113	4.106	4.106	(0.981)	4991	0.50000	(aM)
$ 35 1,2-Dichloroethane-d4	65	4.492	4.492	(1.073)	5362	0.50000	0.37(aM)
$ 48 Toluene-d8	98	6.400	6.400	(0.834)	14148	0.50000	0.58(aM)
$ 69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	6586	0.50000	(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	3465	0.50000	0.50(aM)
31 1,1,1-Trichloroethane	97	4.099	4.099	(0.979)	5496	0.50000	0.52(a)
68 1,1,2,2-Tetrachloroethane	83	8.848	8.848	(0.915)	3451	0.50000	0.55(aM)
53 1,1,2-Trichloroethane	83	6.850	6.850	(0.893)	2609	0.50000	0.52(aM)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	5606	0.50000	0.49(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	3325	0.50000	0.53(aM)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	4832	0.50000	0.55(a)
93 1,2,3-Trichlorobenzene	180	11.791	11.791	(1.220)	1275	0.50000	0.55(aM)
71 1,2,3-Trichloropropane	75	8.878	8.878	(0.919)	2596	0.50000	0.54(aM)
90 1,2,4-Trichlorobenzene	180	11.401	11.401	(1.180)	2030	0.50000	0.50(aM)
79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	11226	0.50000	0.52(aM)
89 1,2-Dibromo-3-Chloropropane	155	10.726	10.726	(1.110)	270	0.50000	0.99(aM)

57	1,2-Dibromoethane	107	7.278	7.278 (0.949)	3299	0.50000	0.52(aM)
88	1,2-Dichlorobenzene	146	10.010	10.010 (1.036)	5548	0.50000	0.50(a)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.567	4.567	(0.919)	4888	0.50000	0.51(aM)
42	1,2-Dichloropropane	63	5.456	5.456	(1.098)	3868	0.50000	0.58(aM)
75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	11467	0.50000	0.53(a)
83	1,3-Dichlorobenzene	146	9.617	9.617	(0.995)	6308	0.50000	0.51(a)
54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	5230	0.50000	0.51(aM)
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	7241	0.50000	0.55(a)
26	2,2-Dichloropropane	77	3.525	3.525	(0.842)	5133	0.50000	0.26(a)
24	2-Butanone	43	3.694	3.694	(0.883)	1760	1.00000	0.94(aM)
76	2-Chlorotoluene	91	8.987	8.987	(0.930)	10810	0.50000	0.57(aM)
52	2-Hexanone	43	7.131	7.131	(0.930)	3055	1.00000	1.00(aM)
77	4-Chlorotoluene	91	9.099	9.099	(0.941)	11731	0.50000	0.55(a)
82	p-Isopropyltoluene	119	9.654	9.654	(0.999)	11018	0.50000	0.51(aM)
45	4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	4464	1.00000	0.94(a)
10	Acetone	43	1.977	1.977	(0.472)	1762	1.00000	(aM)
37	Benzene	78	4.534	4.534	(0.912)	13584	0.50000	0.53(a)
74	Bromobenzene	156	8.826	8.826	(0.913)	3862	0.50000	0.51(a)
29	Bromochloromethane	128	3.810	3.810	(0.910)	2258	0.50000	0.54(a)
39	Bromodichloromethane	83	5.733	5.733	(1.154)	4485	0.50000	0.49(aM)
66	Bromoform	173	8.421	8.421	(1.098)	1755	0.50000	1.59(Ta)
6	Bromomethane	94	1.347	1.347	(0.322)	3413	0.50000	(aM)
19	Carbon Disulfide	76	2.078	2.078	(0.497)	16886	1.00000	1.03(a)
34	Carbon Tetrachloride	117	4.260	4.260	(0.857)	5505	0.50000	0.59(aMH)
59	Chlorobenzene	112	7.701	7.701	(1.004)	9208	0.50000	0.50(a)
7	Chloroethane	64	1.411	1.411	(0.337)	2356	0.50000	0.49(aM)
28	Chloroform	83	3.919	3.919	(0.936)	6190	0.50000	0.49(a)
3	Chloromethane	50	1.085	1.085	(0.259)	3959	0.50000	0.63(aM)
27	cis-1,2-Dichloroethene	96	3.551	3.551	(0.849)	3635	0.50000	0.49(a)
46	cis-1,3-Dichloropropene	75	6.172	6.172	(1.242)	5379	0.50000	0.47(aM)
55	Dibromochloromethane	129	7.191	7.191	(0.937)	3661	0.50000	0.50(aM)
44	Dibromomethane	93	5.564	5.564	(1.120)	2298	0.50000	0.51(a)
2	Dichlorodifluoromethane	85	0.976	0.976	(0.233)	3857	0.50000	0.37(a)
61	Ethylbenzene	106	7.810	7.810	(1.018)	4672	0.50000	0.50(a)
91	Hexachlorobutadiene	225	11.487	11.487	(1.188)	2233	0.50000	0.60(aM)
67	Isopropylbenzene	105	8.567	8.567	(1.117)	13970	0.50000	0.49(aM)
62	m,p-Xylenes	106	7.919	7.919	(1.032)	10839	1.00000	0.93(a)
17	Methylene Chloride	84	2.311	2.311	(0.552)	4801	0.50000	(aM)
87	n-Butylbenzene	91	10.018	10.018	(1.036)	9255	0.50000	0.51(aM)
73	n-Propylbenzene	91	8.927	8.927	(0.924)	14364	0.50000	0.49(a)
92	Naphthalene	128	11.637	11.637	(1.204)	2252	0.50000	0.50(aM)
63	o-Xylene	106	8.256	8.256	(1.076)	5758	0.50000	0.51(a)
81	sec-Butylbenzene	105	9.527	9.527	(0.986)	13047	0.50000	0.52(a)
64	Styrene	104	8.293	8.293	(1.081)	8853	0.50000	0.47(aM)
78	tert-Butylbenzene	119	9.343	9.343	(0.967)	9259	0.50000	0.50(a)
56	Tetrachloroethene	164	6.940	6.940	(0.905)	3226	0.50000	0.51(aM)
50	Toluene	91	6.464	6.464	(0.843)	14425	0.50000	0.52(a)
20	trans-1,2-Dichloroethene	96	2.547	2.547	(0.609)	3384	0.50000	0.52(a)
51	trans-1,3-Dichloropropene	75	6.708	6.708	(1.350)	4702	0.50000	0.50(aM)
38	Trichloroethene	130	5.216	5.216	(1.050)	3892	0.50000	0.51(a)
8	Trichlorofluoromethane	101	1.565	1.565	(0.374)	5874	0.50000	0.50(a)
5	Vinyl Chloride	62	1.149	1.149	(0.275)	4102	0.50000	0.52(a)

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.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
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Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

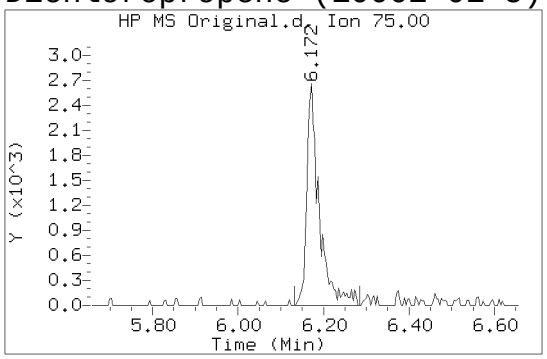
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

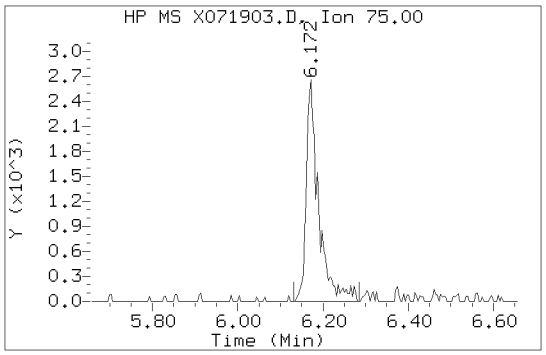
cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

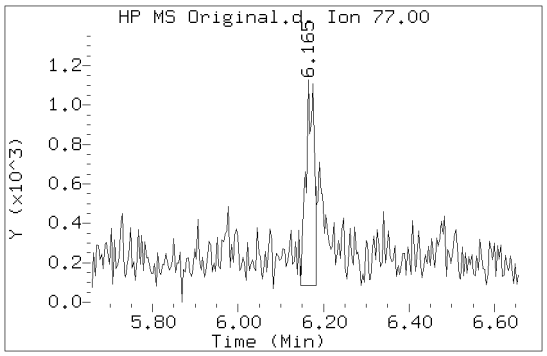
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09:00
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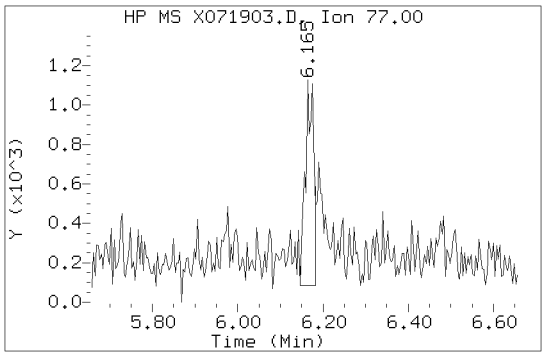
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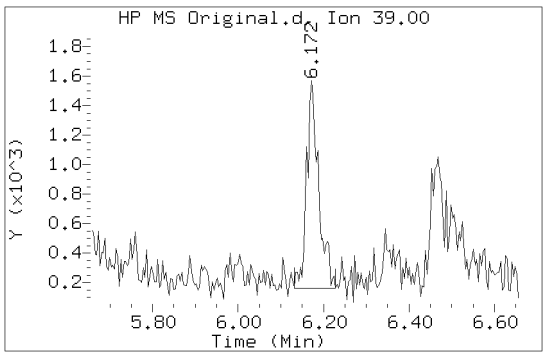
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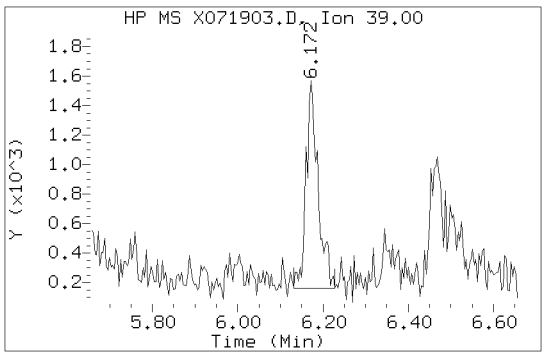
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25-Jul-2022
09:00
linh
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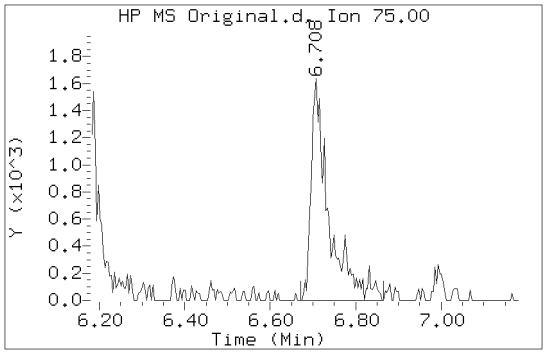
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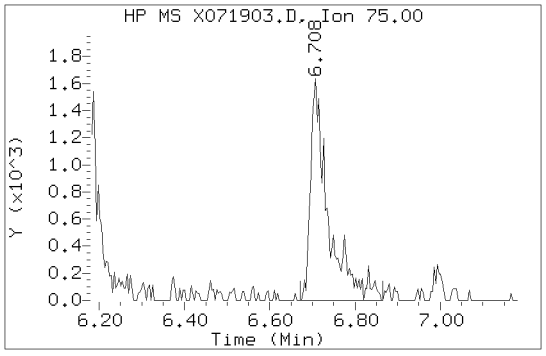
trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

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AFTER
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19-Aug-2022
10:59
linh
pham



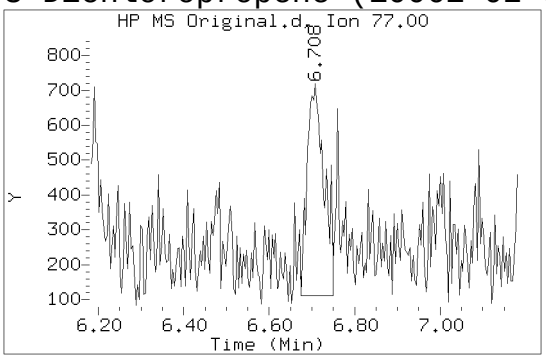
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

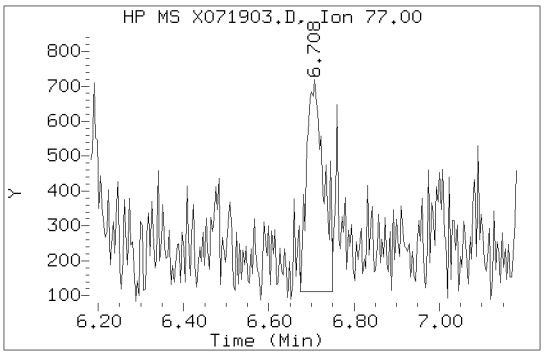
BEFORE

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25-Jul-2022
09:00
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AFTER

MASS
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1672
HEIGHT
607
19-Aug-2022
10:59
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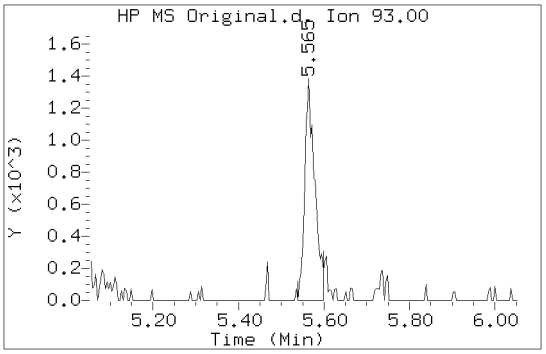


1,2-Dibromoethane (106-93-4)

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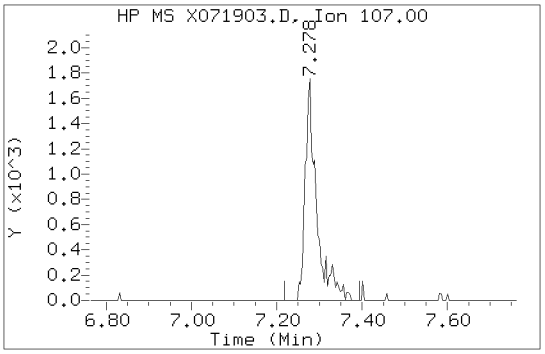
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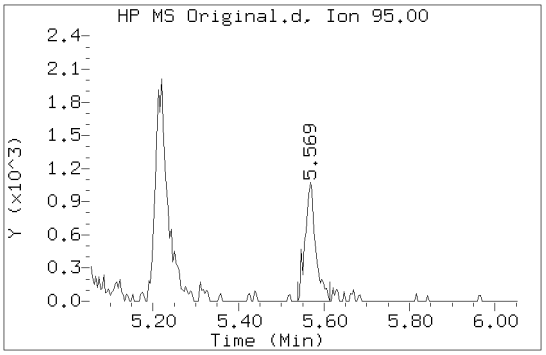
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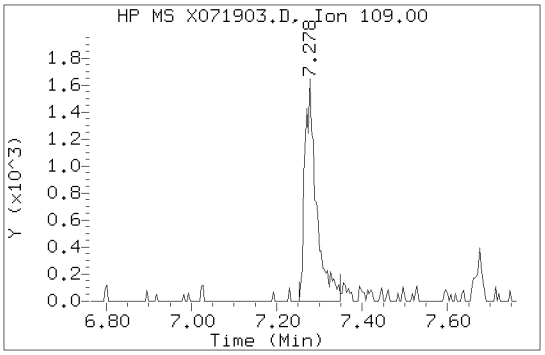
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AFTER

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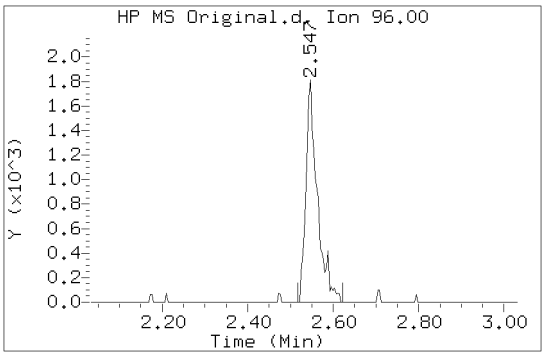


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

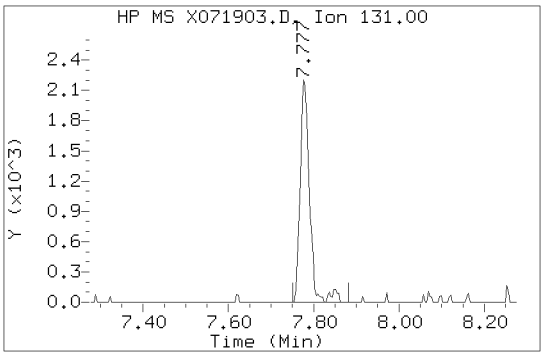
BEFORE

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AFTER

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HEIGHT
2203
19-Aug-2022
10:59
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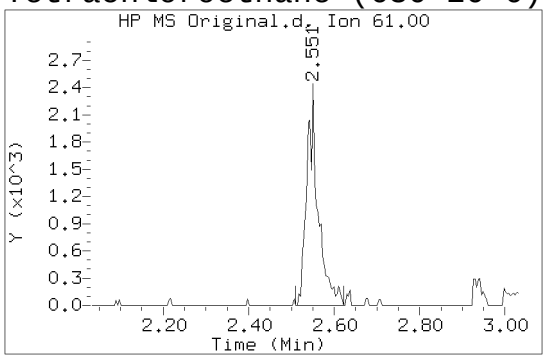


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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,1,2-Tetrachloroethane (630-20-6)

BEFORE

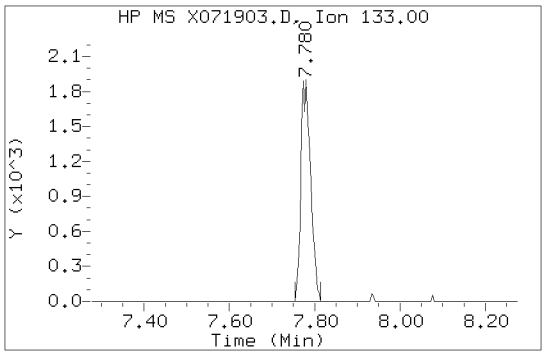
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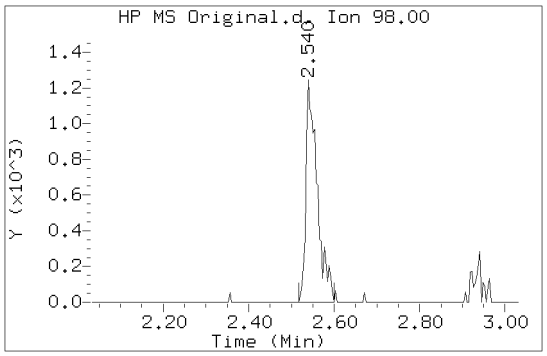
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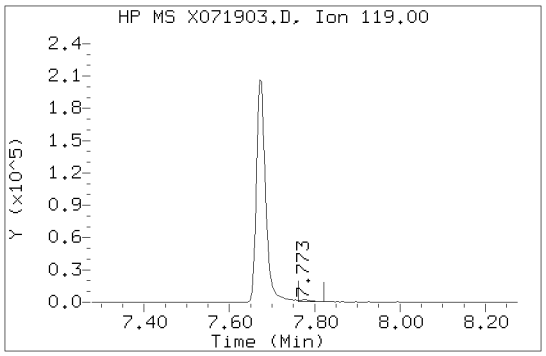
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25-Jul-2022
09:00
linh
pham



AFTER

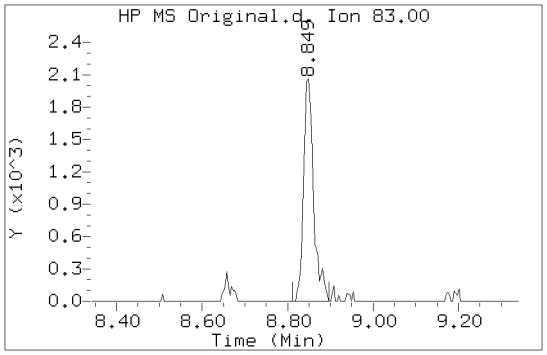
MASS
119
AREA
3743
HEIGHT
2153
19-Aug-2022
10:59
linh
pham



1,1,2,2-Tetrachloroethane (79-34-5)

BEFORE

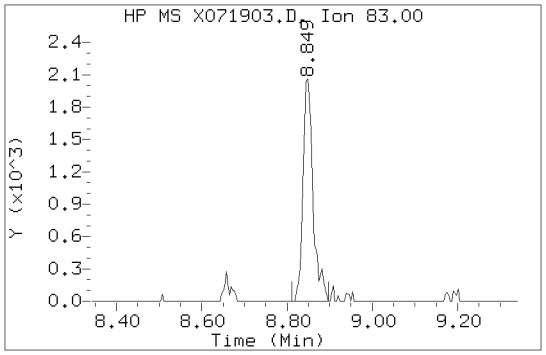
MASS
101
AREA
3138
HEIGHT
2150
25-Jul-2022
09:00
linh
pham



Reason Code:

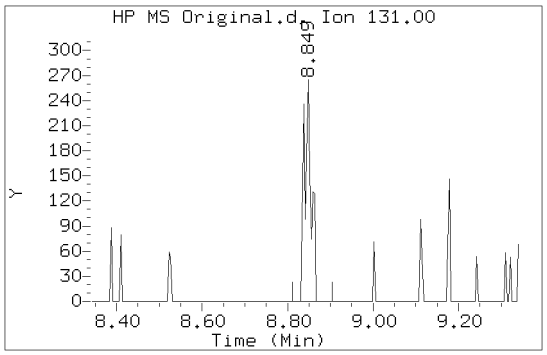
AFTER

MASS
83
AREA
3451
HEIGHT
2061
19-Aug-2022
10:59
linh
pham



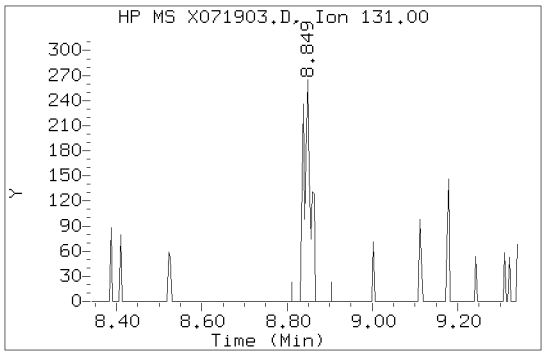
BEFORE

MASS
151
AREA
2944
HEIGHT
1769
25-Jul-2022
09:00
linh
pham



AFTER

MASS
131
AREA
304
HEIGHT
265
19-Aug-2022
10:59
linh
pham



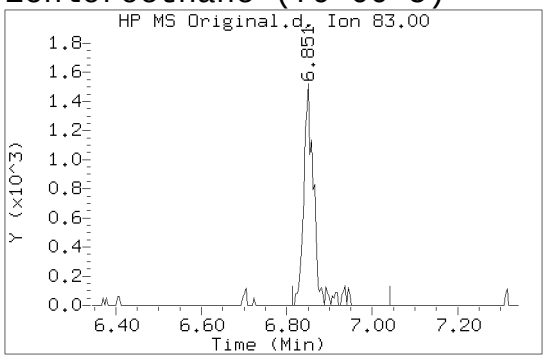
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2-Trichloroethane (79-00-5)

Reason Code:

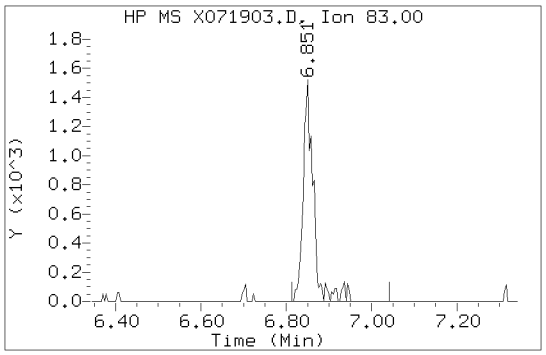
BEFORE

MASS
104
AREA
8853
HEIGHT
3020
25-Jul-2022
09:00
linh
pham



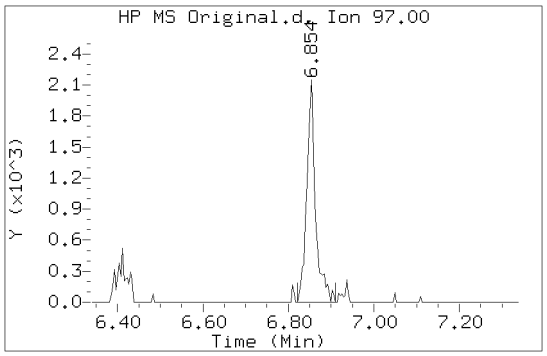
AFTER

MASS
83
AREA
2609
HEIGHT
1522
19-Aug-2022
10:59
linh
pham



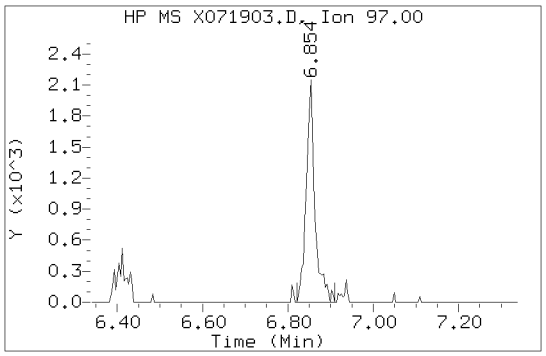
BEFORE

MASS
78
AREA
3427
HEIGHT
1842
25-Jul-2022
09:00
linh
pham



AFTER

MASS
97
AREA
3118
HEIGHT
2149
19-Aug-2022
10:59
linh
pham

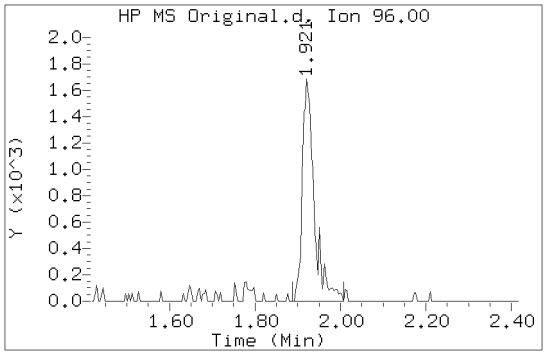


1,1-Dichloroethene (75-35-4)

Reason Code:

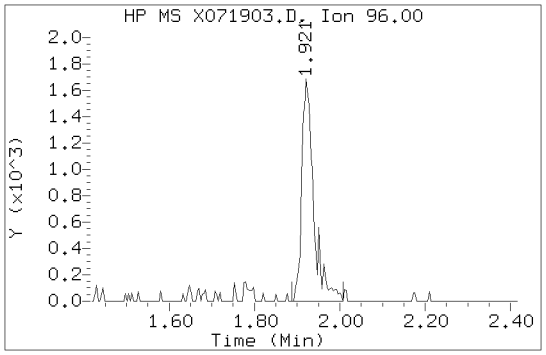
BEFORE

MASS
76
AREA
16886
HEIGHT
10303
25-Jul-2022
09:00
linh
pham



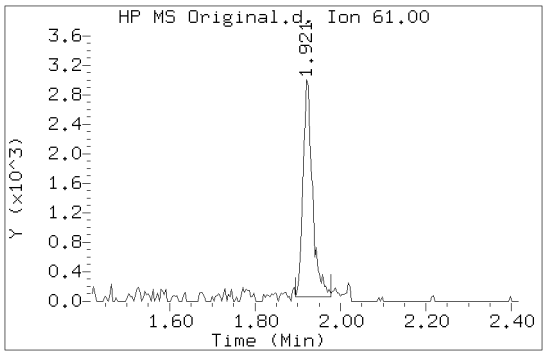
AFTER

MASS
96
AREA
3325
HEIGHT
1685
19-Aug-2022
10:59
linh
pham



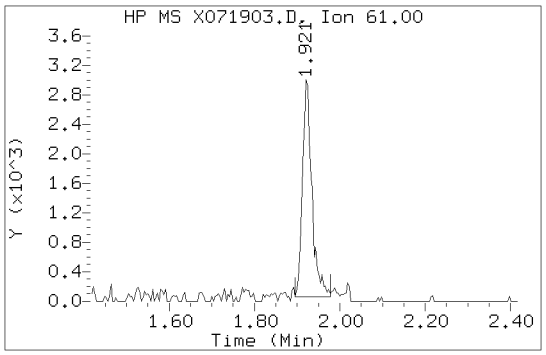
BEFORE

MASS
78
AREA
1233
HEIGHT
871
25-Jul-2022
09:00
linh
pham



AFTER

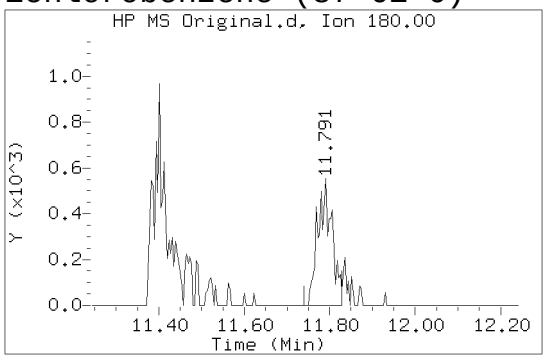
MASS
61
AREA
4630
HEIGHT
2947
19-Aug-2022
10:59
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

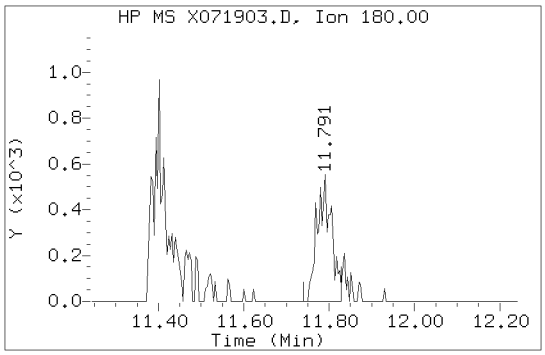
1,2,3-Trichlorobenzene (87-61-6)

BEFORE
MASS
77
AREA
5133
HEIGHT
2125
25-Jul-2022
09:00
linh
pham

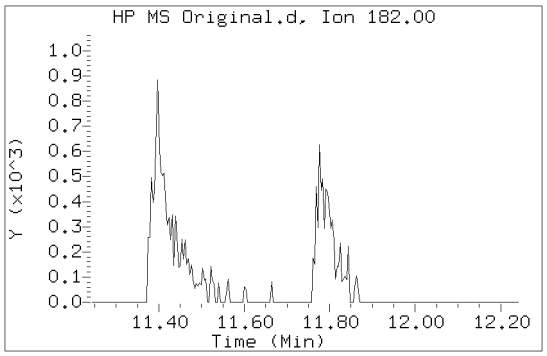


Reason Code:

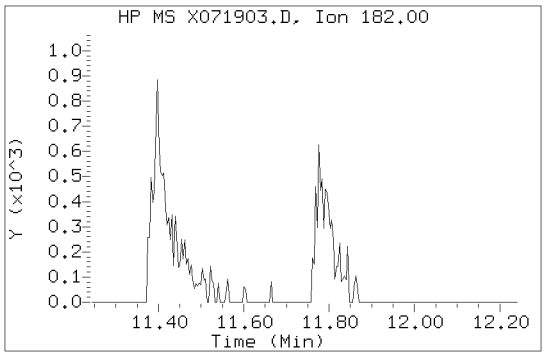
AFTER
MASS
180
AREA
1275
HEIGHT
555
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
97
AREA
728
HEIGHT
479
25-Jul-2022
09:00
linh
pham

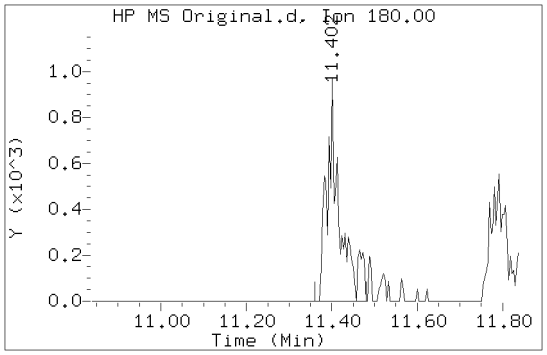


AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



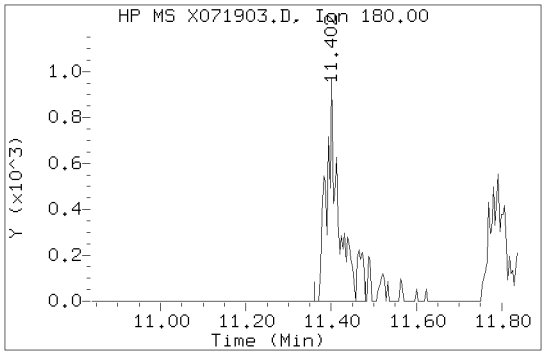
1,2,4-Trichlorobenzene (120-82-1)

BEFORE
MASS
93
AREA
2298
HEIGHT
1384
25-Jul-2022
09:00
linh
pham

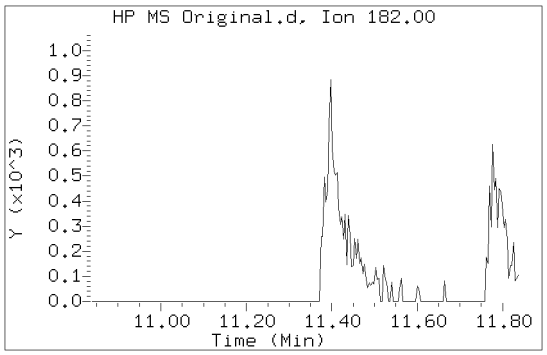


Reason Code:

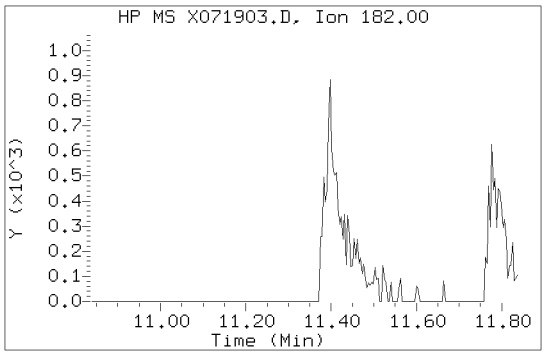
AFTER
MASS
180
AREA
2030
HEIGHT
968
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
95
AREA
1884
HEIGHT
1077
25-Jul-2022
09:00
linh
pham



AFTER
MASS
182
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



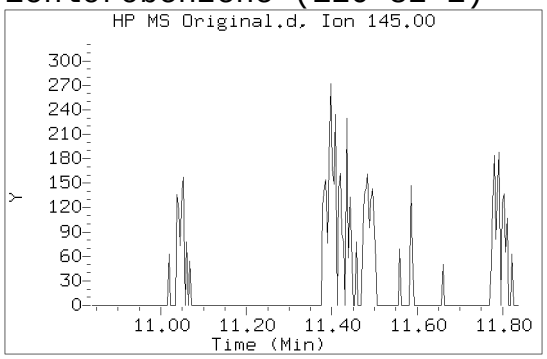
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

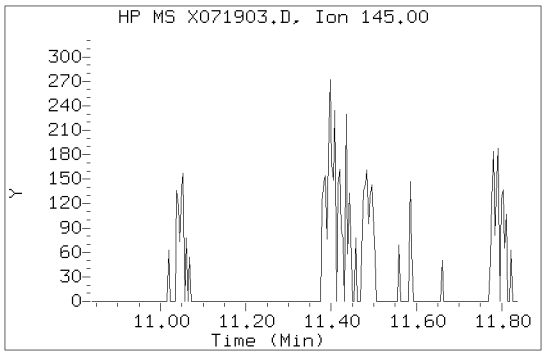
BEFORE

MASS
174
AREA
2657
HEIGHT
1337
25-Jul-2022
09:00
linh
pham



AFTER

MASS
145
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

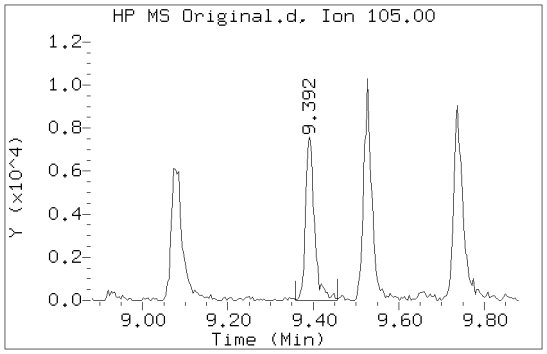


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

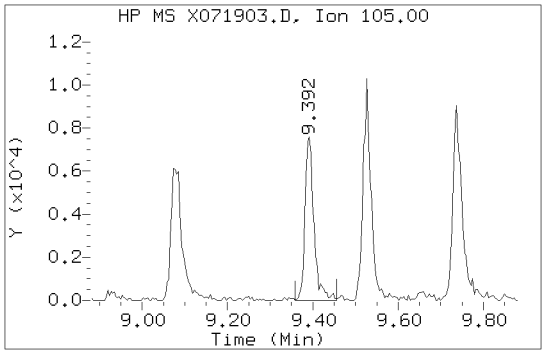
BEFORE

MASS
76
AREA
5230
HEIGHT
3017
25-Jul-2022
09:00
linh
pham



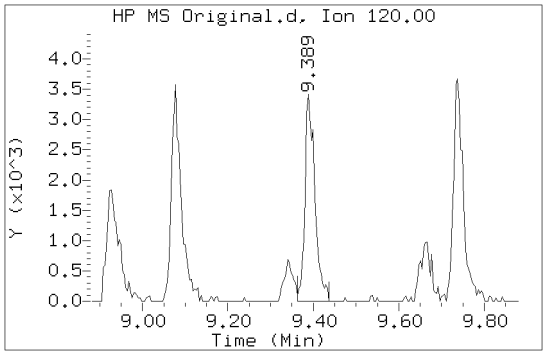
AFTER

MASS
105
AREA
11226
HEIGHT
7596
19-Aug-2022
10:59
linh
pham



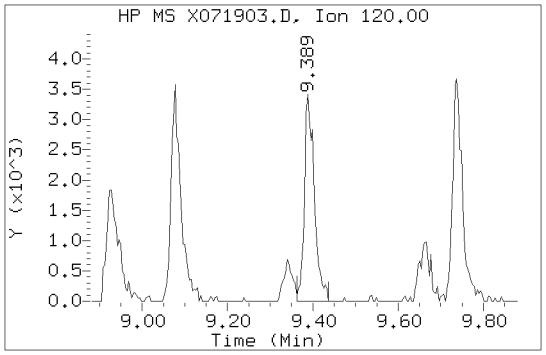
BEFORE

MASS
78
AREA
2030
HEIGHT
1255
25-Jul-2022
09:00
linh
pham



AFTER

MASS
120
AREA
5587
HEIGHT
3418
19-Aug-2022
10:59
linh
pham

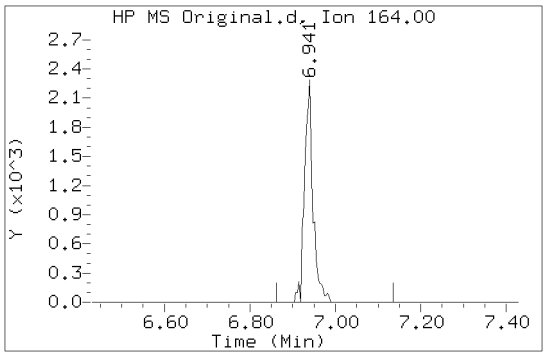


Tetrachloroethene (127-18-4)

Reason Code:

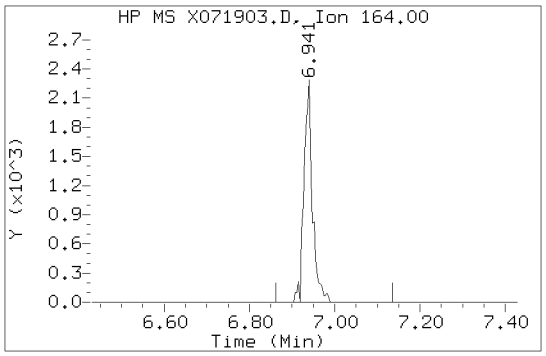
BEFORE

MASS
63
AREA
3868
HEIGHT
1977
25-Jul-2022
09:00
linh
pham



AFTER

MASS
164
AREA
3226
HEIGHT
2287
19-Aug-2022
10:59
linh
pham



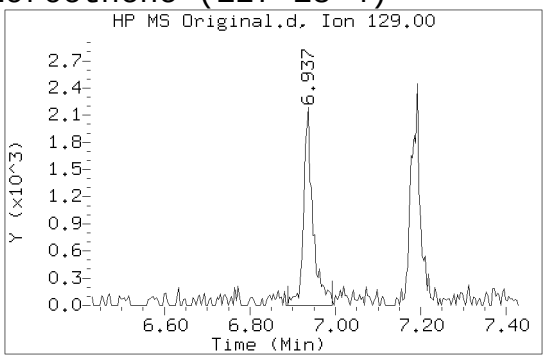
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrachloroethene (127-18-4)

Reason Code:

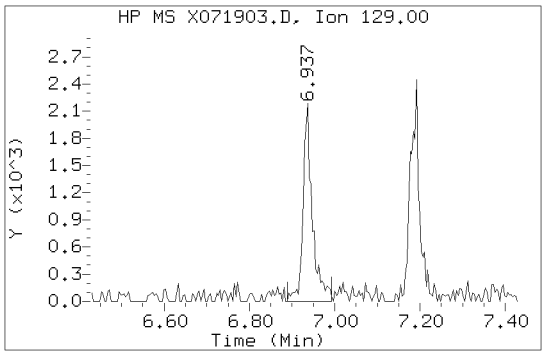
BEFORE

MASS
112
AREA
91
HEIGHT
181
25-Jul-2022
09:00
linh
pham



AFTER

MASS
129
AREA
3404
HEIGHT
2186
19-Aug-2022
10:59
linh
pham

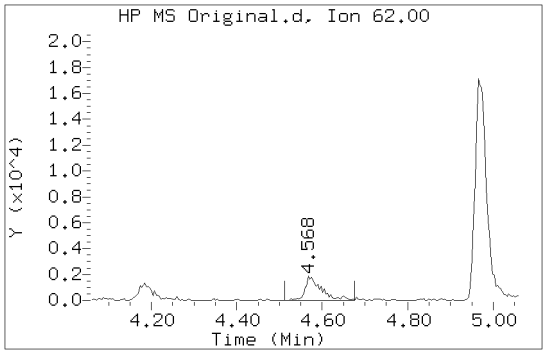


1,2-Dichloroethane (107-06-2)

Reason Code:

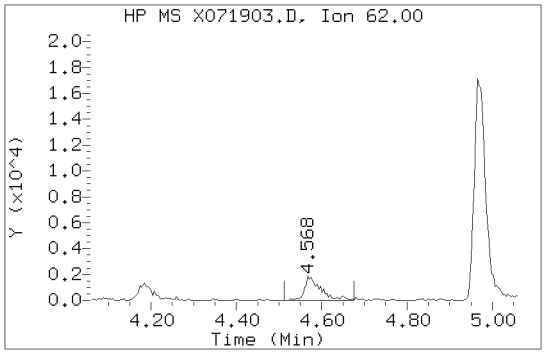
BEFORE

MASS
146
AREA
5548
HEIGHT
3293
25-Jul-2022
09:00
linh
pham



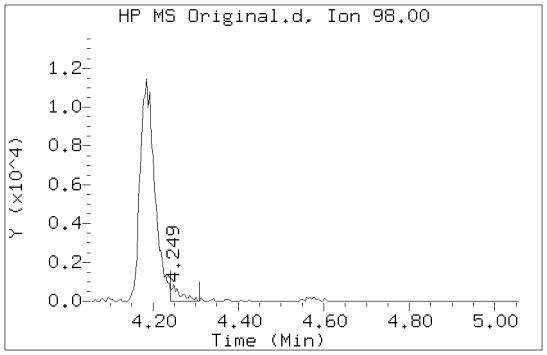
AFTER

MASS
62
AREA
4888
HEIGHT
1898
19-Aug-2022
10:59
linh
pham



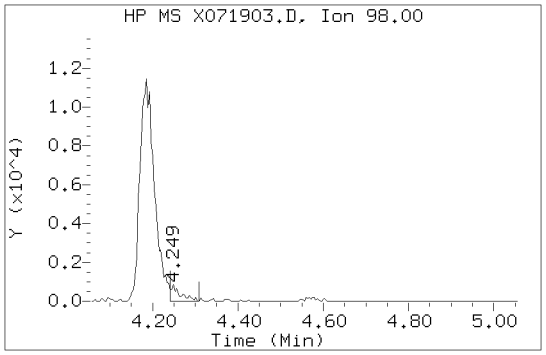
BEFORE

MASS
111
AREA
2270
HEIGHT
1209
25-Jul-2022
09:00
linh
pham



AFTER

MASS
98
AREA
1332
HEIGHT
847
19-Aug-2022
10:59
linh
pham

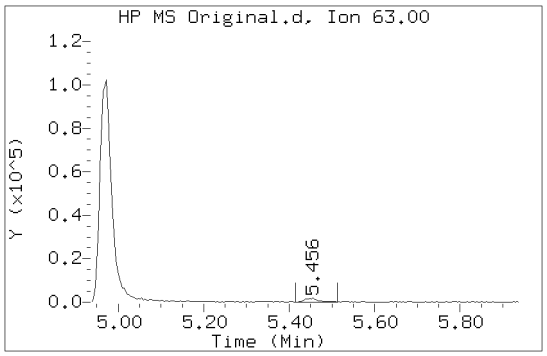


1,2-Dichloropropane (78-87-5)

Reason Code:

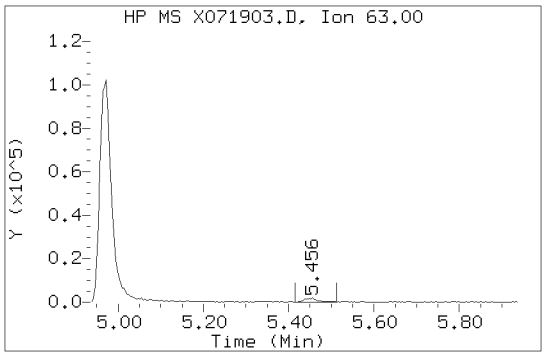
BEFORE

MASS
96
AREA
3384
HEIGHT
1813
25-Jul-2022
09:00
linh
pham



AFTER

MASS
63
AREA
3868
HEIGHT
1977
19-Aug-2022
10:59
linh
pham



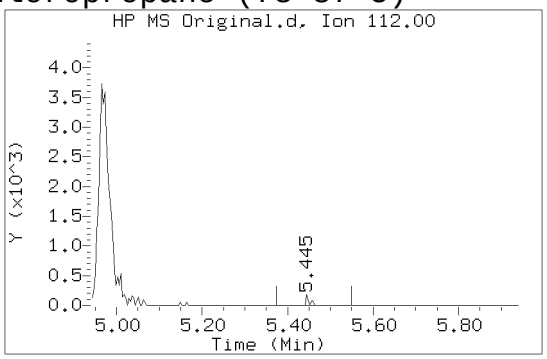
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichloropropane (78-87-5)

Reason Code:

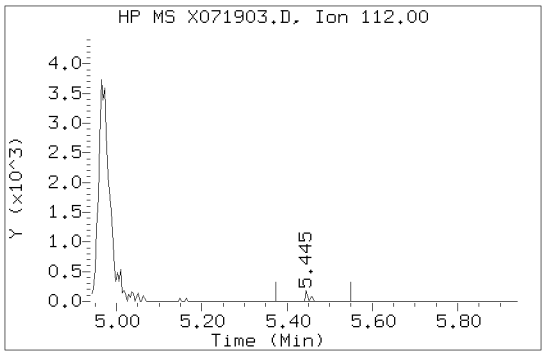
BEFORE

MASS
61
AREA
4515
HEIGHT
2443
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
91
HEIGHT
181
19-Aug-2022
10:59
linh
pham

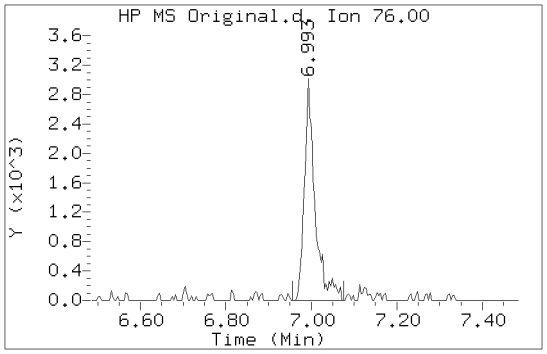


1,3-Dichloropropane (142-28-9)

Reason Code:

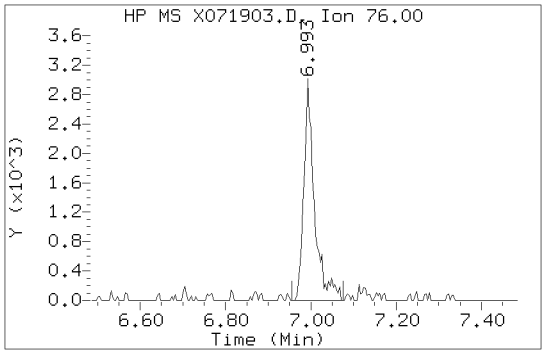
BEFORE

MASS
63
AREA
5606
HEIGHT
2531
25-Jul-2022
09:00
linh
pham



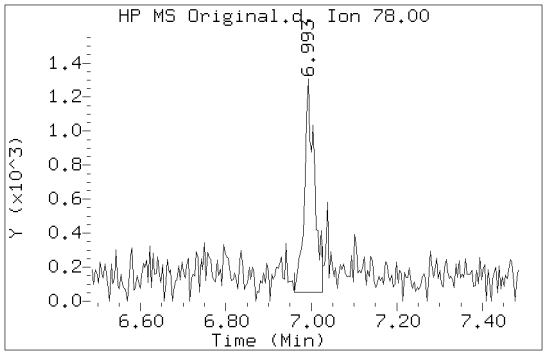
AFTER

MASS
76
AREA
5230
HEIGHT
3017
19-Aug-2022
10:59
linh
pham



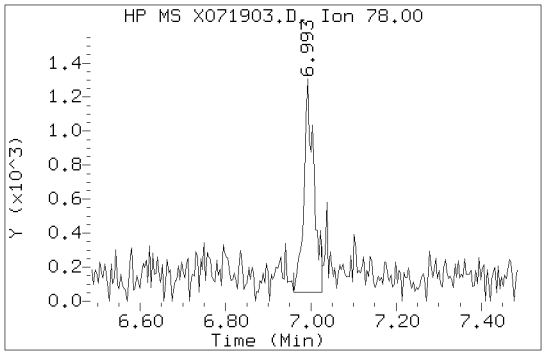
BEFORE

MASS
65
AREA
1710
HEIGHT
852
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
2030
HEIGHT
1255
19-Aug-2022
10:59
linh
pham

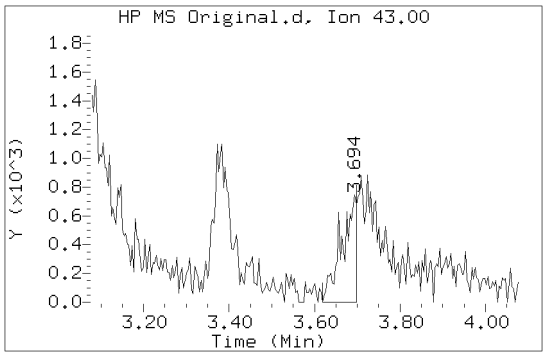


2-Butanone (78-93-3)

Reason Code:

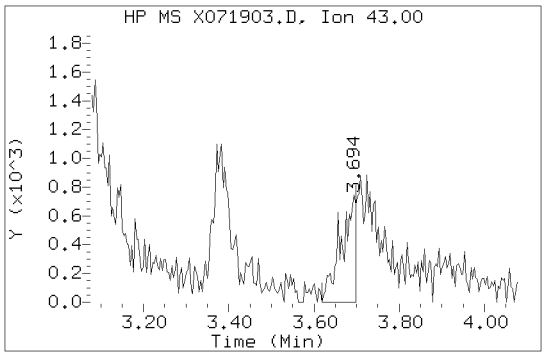
BEFORE

MASS
83
AREA
3451
HEIGHT
2061
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
1760
HEIGHT
747
19-Aug-2022
10:59
linh
pham



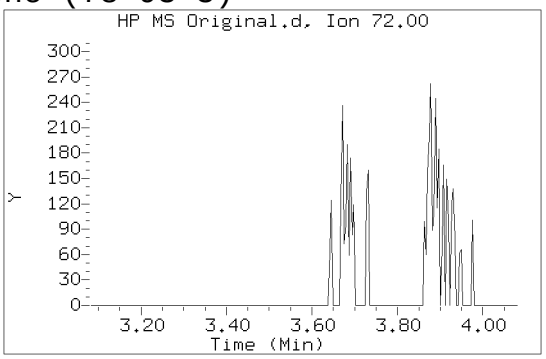
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

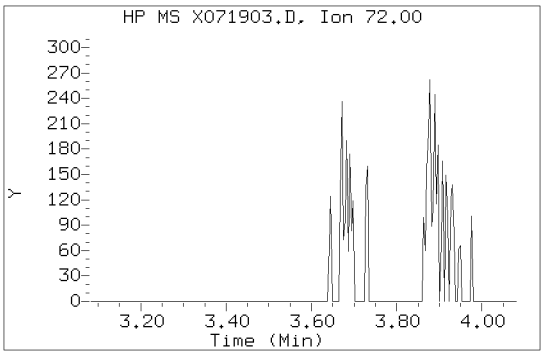
BEFORE

MASS
131
AREA
304
HEIGHT
265
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

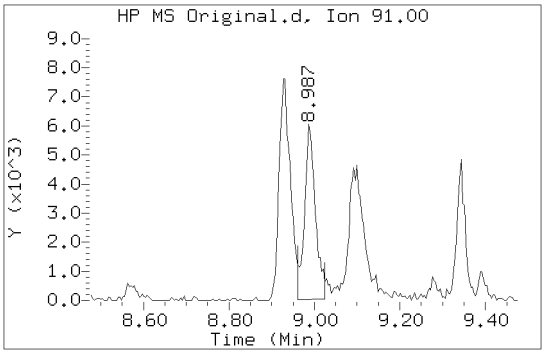


2-Chlorotoluene (95-49-8)

Reason Code:

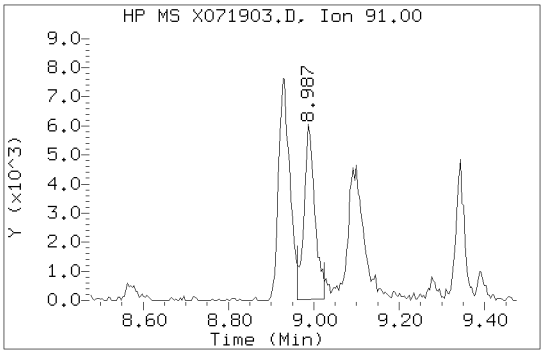
BEFORE

MASS
164
AREA
3226
HEIGHT
2287
25-Jul-2022
09:00
linh
pham



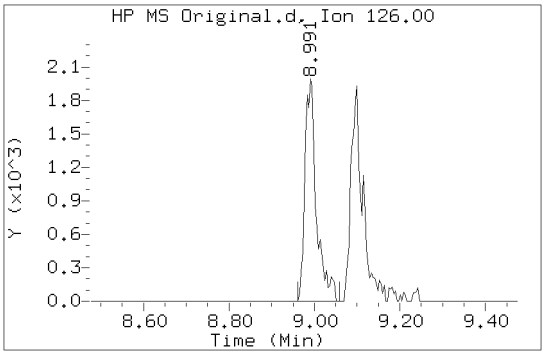
AFTER

MASS
91
AREA
10810
HEIGHT
6020
19-Aug-2022
10:59
linh
pham



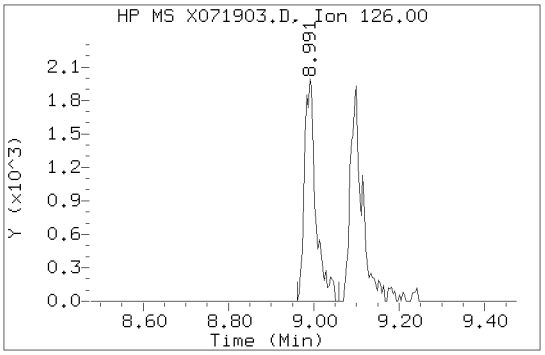
BEFORE

MASS
129
AREA
3404
HEIGHT
2186
25-Jul-2022
09:00
linh
pham



AFTER

MASS
126
AREA
3731
HEIGHT
1993
19-Aug-2022
10:59
linh
pham

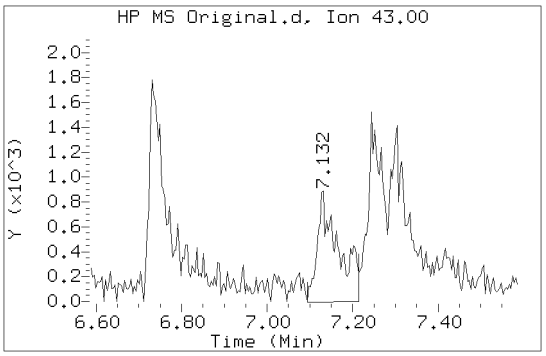


2-Hexanone (591-78-6)

Reason Code:

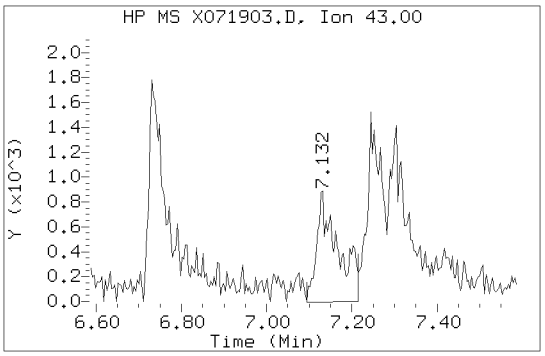
BEFORE

MASS
97
AREA
5496
HEIGHT
2194
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
3055
HEIGHT
891
19-Aug-2022
10:59
linh
pham



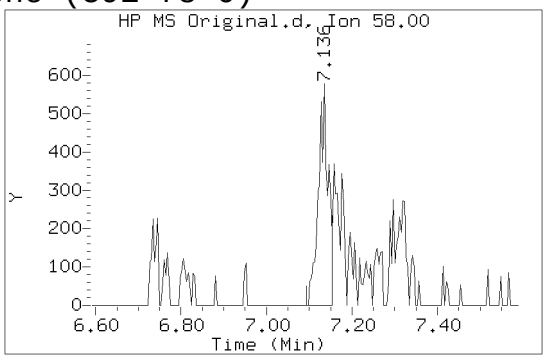
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

2-Hexanone (591-78-6)

Reason Code:

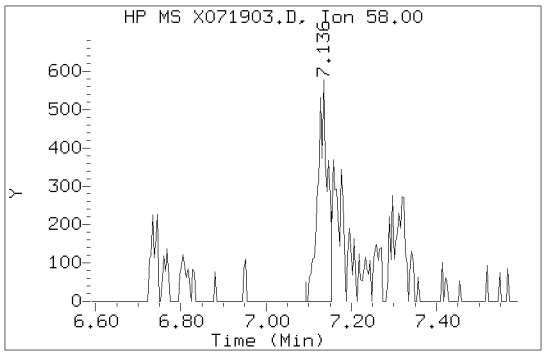
BEFORE

MASS
99
AREA
3434
HEIGHT
1650
25-Jul-2022
09:00
linh
pham



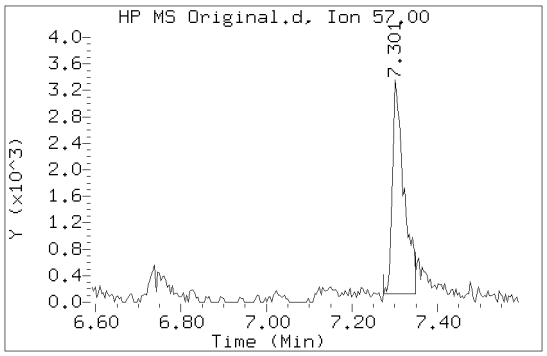
AFTER

MASS
58
AREA
919
HEIGHT
578
19-Aug-2022
10:59
linh
pham



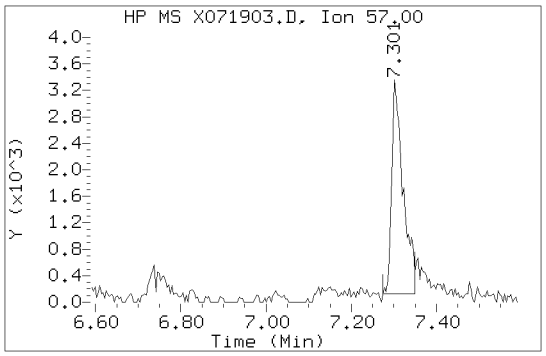
BEFORE

MASS
61
AREA
2652
HEIGHT
1251
25-Jul-2022
09:00
linh
pham



AFTER

MASS
57
AREA
5980
HEIGHT
3228
19-Aug-2022
10:59
linh
pham

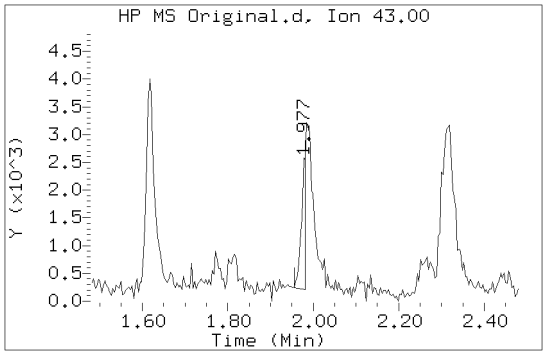


Acetone (67-64-1)

Reason Code:

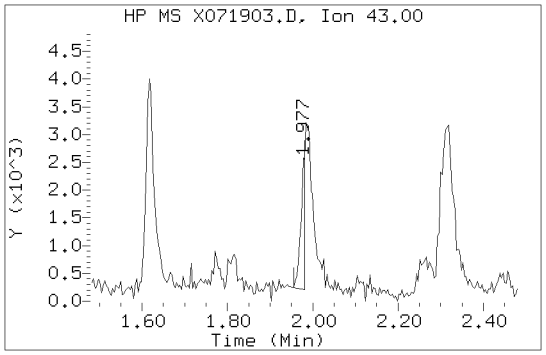
BEFORE

MASS
62
AREA
4102
HEIGHT
3481
25-Jul-2022
09:00
linh
pham



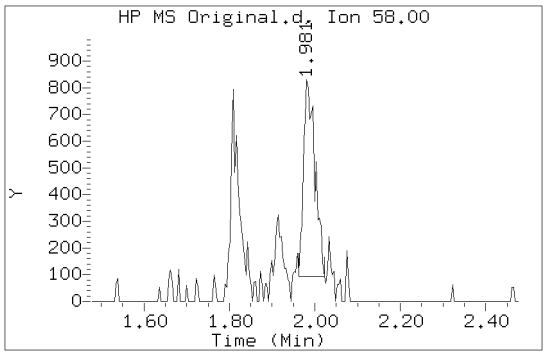
AFTER

MASS
43
AREA
1762
HEIGHT
2368
19-Aug-2022
10:59
linh
pham



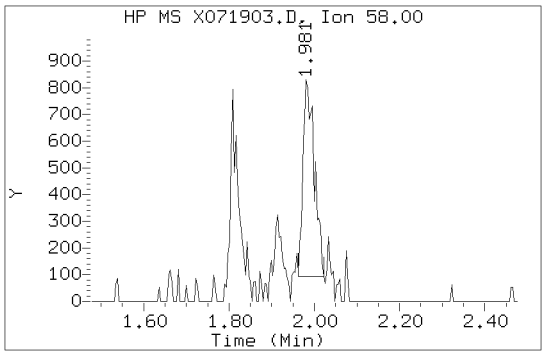
BEFORE

MASS
64
AREA
3620
HEIGHT
1767
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
1379
HEIGHT
737
19-Aug-2022
10:59
linh
pham

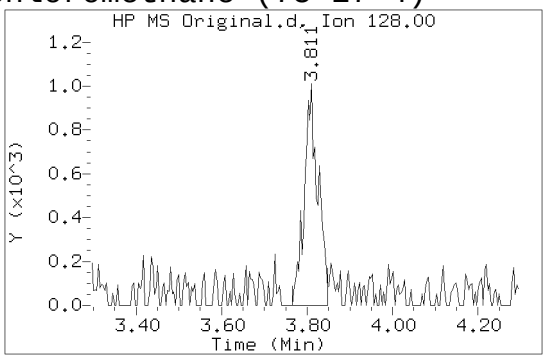


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

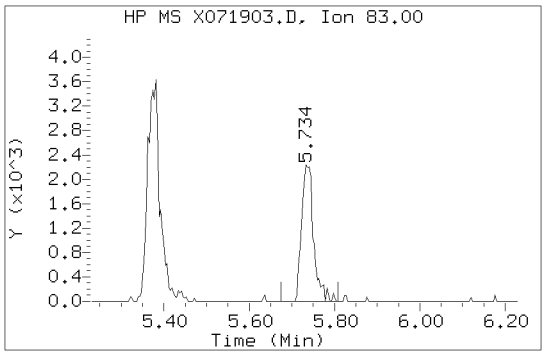
Bromodichloromethane (75-27-4)

Reason Code:

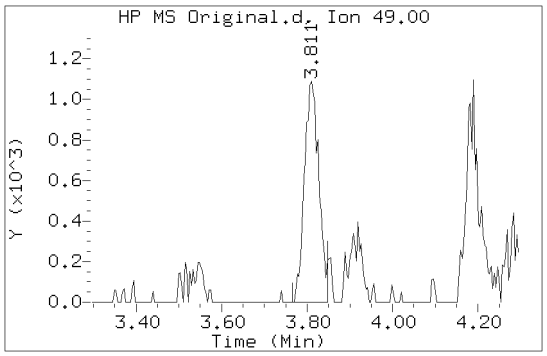
BEFORE
MASS
112
AREA
9208
HEIGHT
5442
25-Jul-2022
09:00
linh
pham



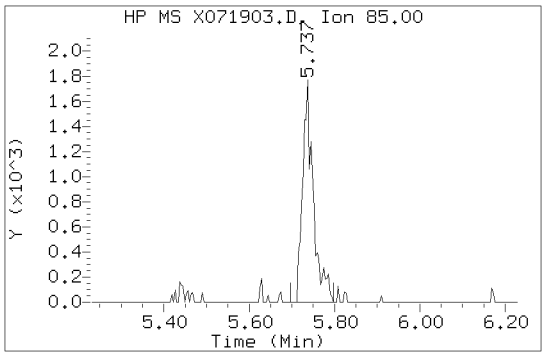
AFTER
MASS
83
AREA
4485
HEIGHT
2236
19-Aug-2022
10:59
linh
pham



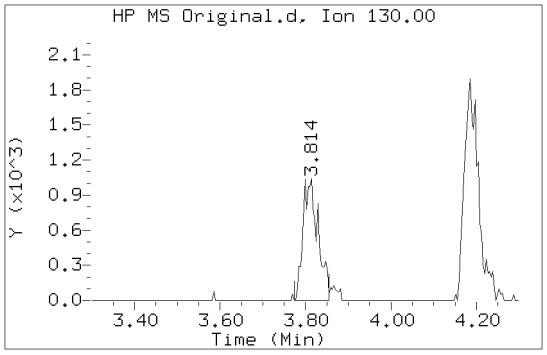
BEFORE
MASS
77
AREA
6659
HEIGHT
3709
25-Jul-2022
09:00
linh
pham



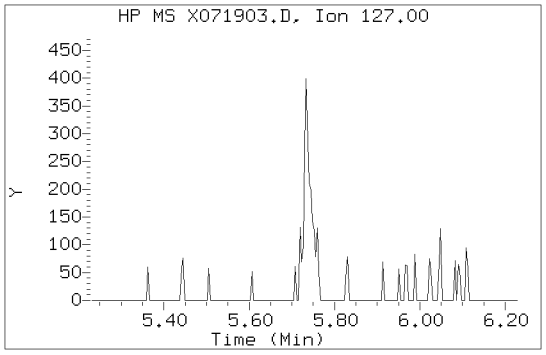
AFTER
MASS
85
AREA
3124
HEIGHT
1771
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
114
AREA
3227
HEIGHT
1854
25-Jul-2022
09:00
linh
pham



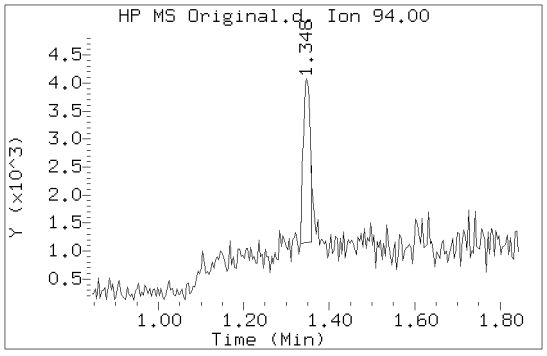
AFTER
MASS
127
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham



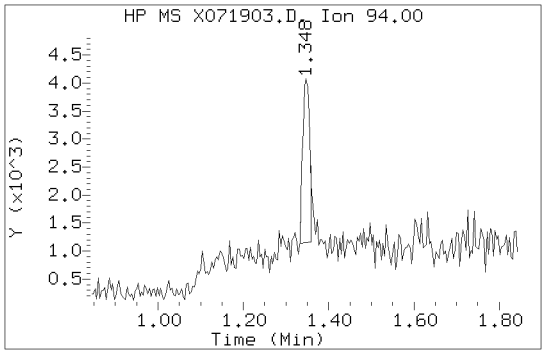
Bromomethane (74-83-9)

Reason Code:

BEFORE
MASS
83
AREA
6190
HEIGHT
2614
25-Jul-2022
09:00
linh
pham



AFTER
MASS
94
AREA
3413
HEIGHT
2924
19-Aug-2022
10:59
linh
pham



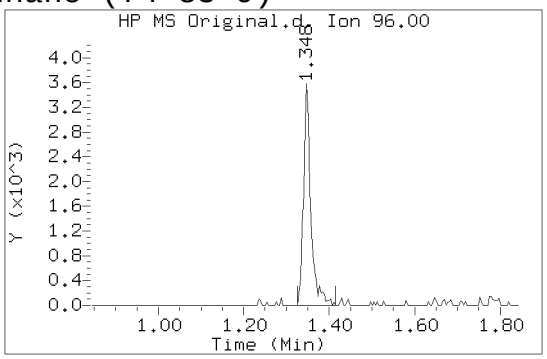
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Bromomethane (74-83-9)

Reason Code:

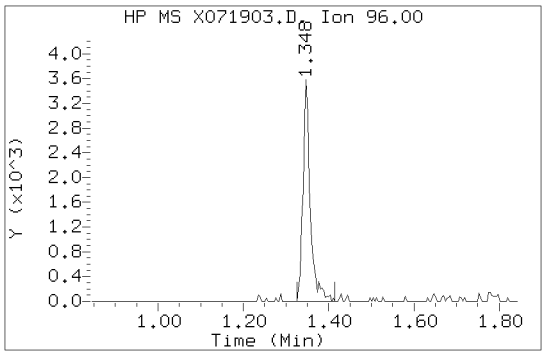
BEFORE

MASS
85
AREA
4424
HEIGHT
1752
25-Jul-2022
09:00
linh
pham



AFTER

MASS
96
AREA
4393
HEIGHT
3581
19-Aug-2022
10:59
linh
pham

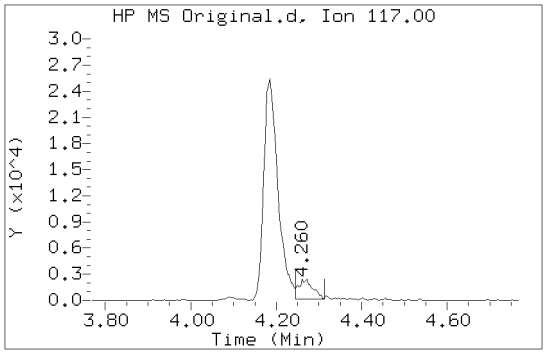


Carbon Tetrachloride (56-23-5)

Reason Code:

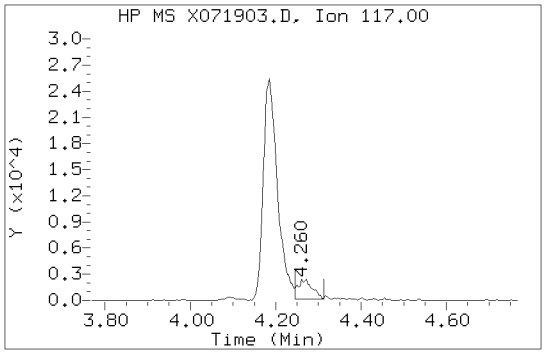
BEFORE

MASS
96
AREA
3635
HEIGHT
1411
25-Jul-2022
09:00
linh
pham



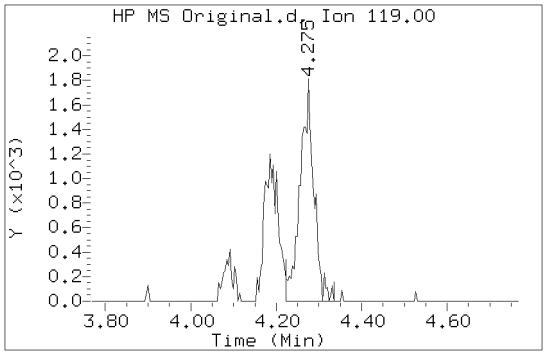
AFTER

MASS
117
AREA
5505
HEIGHT
2312
19-Aug-2022
10:59
linh
pham



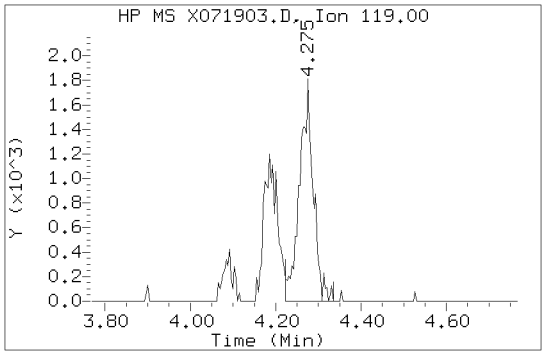
BEFORE

MASS
61
AREA
5502
HEIGHT
1984
25-Jul-2022
09:00
linh
pham



AFTER

MASS
119
AREA
4116
HEIGHT
1812
19-Aug-2022
10:59
linh
pham

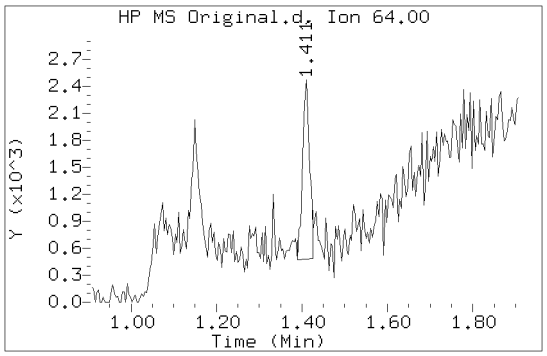


Chloroethane (75-00-3)

Reason Code:

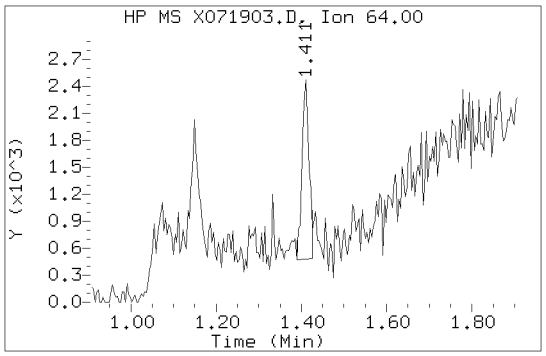
BEFORE

MASS
117
AREA
971157
HEIGHT
655204
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
2356
HEIGHT
1989
19-Aug-2022
10:59
linh
pham

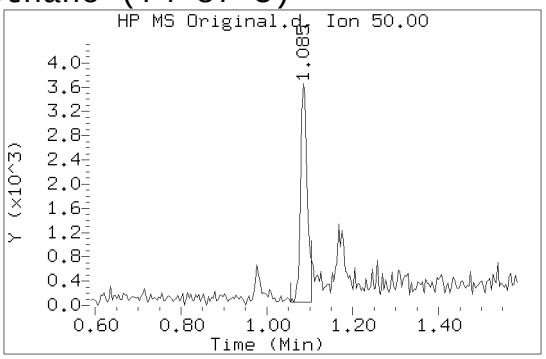


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Chloromethane (74-87-3)

BEFORE

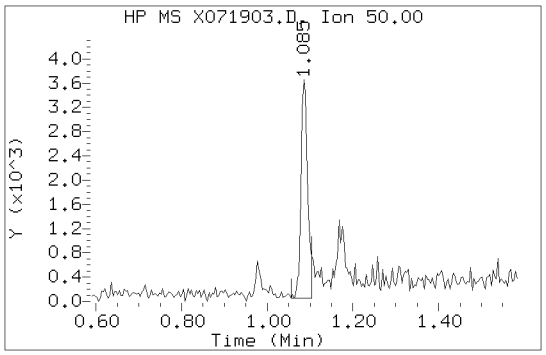
MASS
114
AREA
1081359
HEIGHT
557626
25-Jul-2022
09:00
linh
pham



AFTER

MASS
50
AREA
3959
HEIGHT
3607
19-Aug-2022
10:59
linh
pham

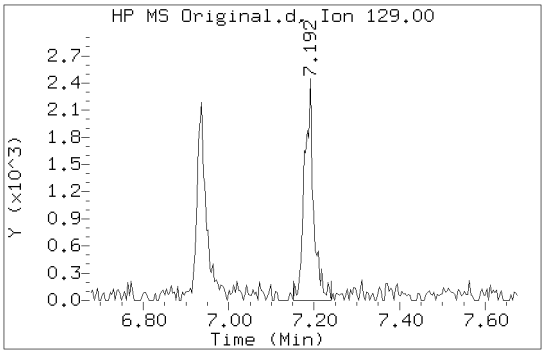
Reason Code:



Dibromochloromethane (124-48-1)

BEFORE

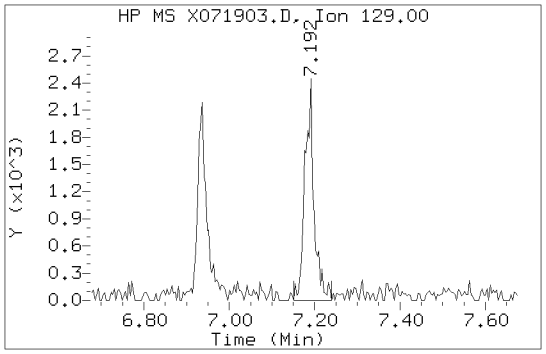
MASS
106
AREA
10839
HEIGHT
5861
25-Jul-2022
09:00
linh
pham



AFTER

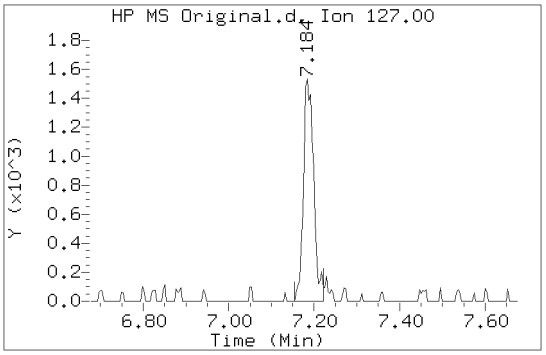
MASS
129
AREA
3661
HEIGHT
2448
19-Aug-2022
10:59
linh
pham

Reason Code:



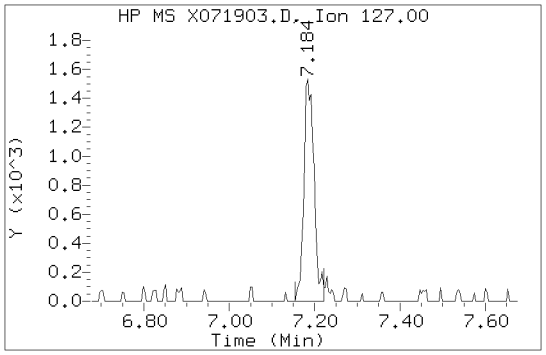
BEFORE

MASS
91
AREA
22202
HEIGHT
11255
25-Jul-2022
09:00
linh
pham



AFTER

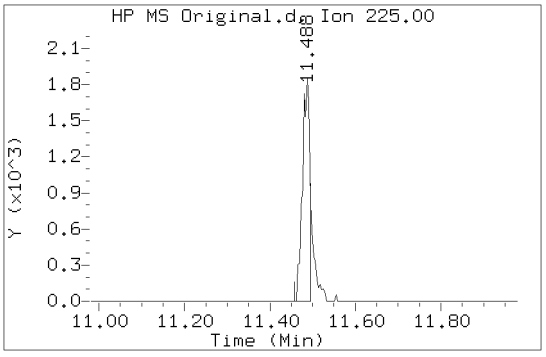
MASS
127
AREA
2593
HEIGHT
1534
19-Aug-2022
10:59
linh
pham



Hexachlorobutadiene (87-68-3)

BEFORE

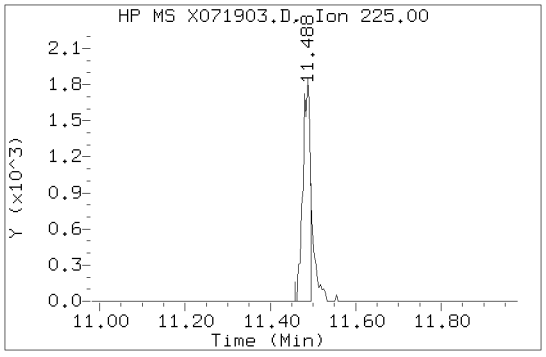
MASS
91
AREA
14364
HEIGHT
7624
25-Jul-2022
09:00
linh
pham



AFTER

MASS
225
AREA
2233
HEIGHT
1848
19-Aug-2022
10:59
linh
pham

Reason Code:



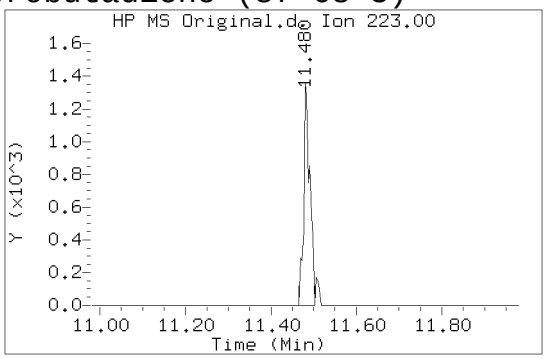
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Hexachlorobutadiene (87-68-3)

Reason Code:

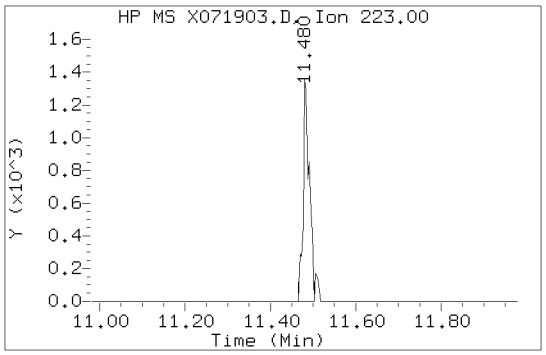
BEFORE

MASS
120
AREA
3739
HEIGHT
1832
25-Jul-2022
09:00
linh
pham



AFTER

MASS
223
AREA
1401
HEIGHT
1354
19-Aug-2022
10:59
linh
pham

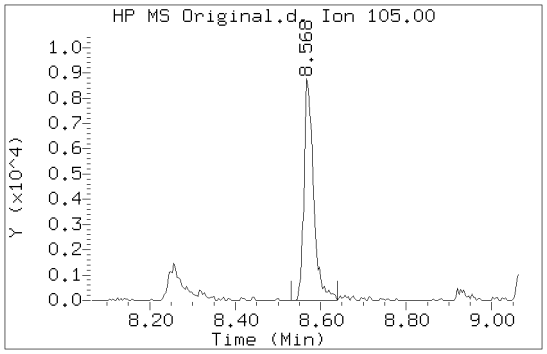


Isopropylbenzene (98-82-8)

Reason Code:

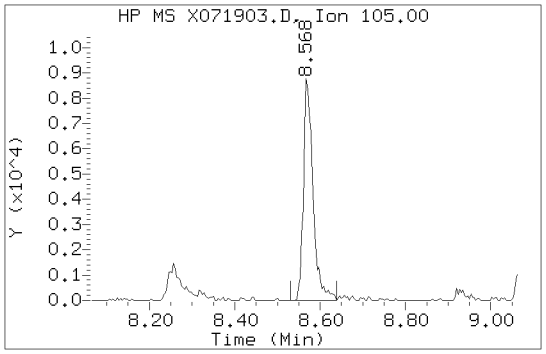
BEFORE

MASS
91
AREA
10810
HEIGHT
6020
25-Jul-2022
09:00
linh
pham



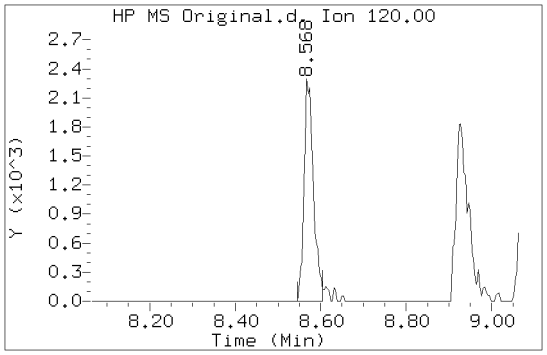
AFTER

MASS
105
AREA
13970
HEIGHT
8770
19-Aug-2022
10:59
linh
pham



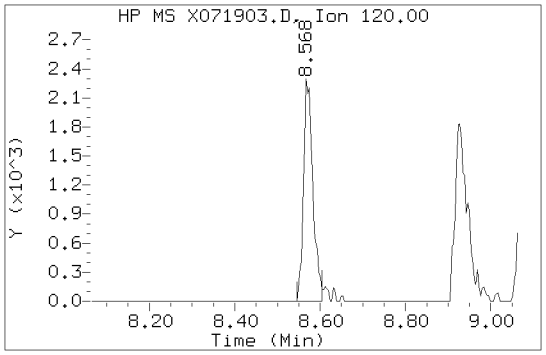
BEFORE

MASS
126
AREA
3731
HEIGHT
1993
25-Jul-2022
09:00
linh
pham



AFTER

MASS
120
AREA
3569
HEIGHT
2296
19-Aug-2022
10:59
linh
pham

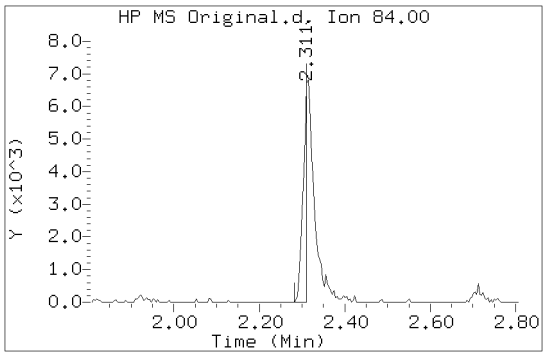


Methylene Chloride (75-09-2)

Reason Code:

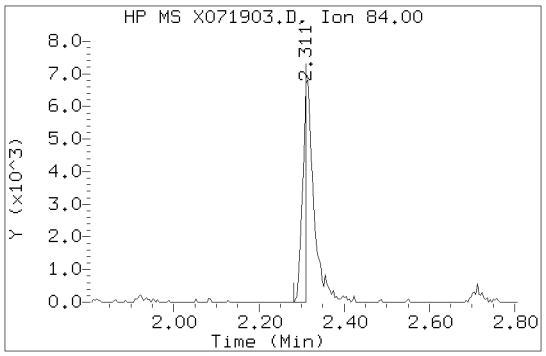
BEFORE

MASS
91
AREA
11731
HEIGHT
4585
25-Jul-2022
09:00
linh
pham



AFTER

MASS
84
AREA
4801
HEIGHT
6706
19-Aug-2022
10:59
linh
pham



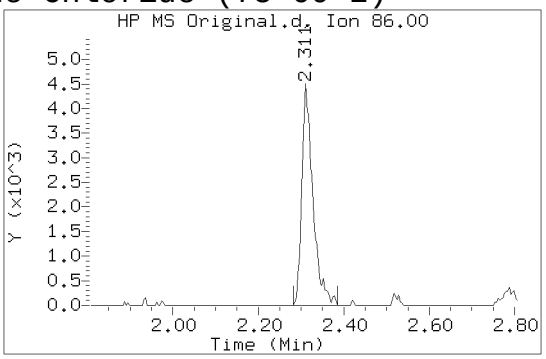
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Methylene Chloride (75-09-2)

Reason Code:

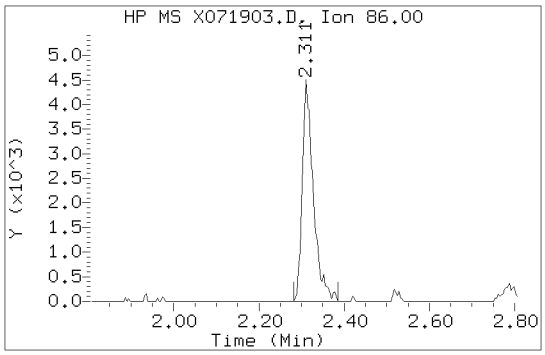
BEFORE

MASS
126
AREA
3659
HEIGHT
1928
25-Jul-2022
09:00
linh
pham



AFTER

MASS
86
AREA
8290
HEIGHT
4505
19-Aug-2022
10:59
linh
pham

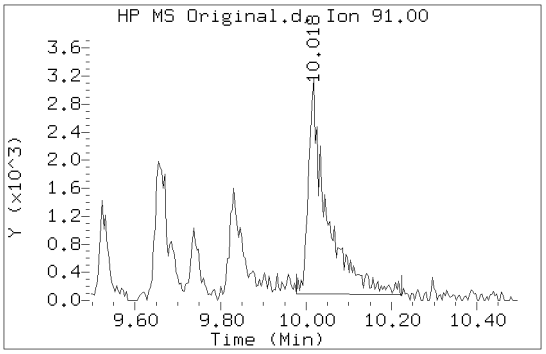


n-Butylbenzene (104-51-8)

Reason Code:

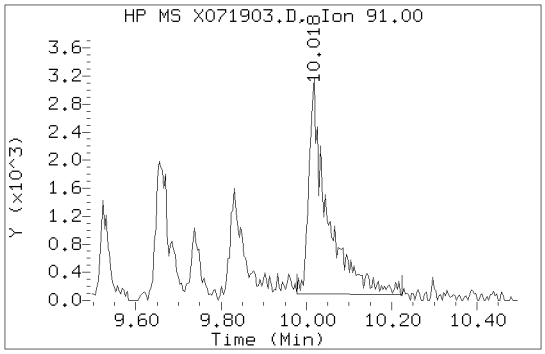
BEFORE

MASS
119
AREA
9259
HEIGHT
6692
25-Jul-2022
09:00
linh
pham



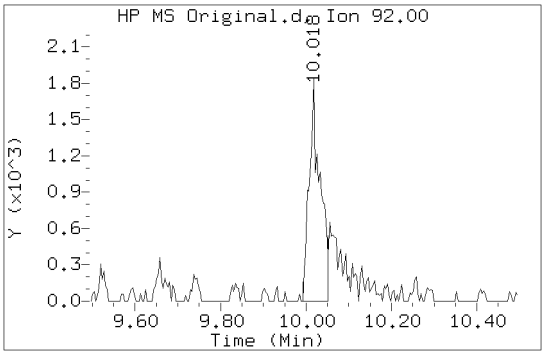
AFTER

MASS
91
AREA
9255
HEIGHT
3074
19-Aug-2022
10:59
linh
pham



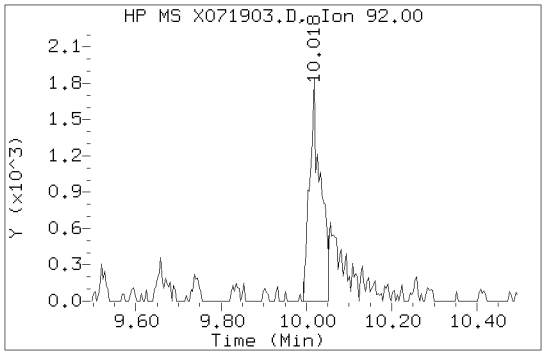
BEFORE

MASS
91
AREA
6295
HEIGHT
4785
25-Jul-2022
09:00
linh
pham



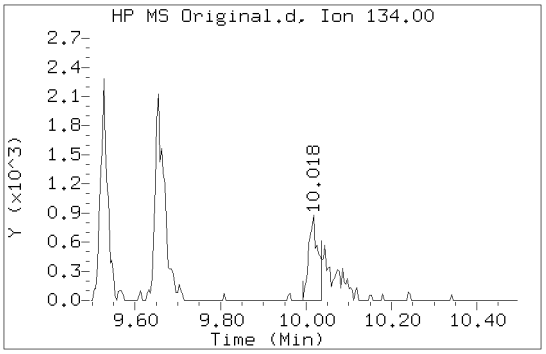
AFTER

MASS
92
AREA
3270
HEIGHT
1836
19-Aug-2022
10:59
linh
pham



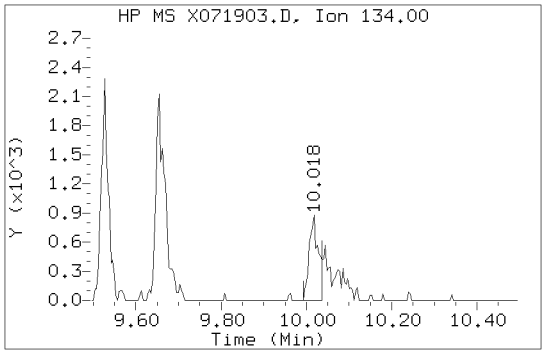
BEFORE

MASS
134
AREA
2791
HEIGHT
2284
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
1329
HEIGHT
881
19-Aug-2022
10:59
linh
pham



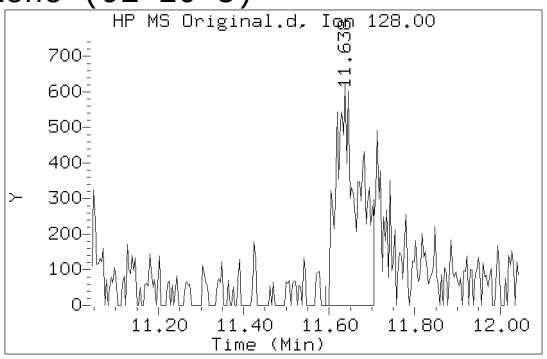
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Naphthalene (91-20-3)

Reason Code:

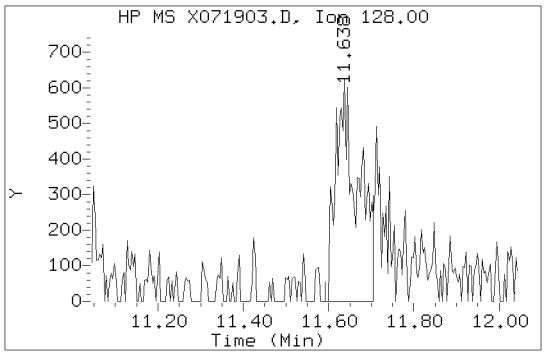
BEFORE

MASS
105
AREA
13047
HEIGHT
10290
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
2252
HEIGHT
623
19-Aug-2022
10:59
linh
pham

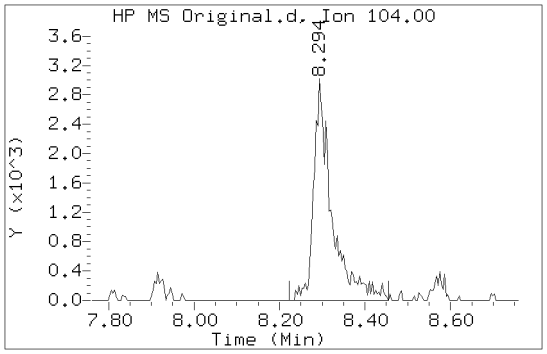


Styrene (100-42-5)

Reason Code:

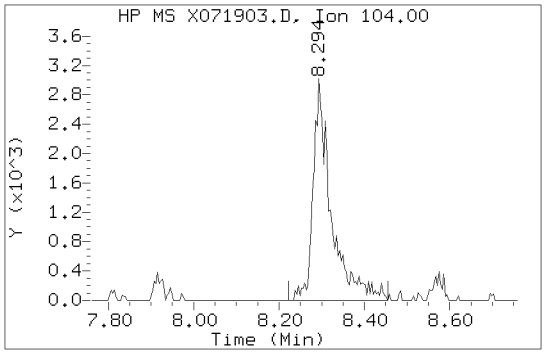
BEFORE

MASS
225
AREA
2233
HEIGHT
1848
25-Jul-2022
09:00
linh
pham



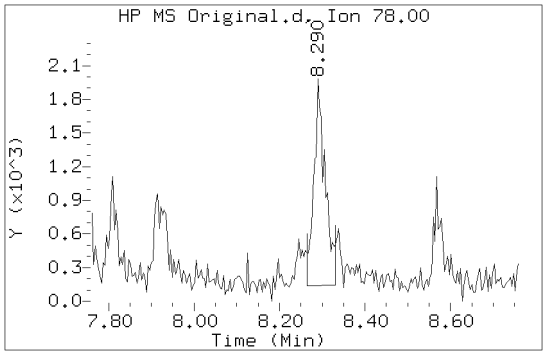
AFTER

MASS
104
AREA
8853
HEIGHT
3020
19-Aug-2022
10:59
linh
pham



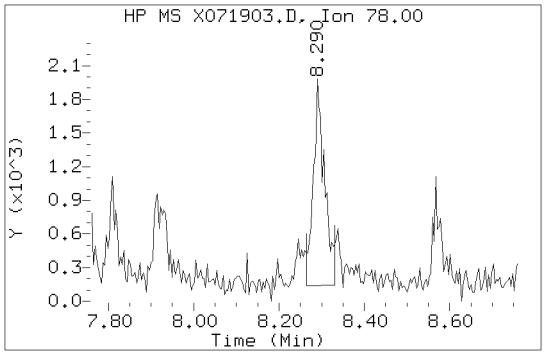
BEFORE

MASS
223
AREA
1401
HEIGHT
1354
25-Jul-2022
09:00
linh
pham



AFTER

MASS
78
AREA
3427
HEIGHT
1842
19-Aug-2022
10:59
linh
pham

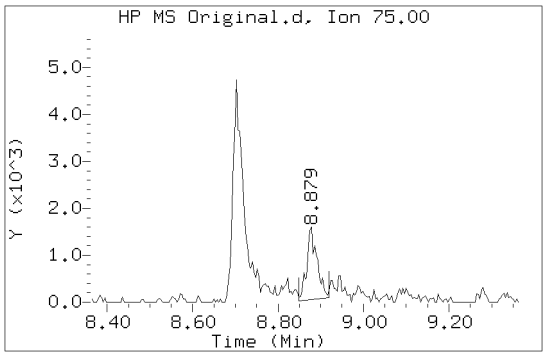


1,2,3-Trichloropropane (96-18-4)

Reason Code:

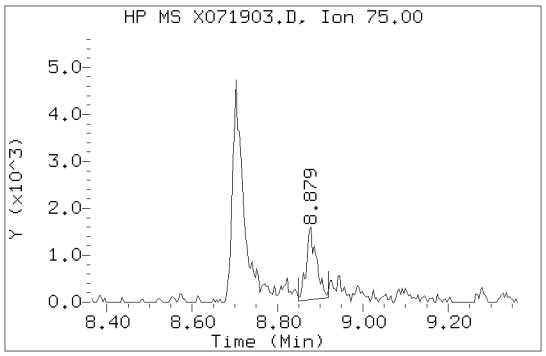
BEFORE

MASS
180
AREA
1275
HEIGHT
555
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
2596
HEIGHT
1548
19-Aug-2022
10:59
linh
pham



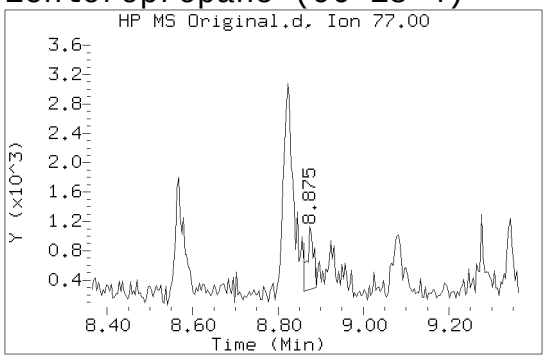
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,3-Trichloropropane (96-18-4)

Reason Code:

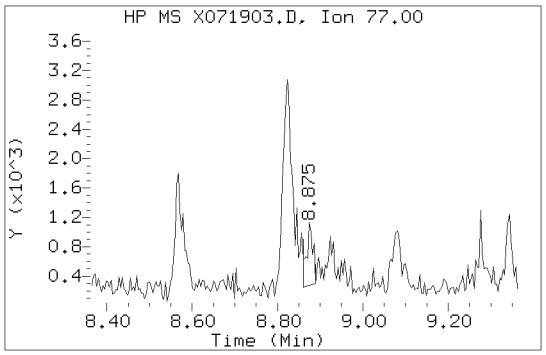
BEFORE

MASS
182
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
920
HEIGHT
859
19-Aug-2022
10:59
linh
pham

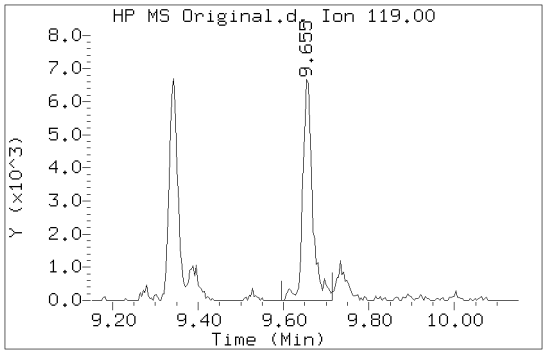


p-Isopropyltoluene (99-87-6)

Reason Code:

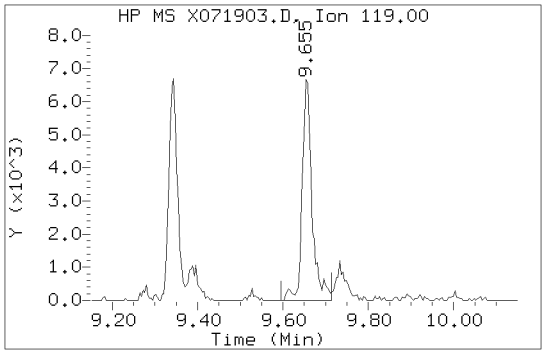
BEFORE

MASS
106
AREA
16597
HEIGHT
9320
25-Jul-2022
09:00
linh
pham



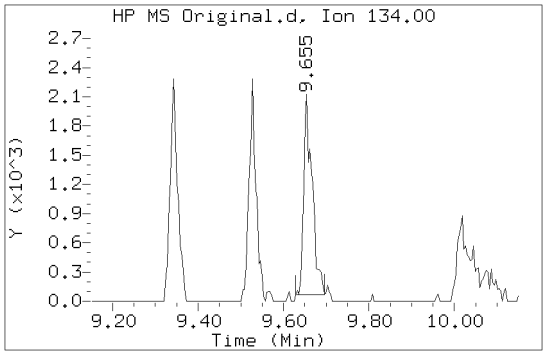
AFTER

MASS
119
AREA
11018
HEIGHT
6684
19-Aug-2022
10:59
linh
pham



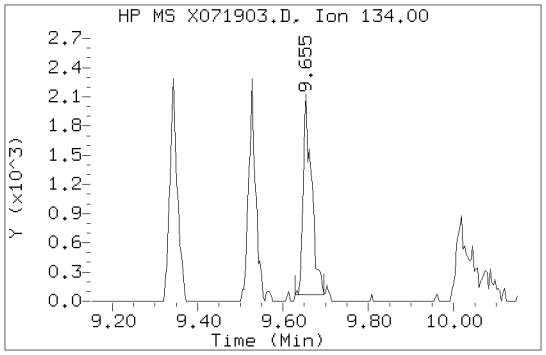
BEFORE

MASS
91
AREA
0
HEIGHT
0
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
2906
HEIGHT
2066
19-Aug-2022
10:59
linh
pham

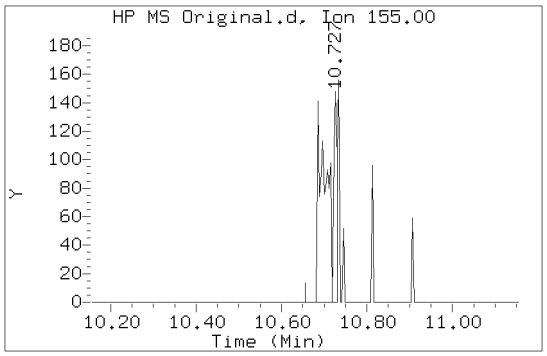


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

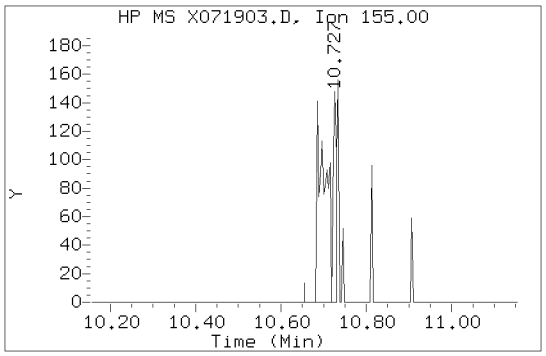
BEFORE

MASS
73
AREA
9993
HEIGHT
5235
25-Jul-2022
09:00
linh
pham



AFTER

MASS
155
AREA
270
HEIGHT
148
19-Aug-2022
10:59
linh
pham



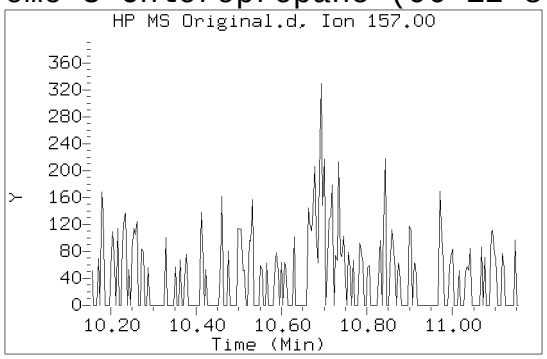
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071903.D
Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

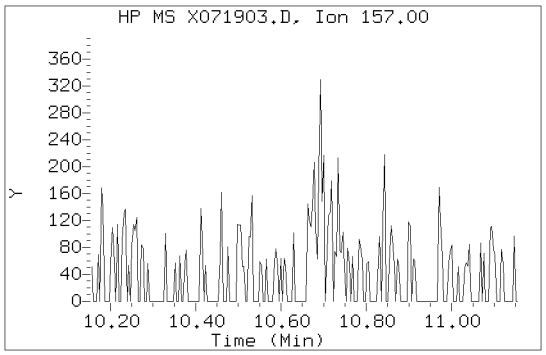
BEFORE

MASS
57
AREA
7497
HEIGHT
3757
25-Jul-2022
09:00
linh
pham



AFTER

MASS
157
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

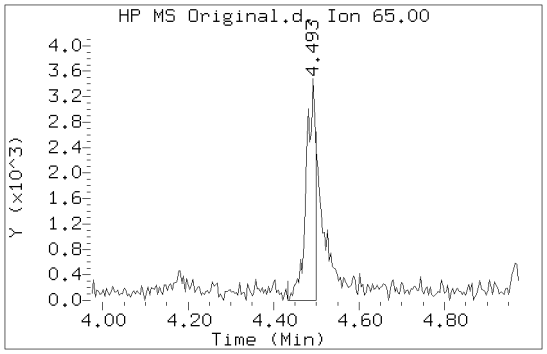


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

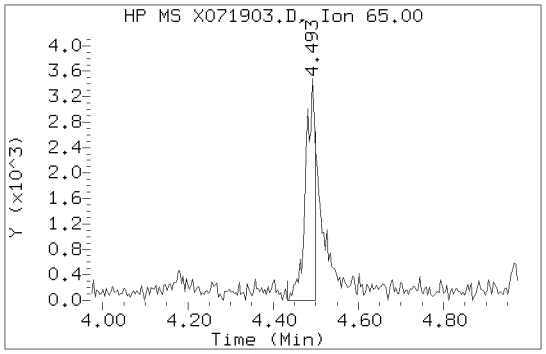
BEFORE

MASS
113
AREA
4991
HEIGHT
2969
25-Jul-2022
09:00
linh
pham



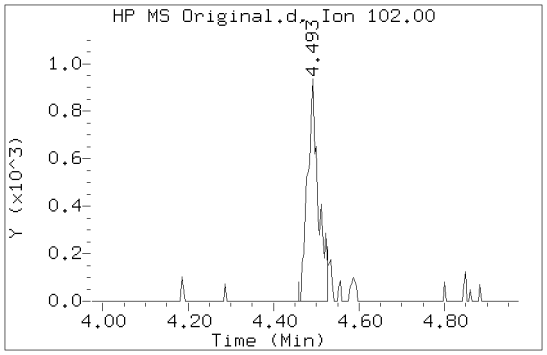
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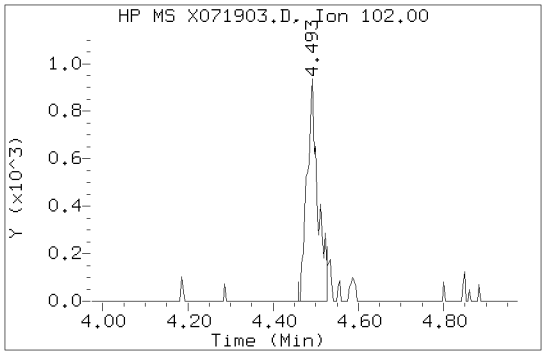
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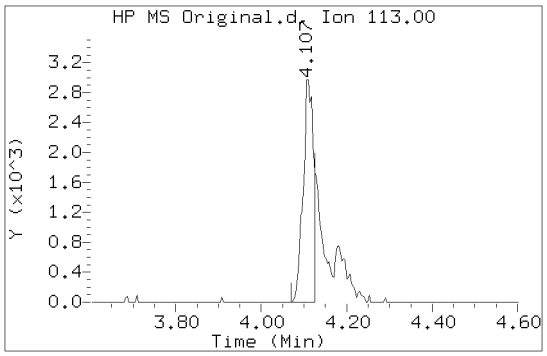


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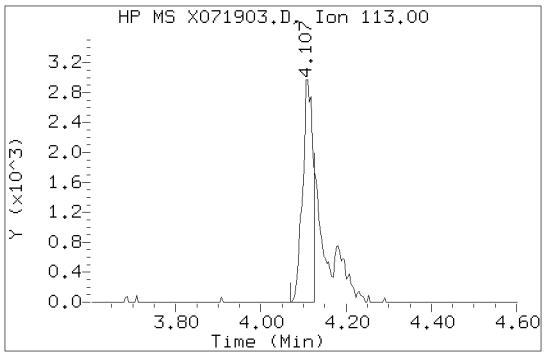
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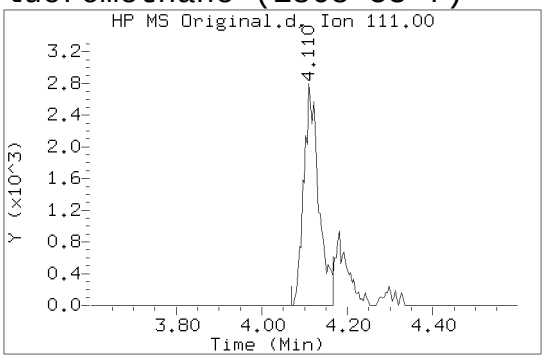
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

Dibromofluoromethane (1868-53-7)

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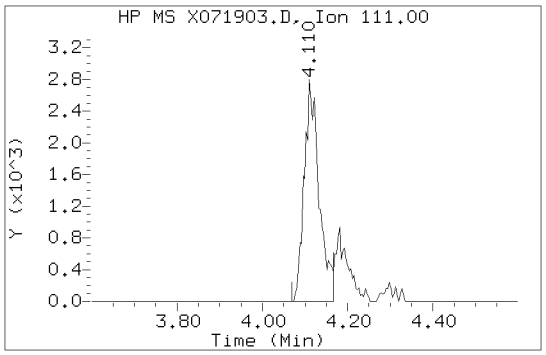
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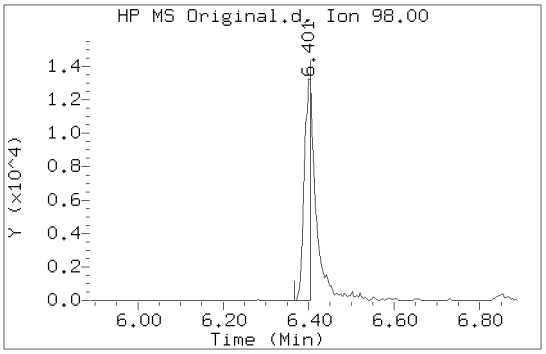


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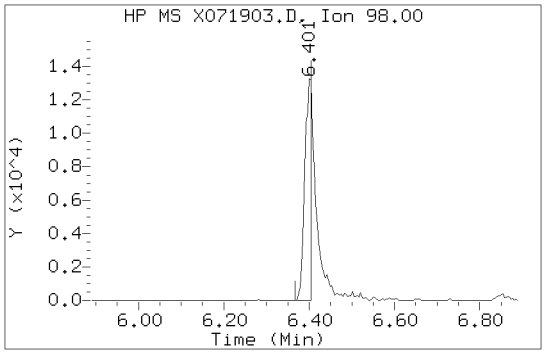
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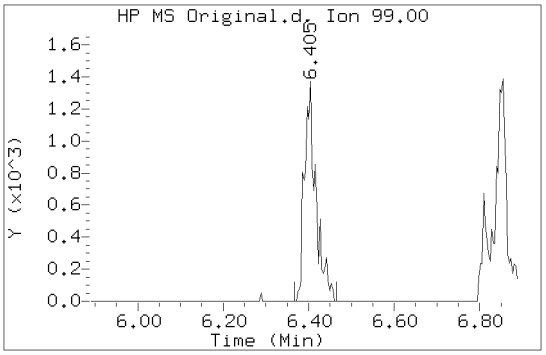
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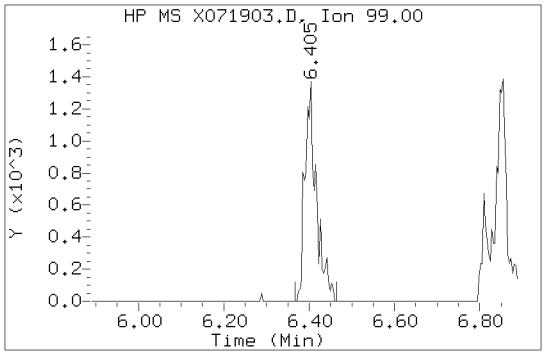
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AFTER

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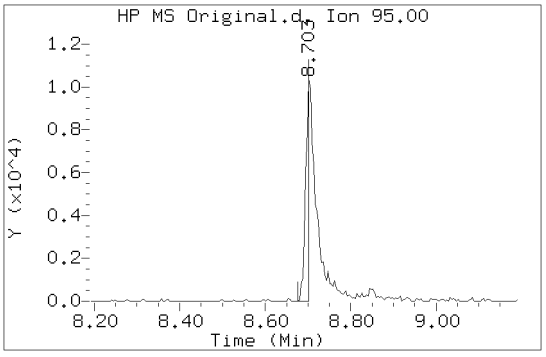


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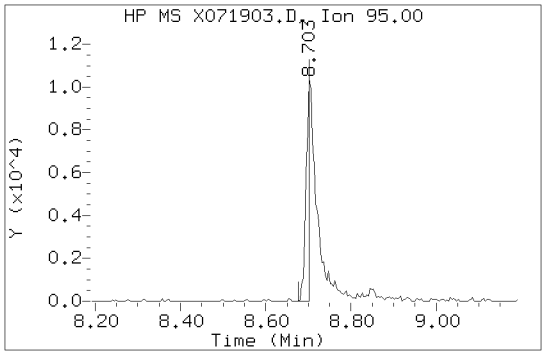
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AFTER

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19-Aug-2022
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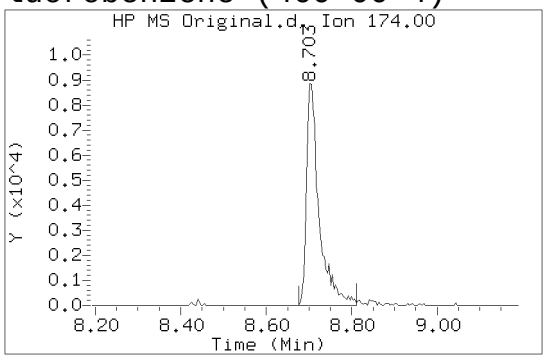
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Inj Date : 19-JUL-2022 12:08
InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

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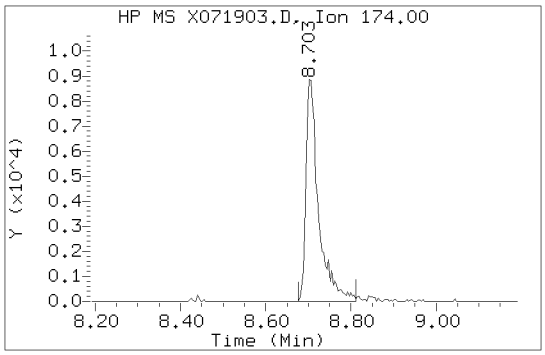
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25-Jul-2022
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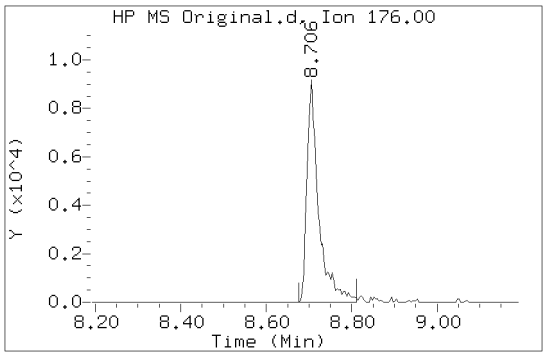
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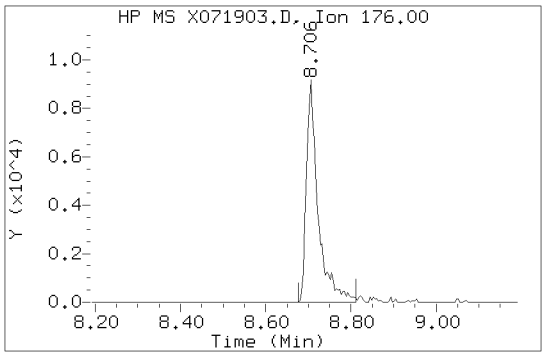
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AFTER

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19-Aug-2022
10:59
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Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 19-JUL-2022 12:29
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 12:08 Cal File: X071903.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	702091	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1046256	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	952128	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	441386	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	9308	1.00000	0.69(aM)
$ 35 1,2-Dichloroethane-d4	65	4.489	4.489	(1.073)	8675	1.00000	0.87(aM)
$ 48 Toluene-d8	98	6.397	6.397	(0.834)	23913	1.00000	1.00(aM)
$ 69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	11894	1.00000	0.59(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	6847	1.00000	1.02(a)
31 1,1,1-Trichloroethane	97	4.087	4.087	(0.977)	9877	1.00000	0.99(a)
68 1,1,2,2-Tetrachloroethane	83	8.848	8.848	(0.915)	6777	1.00000	1.09(a)
53 1,1,2-Trichloroethane	83	6.846	6.846	(0.893)	4829	1.00000	0.98(a)
22 1,1-Dichloroethane	63	2.933	2.933	(0.701)	11983	1.00000	1.10(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	6600	1.00000	1.12(a)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	8523	1.00000	1.00(aM)
93 1,2,3-Trichlorobenzene	180	11.776	11.776	(1.218)	2063	1.00000	0.89(a)
71 1,2,3-Trichloropropane	75	8.874	8.874	(0.918)	5208	1.00000	1.08(aM)
90 1,2,4-Trichlorobenzene	180	11.382	11.382	(1.178)	3403	1.00000	0.84(aM)
79 1,2,4-Trimethylbenzene	105	9.388	9.388	(0.971)	21695	1.00000	1.02(a)
89 1,2-Dibromo-3-Chloropropane	155	10.689	10.689	(1.106)	348	1.00000	1.16(aM)

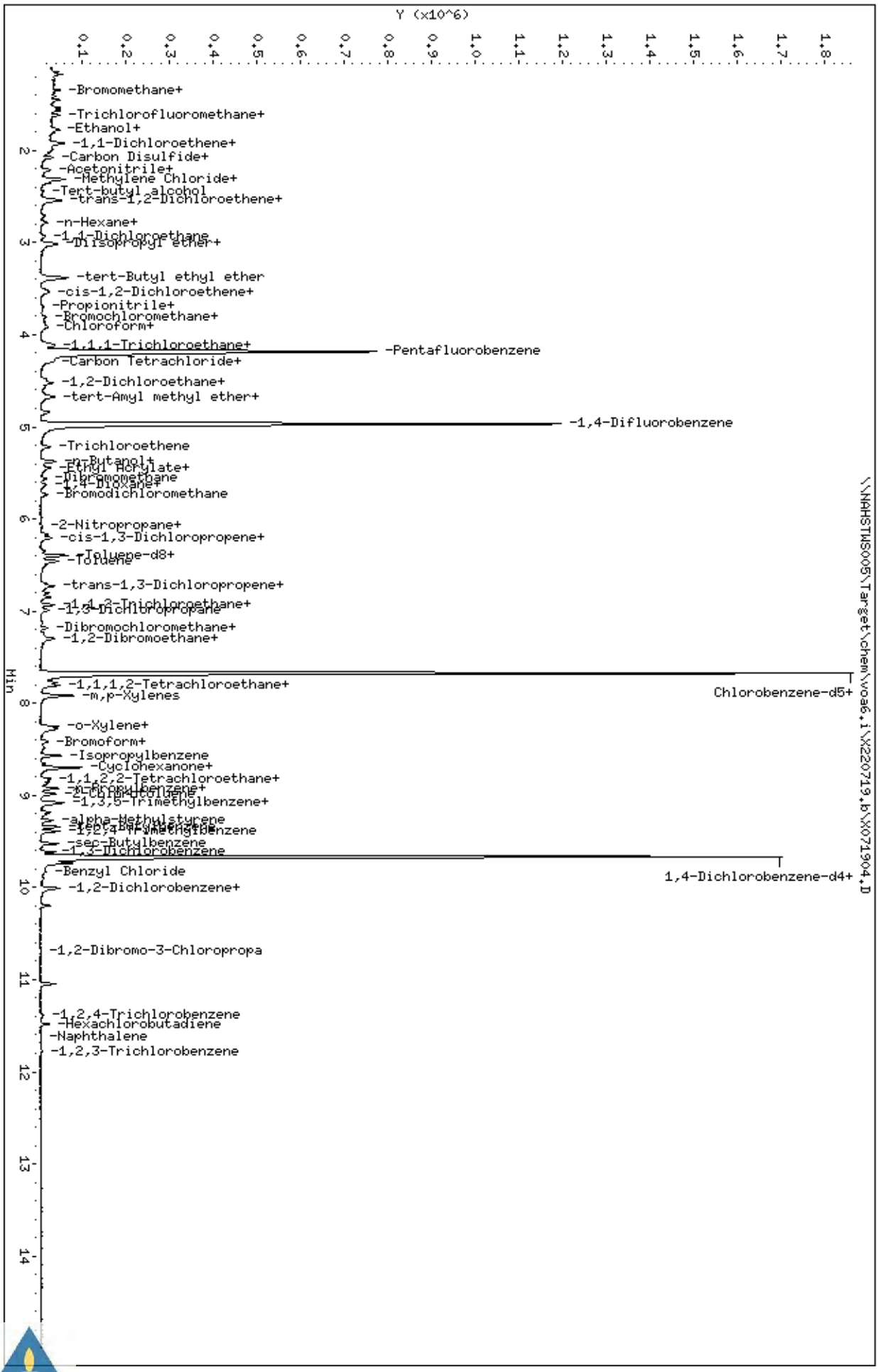
57	1,2-Dibromoethane	107	7.274	7.274 (0.948)	5896	1.00000	0.94(a)
88	1,2-Dichlorobenzene	146	10.007	10.007 (1.035)	11239	1.00000	1.01(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D Page 2
Report Date: 19-Aug-2022 11:00

						AMOUNTS	
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
33 1,2-Dichloroethane	62	4.575	4.575	(0.921)	9313	1.00000	1.01(a)
42 1,2-Dichloropropane	63	5.444	5.444	(1.096)	6012	1.00000	0.93(aM)
75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	21739	1.00000	1.01(a)
83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	12197	1.00000	0.99(a)
54 1,3-Dichloropropane	76	6.993	6.993	(0.912)	10197	1.00000	1.02(a)
84 1,4-Dichlorobenzene	146	9.688	9.688	(1.002)	13164	1.00000	1.01(a)
26 2,2-Dichloropropane	77	3.514	3.514	(0.840)	10957	1.00000	0.89(aM)
24 2-Butanone	43	3.679	3.679	(0.879)	3253	2.00000	1.84(aM)
76 2-Chlorotoluene	91	8.987	8.987	(0.930)	20980	1.00000	1.10(a)
52 2-Hexanone	43	7.116	7.116	(0.928)	5434	2.00000	1.81(aM)
77 4-Chlorotoluene	91	9.088	9.088	(0.940)	22202	1.00000	1.05(a)
82 p-Isopropyltoluene	119	9.654	9.654	(0.999)	22742	1.00000	1.05(a)
45 4-Methyl-2-Pentanone	43	6.340	6.340	(0.827)	9354	2.00000	2.01(aM)
10 Acetone	43	1.984	1.984	(0.474)	3509	2.00000	(aM)
37 Benzene	78	4.519	4.519	(0.909)	26549	1.00000	1.07(a)
74 Bromobenzene	156	8.818	8.818	(0.912)	7556	1.00000	1.00(a)
29 Bromochloromethane	128	3.810	3.810	(0.910)	4315	1.00000	1.09(a)
39 Bromodichloromethane	83	5.737	5.737	(1.155)	8775	1.00000	0.99(a)
66 Bromoform	173	8.417	8.417	(1.097)	3730	1.00000	2.02(Ta)
6 Bromomethane	94	1.347	1.347	(0.322)	6763	1.00000	0.07(aM)
19 Carbon Disulfide	76	2.074	2.074	(0.496)	33751	2.00000	2.17(a)
34 Carbon Tetrachloride	117	4.271	4.271	(0.860)	9827	1.00000	1.08(aH)
59 Chlorobenzene	112	7.697	7.697	(1.003)	18297	1.00000	1.01(a)
7 Chloroethane	64	1.407	1.407	(0.336)	4804	1.00000	1.06(aM)
28 Chloroform	83	3.919	3.919	(0.936)	12942	1.00000	1.09(a)
3 Chloromethane	50	1.085	1.085	(0.259)	7297	1.00000	1.17(aM)
27 cis-1,2-Dichloroethene	96	3.540	3.540	(0.846)	7176	1.00000	1.02(a)
46 cis-1,3-Dichloropropene	75	6.168	6.168	(1.241)	10546	1.00000	0.97(a)
55 Dibromochloromethane	129	7.188	7.188	(0.937)	6898	1.00000	0.97(a)
44 Dibromomethane	93	5.564	5.564	(1.120)	4501	1.00000	1.04(a)
2 Dichlorodifluoromethane	85	0.976	0.976	(0.233)	7427	1.00000	0.94(a)
61 Ethylbenzene	106	7.810	7.810	(1.018)	9298	1.00000	1.01(a)
91 Hexachlorobutadiene	225	11.487	11.487	(1.188)	3610	1.00000	0.97(a)
67 Isopropylbenzene	105	8.567	8.567	(1.117)	28077	1.00000	1.02(a)
62 m,p-Xylenes	106	7.915	7.915	(1.032)	22802	2.00000	2.01(a)
17 Methylene Chloride	84	2.311	2.311	(0.552)	7303	1.00000	0.27(aM)
87 n-Butylbenzene	91	10.007	10.007	(1.035)	16618	1.00000	0.92(aM)
73 n-Propylbenzene	91	8.923	8.923	(0.923)	29049	1.00000	0.99(a)
92 Naphthalene	128	11.622	11.622	(1.202)	4273	1.00000	0.95(aM)
63 o-Xylene	106	8.248	8.248	(1.075)	11062	1.00000	1.00(a)
81 sec-Butylbenzene	105	9.523	9.523	(0.985)	25764	1.00000	1.03(a)
64 Styrene	104	8.282	8.282	(1.080)	17705	1.00000	0.97(aM)
78 tert-Butylbenzene	119	9.343	9.343	(0.967)	19169	1.00000	1.05(a)
56 Tetrachloroethene	164	6.936	6.936	(0.904)	6649	1.00000	1.07(a)
50 Toluene	91	6.457	6.457	(0.842)	28159	1.00000	1.05(a)
20 trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	6346	1.00000	1.02(a)
51 trans-1,3-Dichloropropene	75	6.697	6.697	(1.348)	7300	1.00000	0.81(a)
38 Trichloroethene	130	5.216	5.216	(1.050)	7477	1.00000	1.01(a)
8 Trichlorofluoromethane	101	1.568	1.568	(0.375)	12350	1.00000	1.11(a)
5 Vinyl Chloride	62	1.149	1.149	(0.275)	8192	1.00000	1.11(a)

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.
H - Operator selected an alternate compound hit.



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Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
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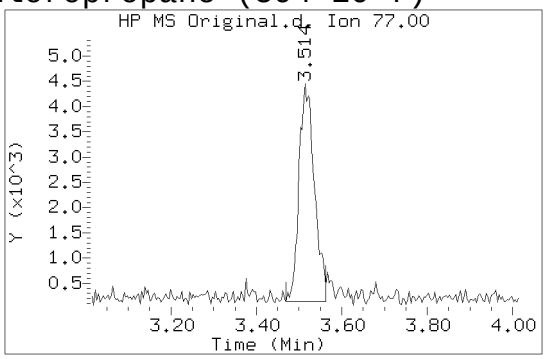
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LabSampID : VSTD001

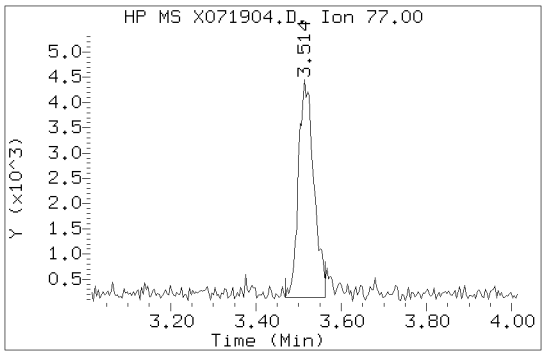
2,2-Dichloropropane (594-20-7)

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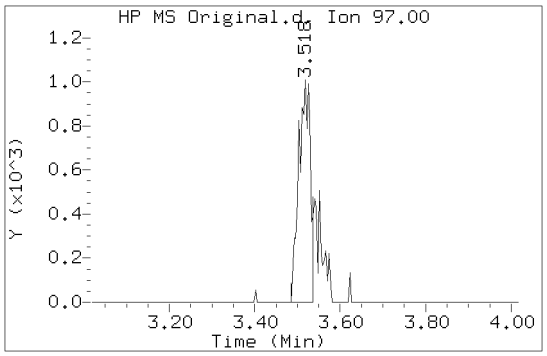
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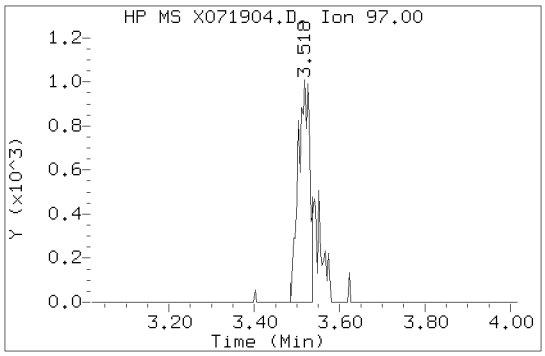
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BEFORE
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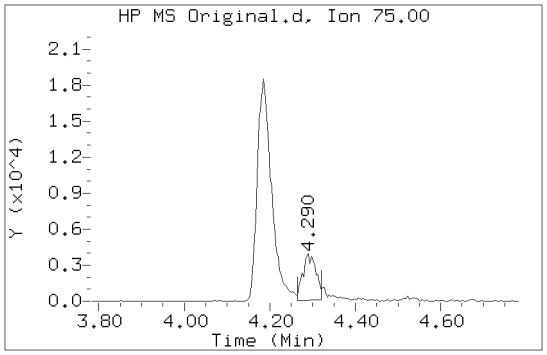
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linh
pham



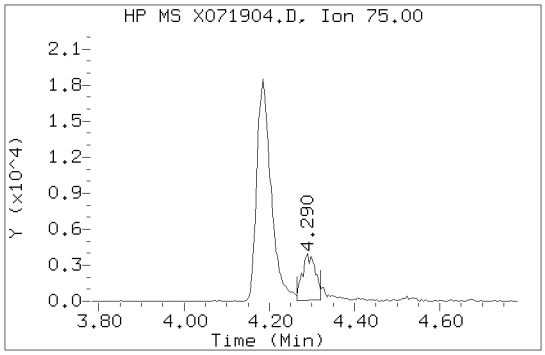
1,1-Dichloropropene (563-58-6)

Reason Code:

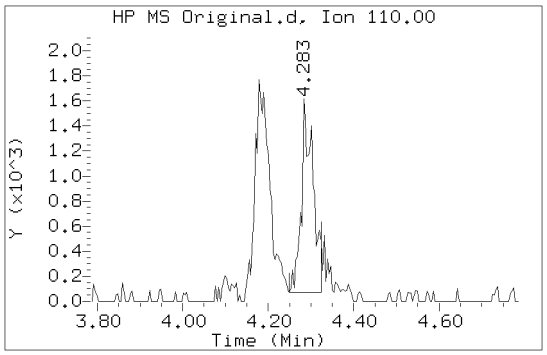
BEFORE
MASS
85
AREA
7427
HEIGHT
7372
25-Jul-2022
09:00
linh
pham



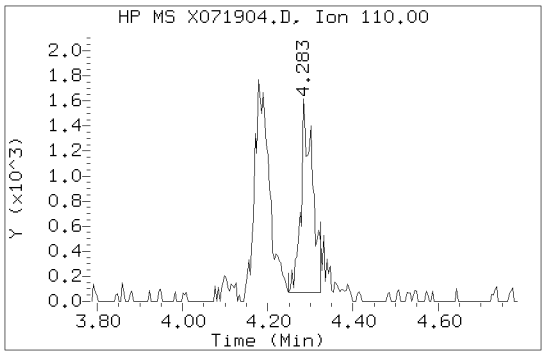
AFTER
MASS
75
AREA
8523
HEIGHT
3906
19-Aug-2022
10:59
linh
pham



BEFORE
MASS
87
AREA
2411
HEIGHT
2358
25-Jul-2022
09:00
linh
pham



AFTER
MASS
110
AREA
2985
HEIGHT
1543
19-Aug-2022
10:59
linh
pham



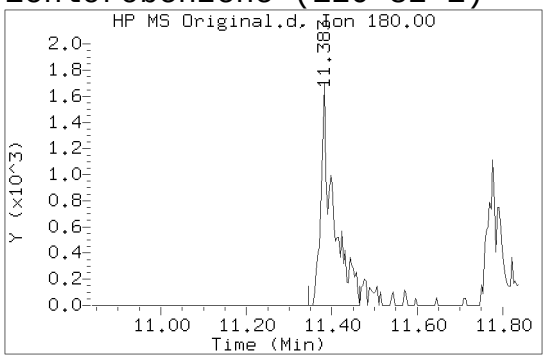
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

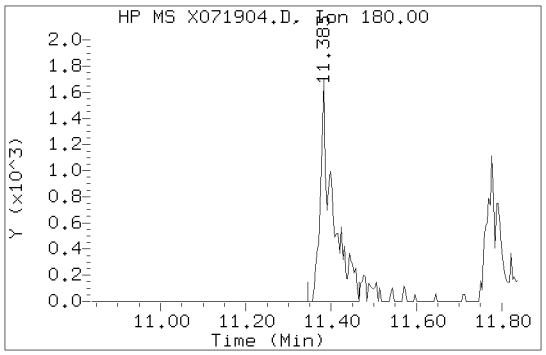
BEFORE

MASS
93
AREA
4501
HEIGHT
2456
25-Jul-2022
09:00
linh
pham



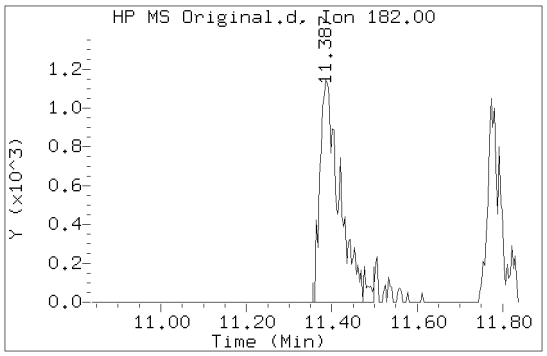
AFTER

MASS
180
AREA
3403
HEIGHT
1696
19-Aug-2022
10:59
linh
pham



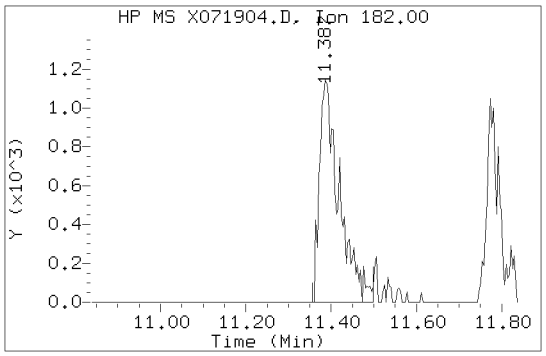
BEFORE

MASS
95
AREA
3651
HEIGHT
2025
25-Jul-2022
09:00
linh
pham



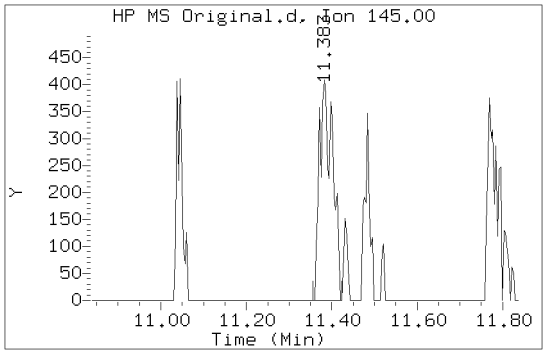
AFTER

MASS
182
AREA
3687
HEIGHT
1145
19-Aug-2022
10:59
linh
pham



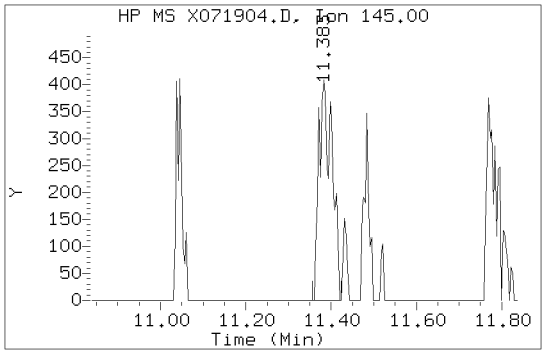
BEFORE

MASS
174
AREA
5101
HEIGHT
2883
25-Jul-2022
09:00
linh
pham



AFTER

MASS
145
AREA
871
HEIGHT
409
19-Aug-2022
10:59
linh
pham

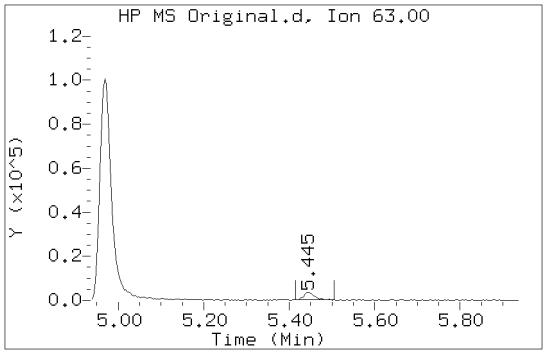


1,2-Dichloropropane (78-87-5)

Reason Code:

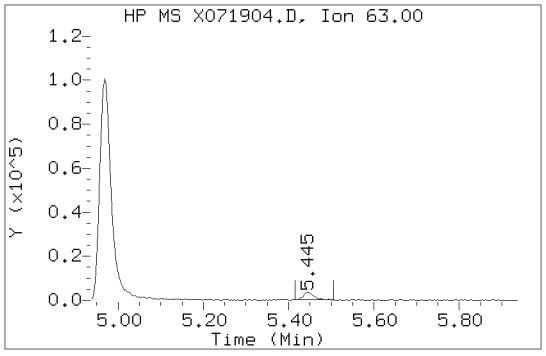
BEFORE

MASS
96
AREA
6346
HEIGHT
3278
25-Jul-2022
09:00
linh
pham



AFTER

MASS
63
AREA
6012
HEIGHT
3388
19-Aug-2022
10:59
linh
pham



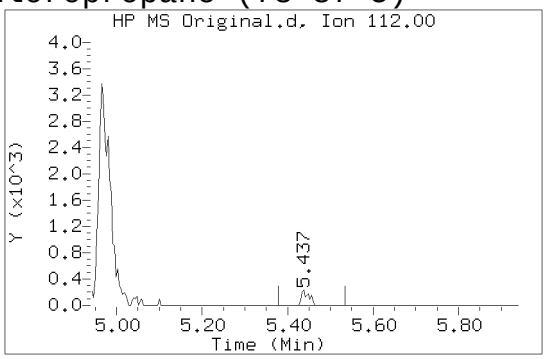
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dichloropropane (78-87-5)

Reason Code:

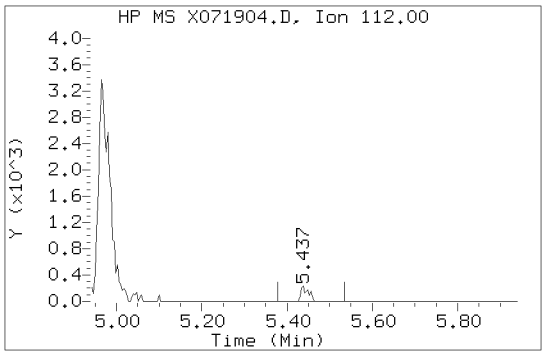
BEFORE

MASS
61
AREA
8277
HEIGHT
5006
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
289
HEIGHT
238
19-Aug-2022
10:59
linh
pham

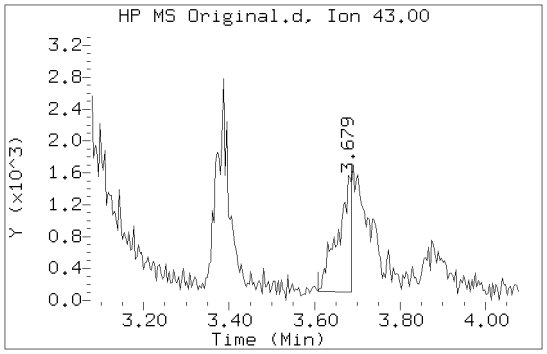


2-Butanone (78-93-3)

Reason Code:

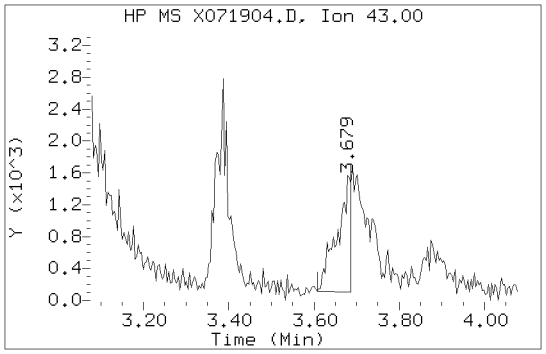
BEFORE

MASS
83
AREA
6777
HEIGHT
4379
25-Jul-2022
09:00
linh
pham



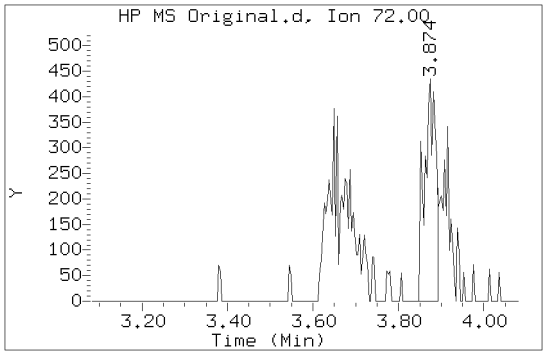
AFTER

MASS
43
AREA
3253
HEIGHT
1462
19-Aug-2022
10:59
linh
pham



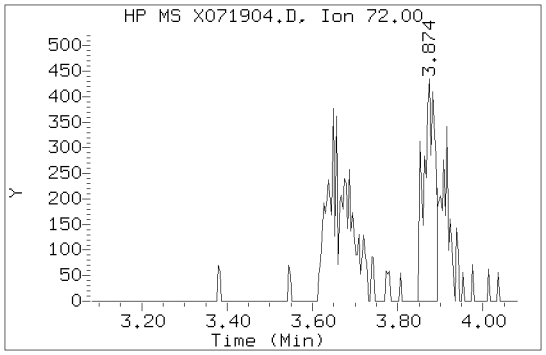
BEFORE

MASS
131
AREA
649
HEIGHT
716
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
797
HEIGHT
435
19-Aug-2022
10:59
linh
pham

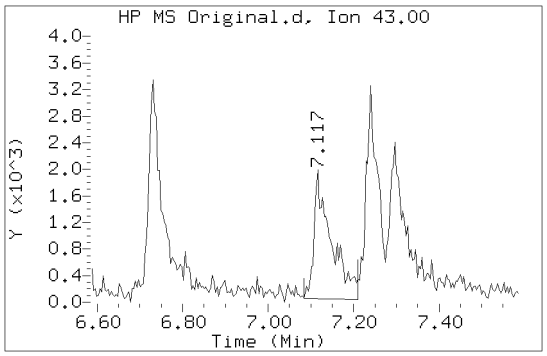


2-Hexanone (591-78-6)

Reason Code:

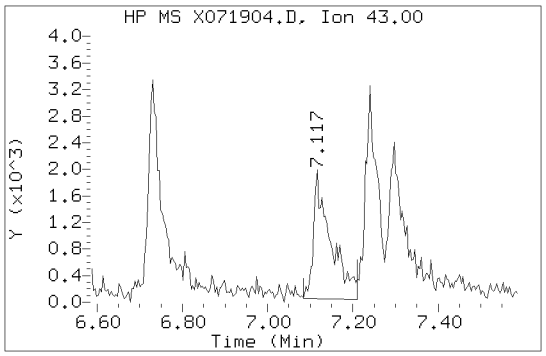
BEFORE

MASS
97
AREA
9877
HEIGHT
4344
25-Jul-2022
09:00
linh
pham



AFTER

MASS
43
AREA
5434
HEIGHT
1935
19-Aug-2022
10:59
linh
pham



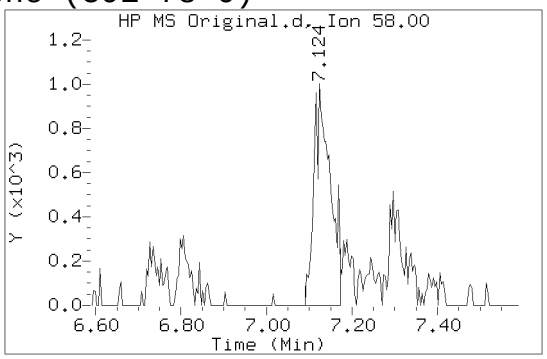
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

2-Hexanone (591-78-6)

Reason Code:

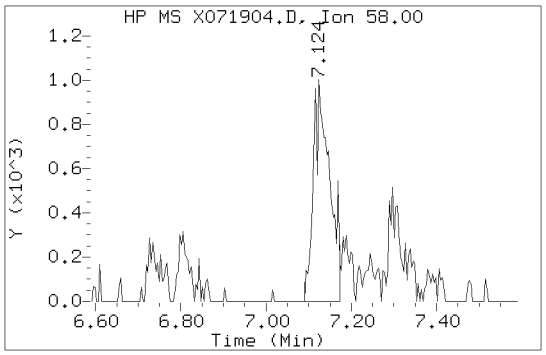
BEFORE

MASS
99
AREA
6792
HEIGHT
3028
25-Jul-2022
09:00
linh
pham



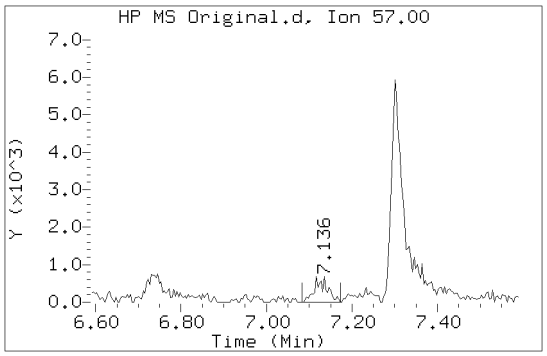
AFTER

MASS
58
AREA
2625
HEIGHT
1002
19-Aug-2022
10:59
linh
pham



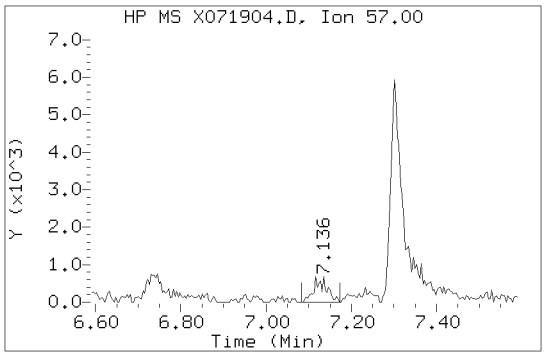
BEFORE

MASS
61
AREA
4664
HEIGHT
2056
25-Jul-2022
09:00
linh
pham



AFTER

MASS
57
AREA
1391
HEIGHT
685
19-Aug-2022
10:59
linh
pham

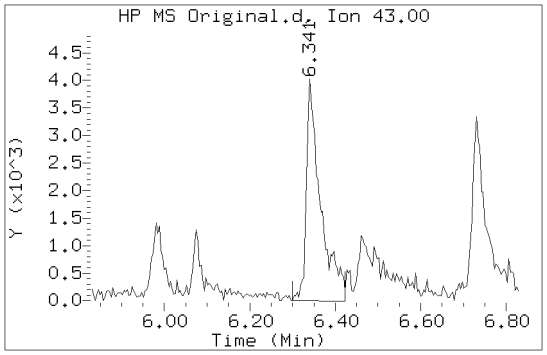


4-Methyl-2-Pentanone (108-10-1)

Reason Code:

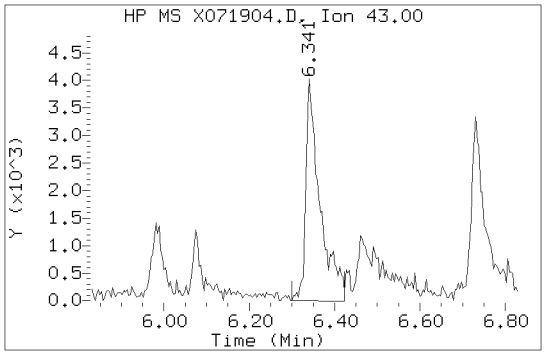
BEFORE

MASS
106
AREA
11062
HEIGHT
7011
25-Jul-2022
09:00
linh
pham



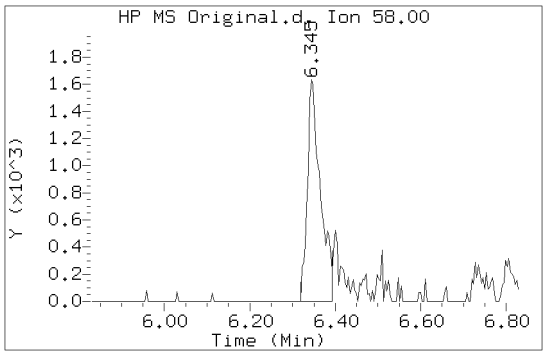
AFTER

MASS
43
AREA
9354
HEIGHT
4027
19-Aug-2022
10:59
linh
pham



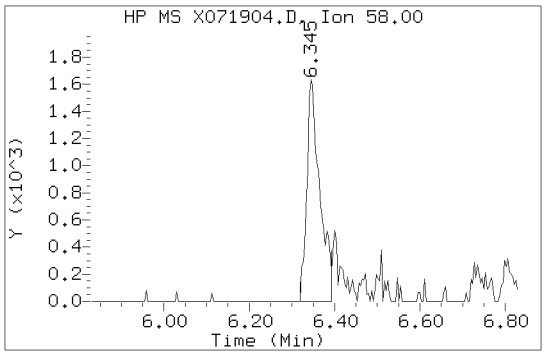
BEFORE

MASS
91
AREA
23370
HEIGHT
14388
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
3489
HEIGHT
1634
19-Aug-2022
10:59
linh
pham



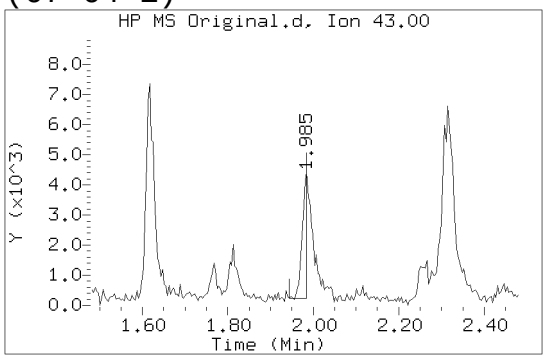
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Acetone (67-64-1)

Reason Code:

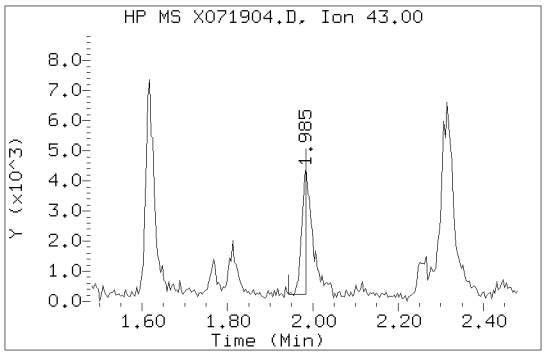
BEFORE

MASS
62
AREA
8192
HEIGHT
7615
25-Jul-2022
09:00
linh
pham



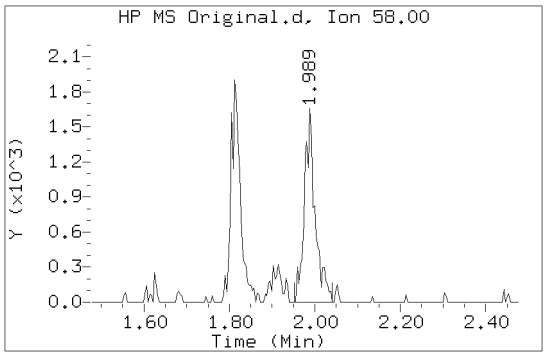
AFTER

MASS
43
AREA
3509
HEIGHT
4193
19-Aug-2022
10:59
linh
pham



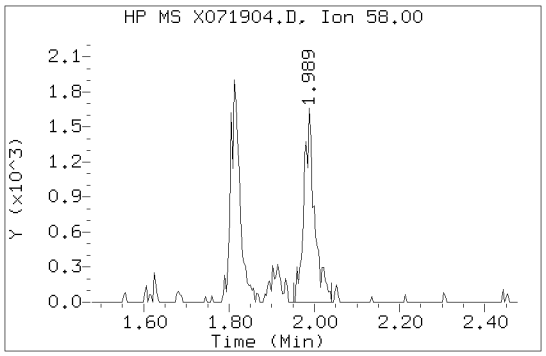
BEFORE

MASS
64
AREA
4092
HEIGHT
2828
25-Jul-2022
09:00
linh
pham



AFTER

MASS
58
AREA
2928
HEIGHT
1664
19-Aug-2022
10:59
linh
pham

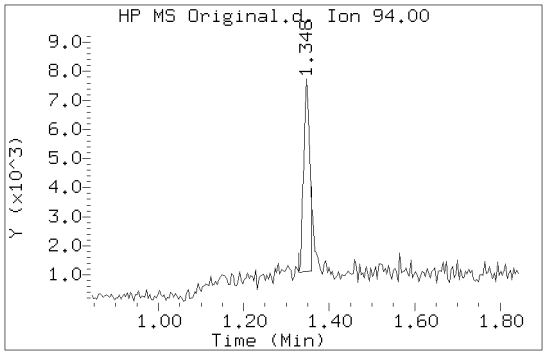


Bromomethane (74-83-9)

Reason Code:

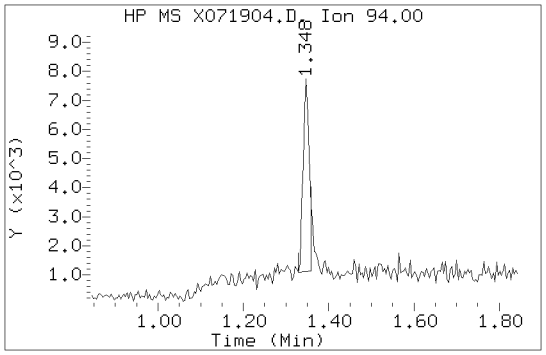
BEFORE

MASS
83
AREA
12942
HEIGHT
4946
25-Jul-2022
09:00
linh
pham



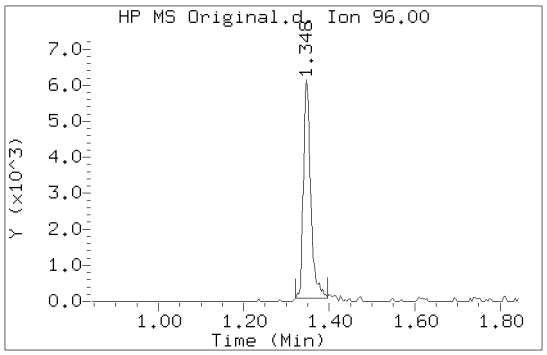
AFTER

MASS
94
AREA
6763
HEIGHT
6617
19-Aug-2022
10:59
linh
pham



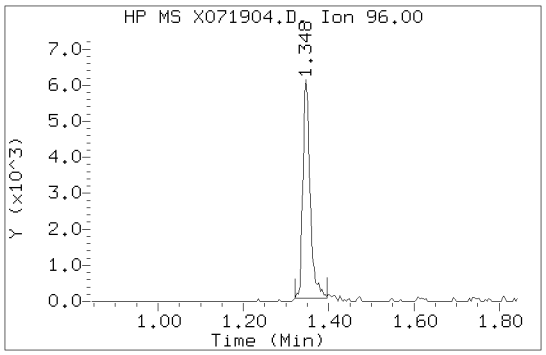
BEFORE

MASS
85
AREA
8582
HEIGHT
3366
25-Jul-2022
09:00
linh
pham



AFTER

MASS
96
AREA
7441
HEIGHT
6061
19-Aug-2022
10:59
linh
pham



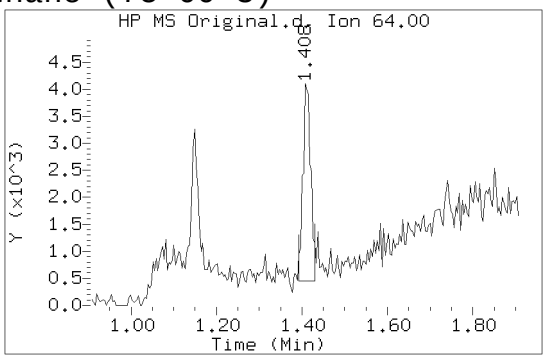
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Chloroethane (75-00-3)

Reason Code:

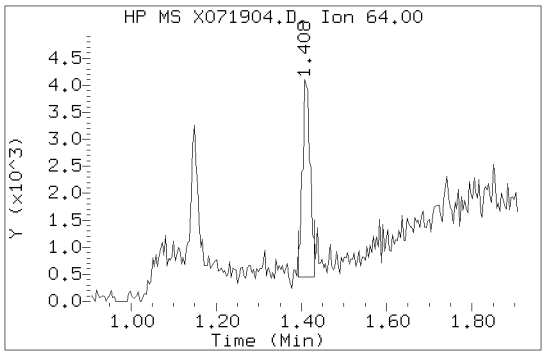
BEFORE

MASS
117
AREA
952128
HEIGHT
650496
25-Jul-2022
09:00
linh
pham



AFTER

MASS
64
AREA
4804
HEIGHT
3652
19-Aug-2022
10:59
linh
pham

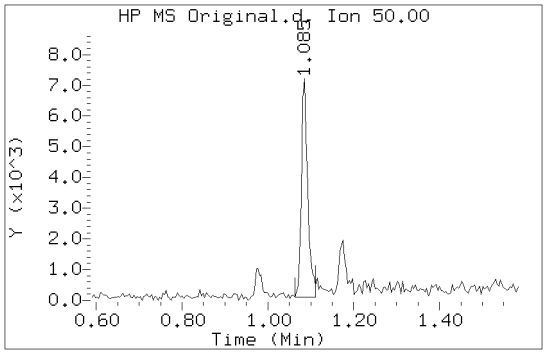


Chloromethane (74-87-3)

Reason Code:

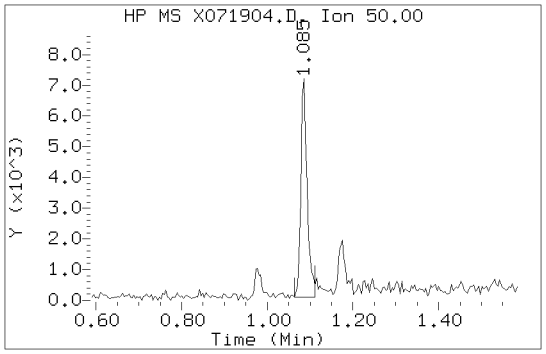
BEFORE

MASS
114
AREA
1046256
HEIGHT
538865
25-Jul-2022
09:00
linh
pham



AFTER

MASS
50
AREA
7297
HEIGHT
7110
19-Aug-2022
10:59
linh
pham

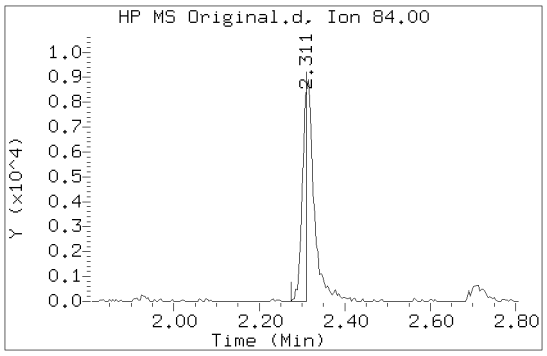


Methylene Chloride (75-09-2)

Reason Code:

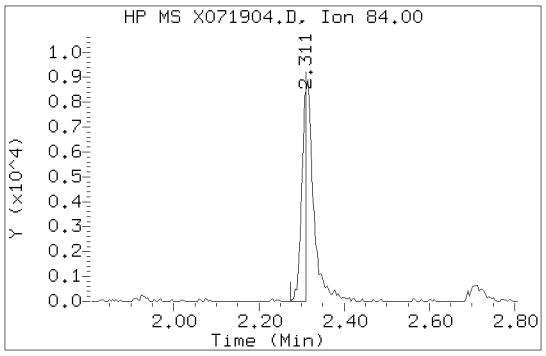
BEFORE

MASS
91
AREA
22202
HEIGHT
10908
25-Jul-2022
09:00
linh
pham



AFTER

MASS
84
AREA
7303
HEIGHT
8457
19-Aug-2022
10:59
linh
pham



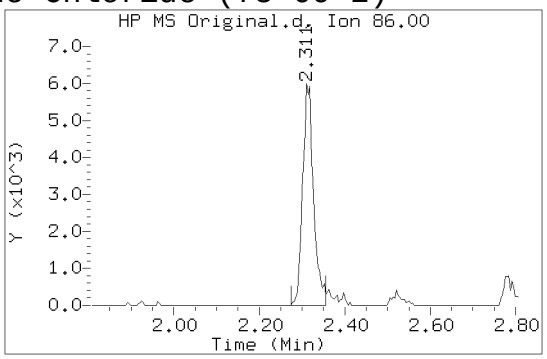
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Methylene Chloride (75-09-2)

Reason Code:

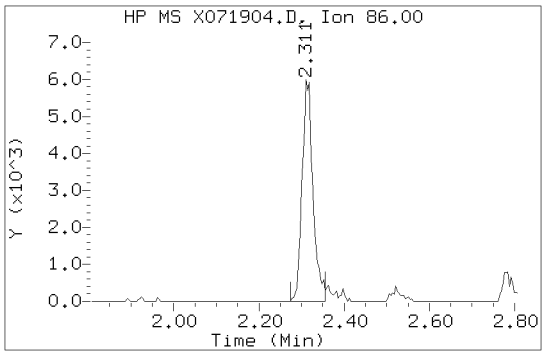
BEFORE

MASS
126
AREA
6411
HEIGHT
3382
25-Jul-2022
09:00
linh
pham



AFTER

MASS
86
AREA
10799
HEIGHT
5994
19-Aug-2022
10:59
linh
pham

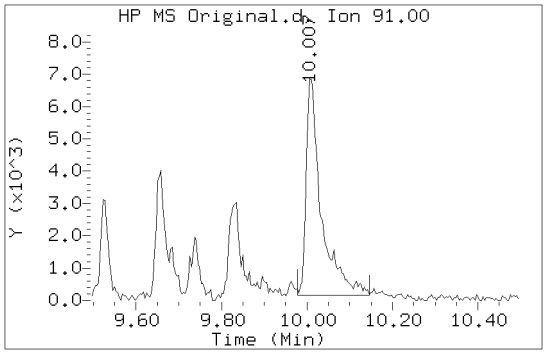


n-Butylbenzene (104-51-8)

Reason Code:

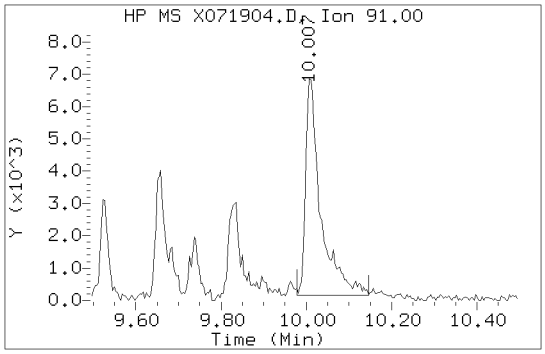
BEFORE

MASS
119
AREA
19169
HEIGHT
13613
25-Jul-2022
09:00
linh
pham



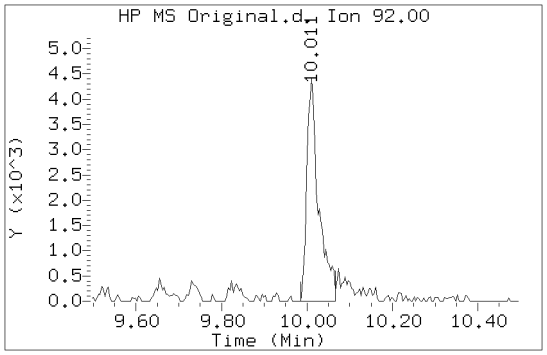
AFTER

MASS
91
AREA
16618
HEIGHT
6707
19-Aug-2022
10:59
linh
pham



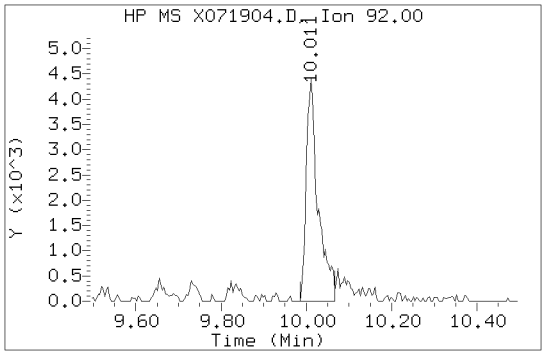
BEFORE

MASS
91
AREA
13199
HEIGHT
9373
25-Jul-2022
09:00
linh
pham



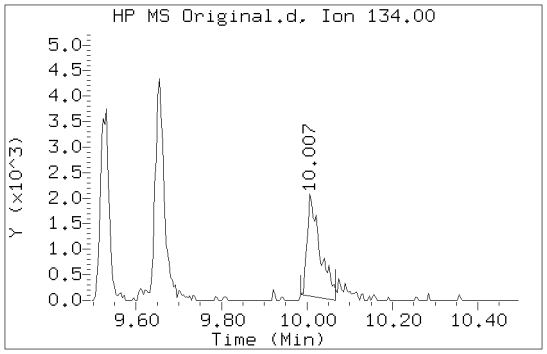
AFTER

MASS
92
AREA
8511
HEIGHT
4402
19-Aug-2022
10:59
linh
pham



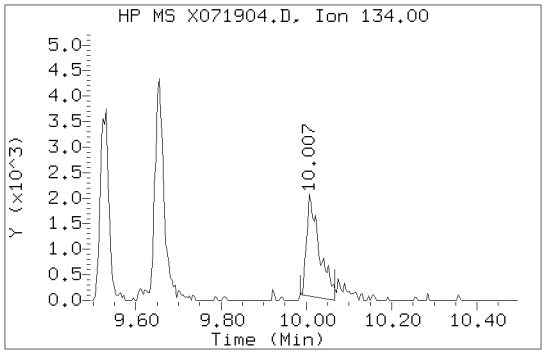
BEFORE

MASS
134
AREA
4688
HEIGHT
3532
25-Jul-2022
09:00
linh
pham



AFTER

MASS
134
AREA
4171
HEIGHT
1996
19-Aug-2022
10:59
linh
pham

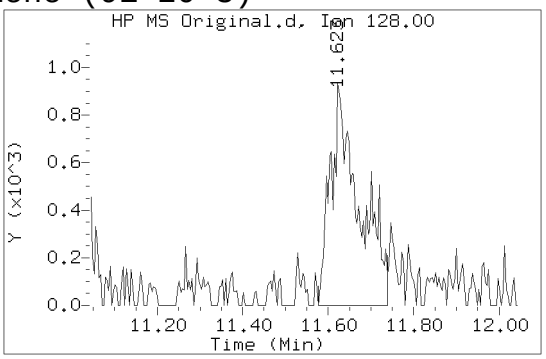


Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Naphthalene (91-20-3)

BEFORE

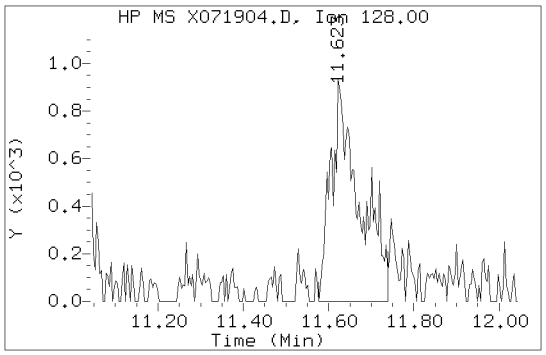
MASS
105
AREA
25764
HEIGHT
19832
25-Jul-2022
09:00
linh
pham



AFTER

MASS
128
AREA
4273
HEIGHT
932
19-Aug-2022
10:59
linh
pham

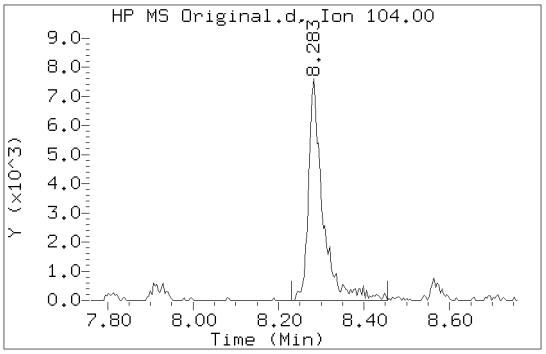
Reason Code:



Styrene (100-42-5)

BEFORE

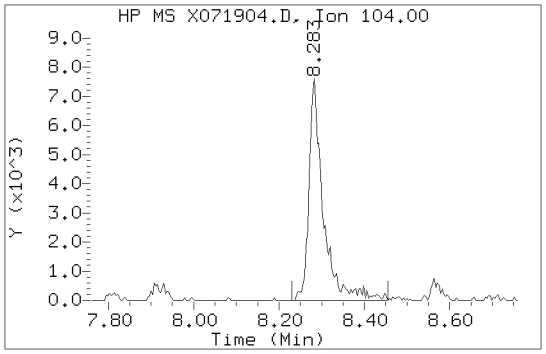
MASS
225
AREA
3610
HEIGHT
2711
25-Jul-2022
09:00
linh
pham



AFTER

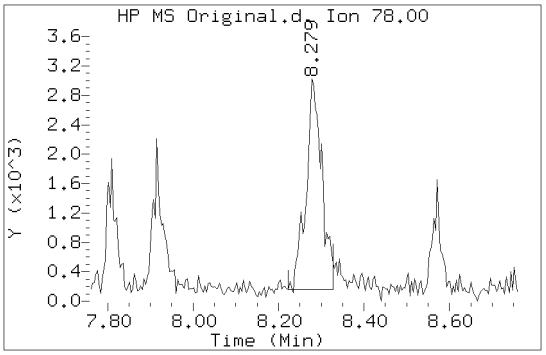
MASS
104
AREA
17705
HEIGHT
7602
19-Aug-2022
10:59
linh
pham

Reason Code:



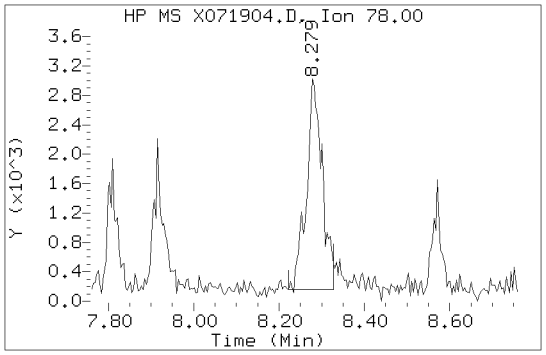
BEFORE

MASS
223
AREA
2686
HEIGHT
2055
25-Jul-2022
09:00
linh
pham



AFTER

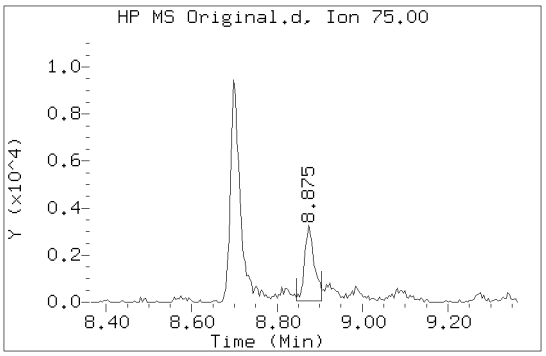
MASS
78
AREA
7412
HEIGHT
2867
19-Aug-2022
10:59
linh
pham



1,2,3-Trichloropropane (96-18-4)

BEFORE

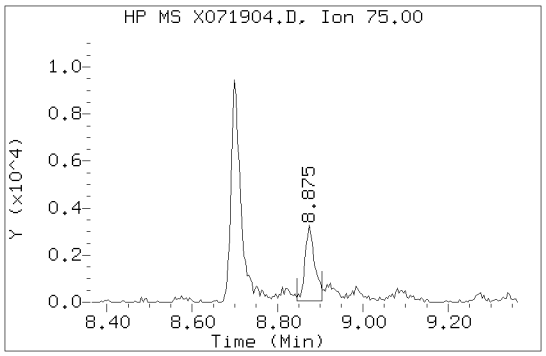
MASS
180
AREA
2063
HEIGHT
1112
25-Jul-2022
09:00
linh
pham



AFTER

MASS
75
AREA
5208
HEIGHT
3218
19-Aug-2022
10:59
linh
pham

Reason Code:



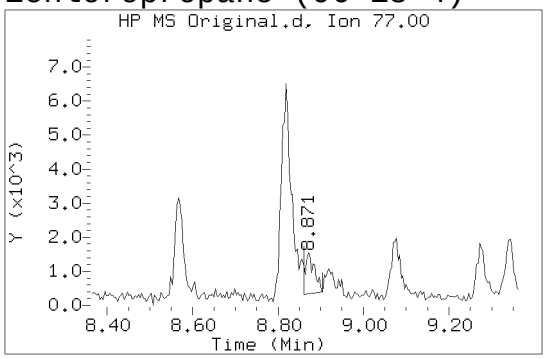
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2,3-Trichloropropane (96-18-4)

Reason Code:

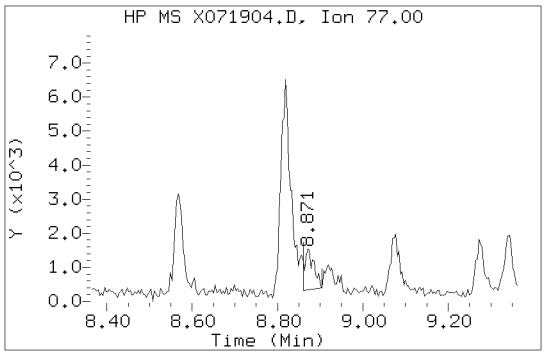
BEFORE

MASS
182
AREA
2188
HEIGHT
1051
25-Jul-2022
09:00
linh
pham



AFTER

MASS
77
AREA
1868
HEIGHT
1205
19-Aug-2022
10:59
linh
pham

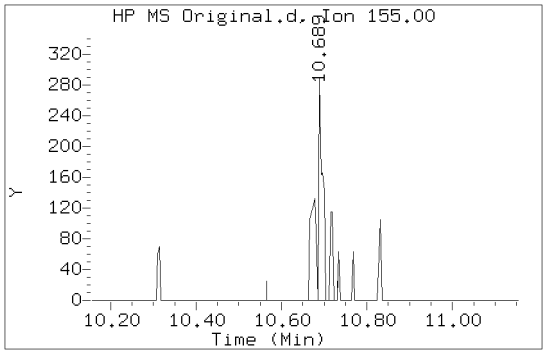


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

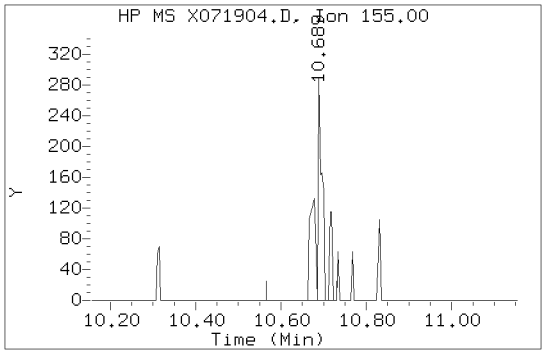
BEFORE

MASS
73
AREA
18285
HEIGHT
11966
25-Jul-2022
09:00
linh
pham



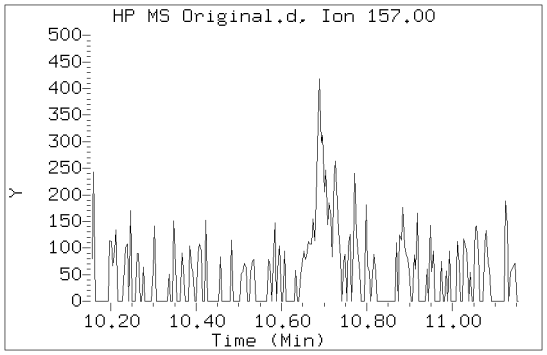
AFTER

MASS
155
AREA
348
HEIGHT
288
19-Aug-2022
10:59
linh
pham



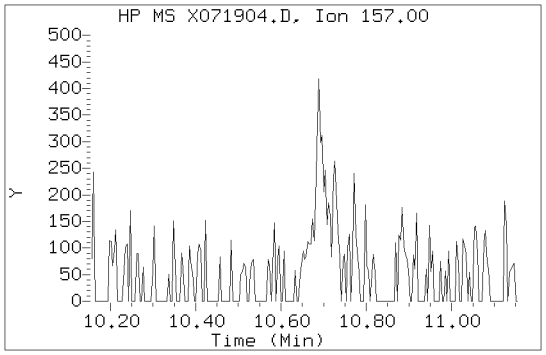
BEFORE

MASS
57
AREA
17060
HEIGHT
6448
25-Jul-2022
09:00
linh
pham



AFTER

MASS
157
AREA
0
HEIGHT
0
19-Aug-2022
10:59
linh
pham

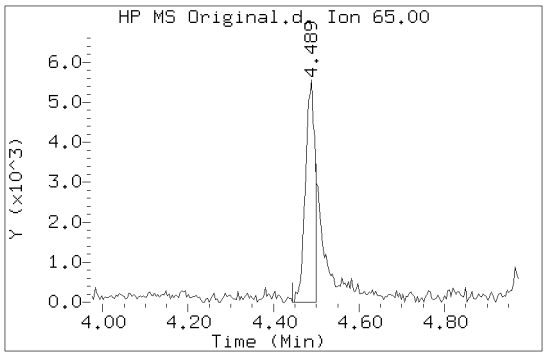


1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

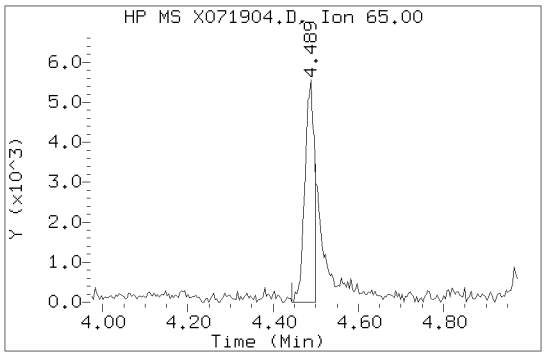
BEFORE

MASS
113
AREA
9308
HEIGHT
5059
25-Jul-2022
09:00
linh
pham



AFTER

MASS
65
AREA
8675
HEIGHT
5560
19-Aug-2022
10:59
linh
pham



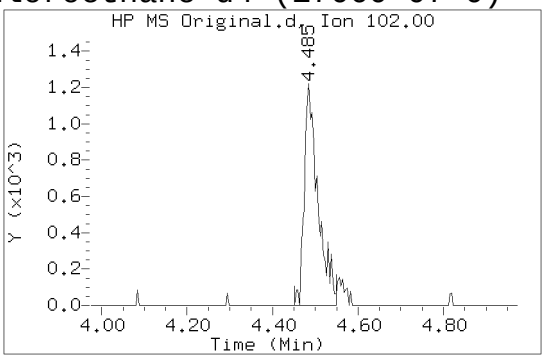
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

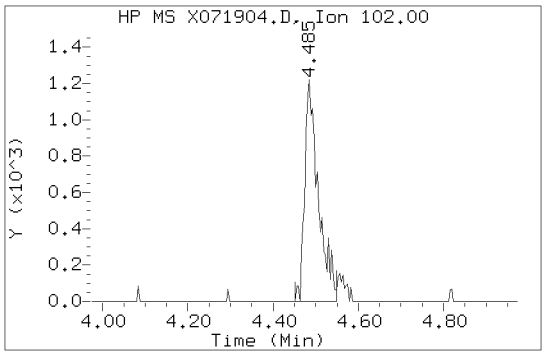
BEFORE

MASS
111
AREA
12165
HEIGHT
5300
25-Jul-2022
09:00
linh
pham



AFTER

MASS
102
AREA
2723
HEIGHT
1221
19-Aug-2022
10:59
linh
pham

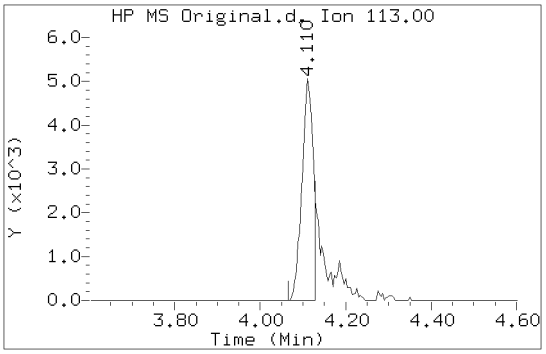


Dibromofluoromethane (1868-53-7)

Reason Code:

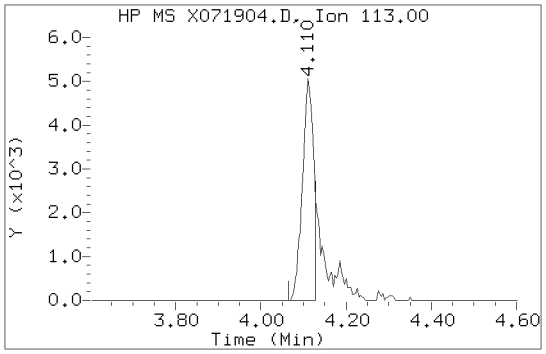
BEFORE

MASS
98
AREA
23913
HEIGHT
24224
25-Jul-2022
09:00
linh
pham



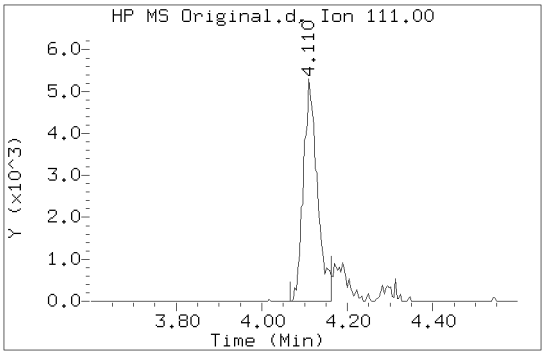
AFTER

MASS
113
AREA
9308
HEIGHT
5059
19-Aug-2022
10:59
linh
pham



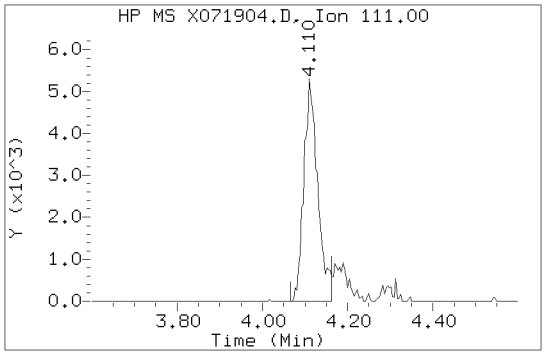
BEFORE

MASS
99
AREA
4207
HEIGHT
2158
25-Jul-2022
09:00
linh
pham



AFTER

MASS
111
AREA
12165
HEIGHT
5300
19-Aug-2022
10:59
linh
pham

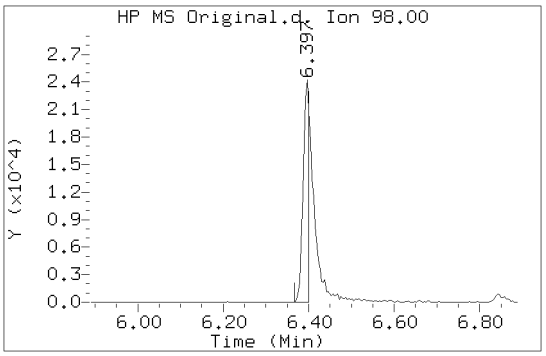


Toluene-d8 (2037-26-5)

Reason Code:

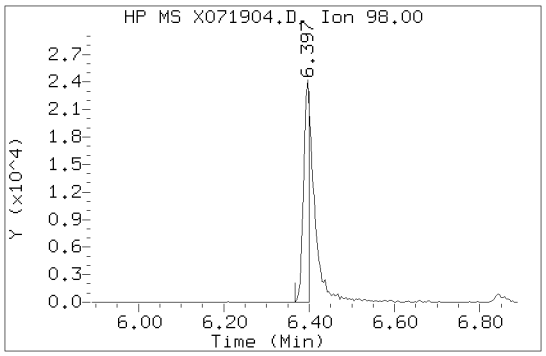
BEFORE

MASS
65
AREA
8675
HEIGHT
5560
25-Jul-2022
09:00
linh
pham



AFTER

MASS
98
AREA
23913
HEIGHT
24224
19-Aug-2022
10:59
linh
pham



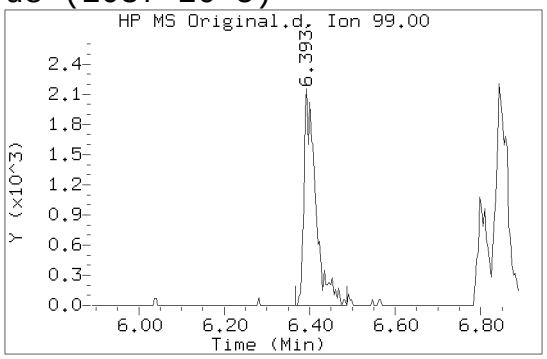
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071904.D
Inj Date : 19-JUL-2022 12:29
InstruID : voa6.i
LabSampID : VSTD001

Toluene-d8 (2037-26-5)

Reason Code:

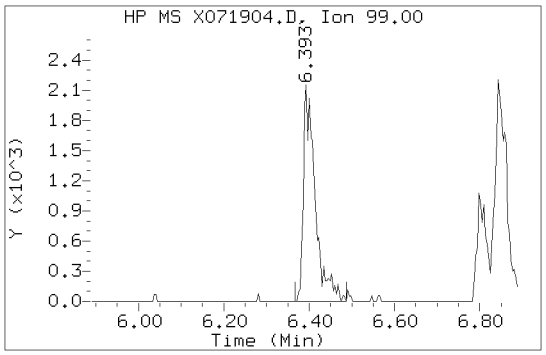
BEFORE

MASS
102
AREA
2723
HEIGHT
1221
25-Jul-2022
09:00
linh
pham



AFTER

MASS
99
AREA
4207
HEIGHT
2158
19-Aug-2022
10:59
linh
pham

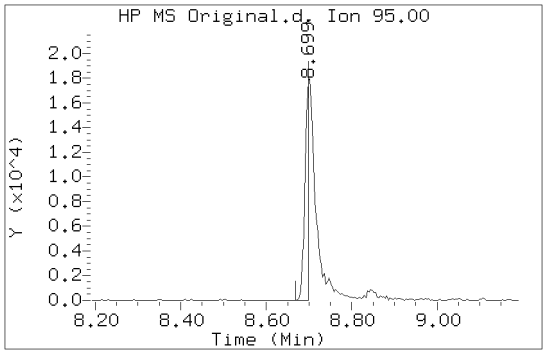


4-Bromofluorobenzene (460-00-4)

Reason Code:

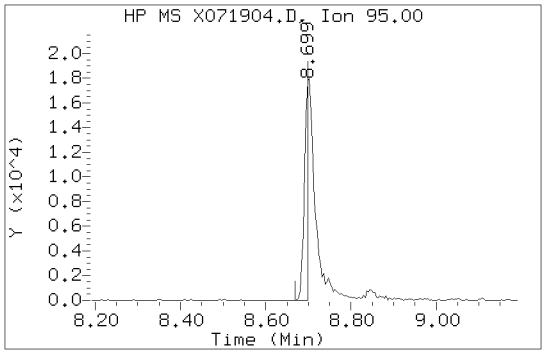
BEFORE

MASS
95
AREA
11894
HEIGHT
17792
25-Jul-2022
09:00
linh
pham



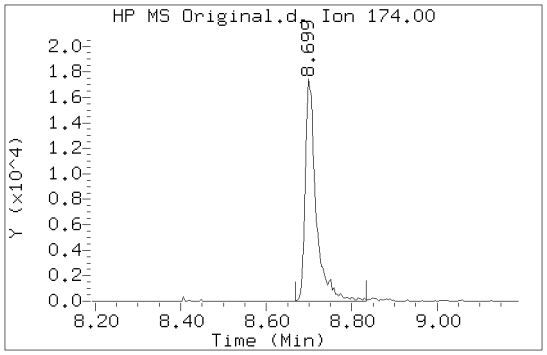
AFTER

MASS
95
AREA
11894
HEIGHT
17792
19-Aug-2022
10:59
linh
pham



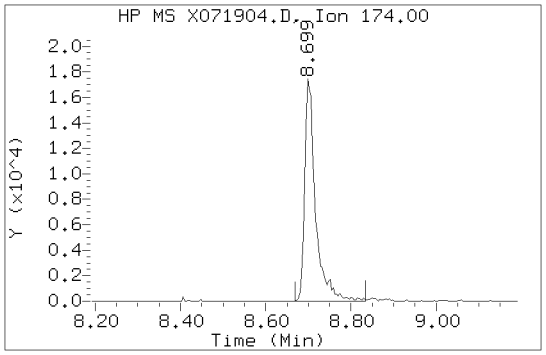
BEFORE

MASS
174
AREA
31362
HEIGHT
17448
25-Jul-2022
09:00
linh
pham



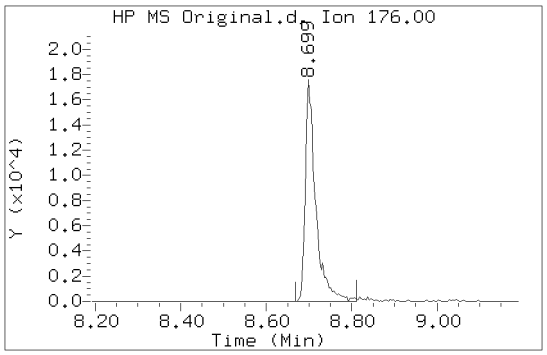
AFTER

MASS
174
AREA
31362
HEIGHT
17448
19-Aug-2022
10:59
linh
pham



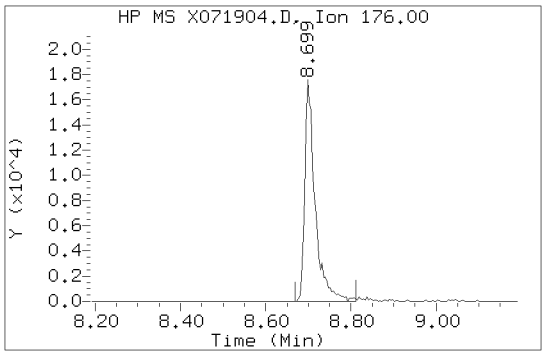
BEFORE

MASS
176
AREA
30039
HEIGHT
17592
25-Jul-2022
09:00
linh
pham



AFTER

MASS
176
AREA
30039
HEIGHT
17592
19-Aug-2022
10:59
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D Page 1
Report Date: 19-Aug-2022 11:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 19-JUL-2022 12:50
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS22052000V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\8260W.m
Meth Date : 19-Aug-2022 11:00 voa6.i Quant Type: ISTD
Cal Date : 19-JUL-2022 12:29 Cal File: X071904.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.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	4.185	4.185	(1.000)	749096	50.0000	
* 36 1,4-Difluorobenzene	114	4.968	4.968	(1.000)	1092048	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	978384	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.665	(1.000)	454442	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.110	(0.982)	18364	2.00000	1.90(a)
$ 35 1,2-Dichloroethane-d4	65	4.481	4.481	(1.071)	15130	2.00000	1.63(aM)
$ 48 Toluene-d8	98	6.397	6.397	(0.834)	53011	2.00000	2.17(aM)
$ 69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	19061	2.00000	1.39(aM)
60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	11843	2.00000	1.72(aM)
31 1,1,1-Trichloroethane	97	4.091	4.091	(0.978)	18665	2.00000	1.75(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	11877	2.00000	1.86(a)
53 1,1,2-Trichloroethane	83	6.846	6.846	(0.893)	9847	2.00000	1.95(a)
22 1,1-Dichloroethane	63	2.937	2.937	(0.702)	21717	2.00000	1.88(a)
11 1,1-Dichloroethene	96	1.921	1.921	(0.459)	11822	2.00000	1.89(a)
32 1,1-Dichloropropene	75	4.290	4.290	(0.863)	15792	2.00000	1.79(a)
93 1,2,3-Trichlorobenzene	180	11.765	11.765	(1.217)	4350	2.00000	1.84(aM)
71 1,2,3-Trichloropropane	75	8.874	8.874	(0.918)	9920	2.00000	2.01(aM)
90 1,2,4-Trichlorobenzene	180	11.367	11.367	(1.176)	7590	2.00000	1.83(aM)
79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	39752	2.00000	1.82(a)
89 1,2-Dibromo-3-Chloropropane	155	10.719	10.719	(1.109)	994	2.00000	2.52(aM)

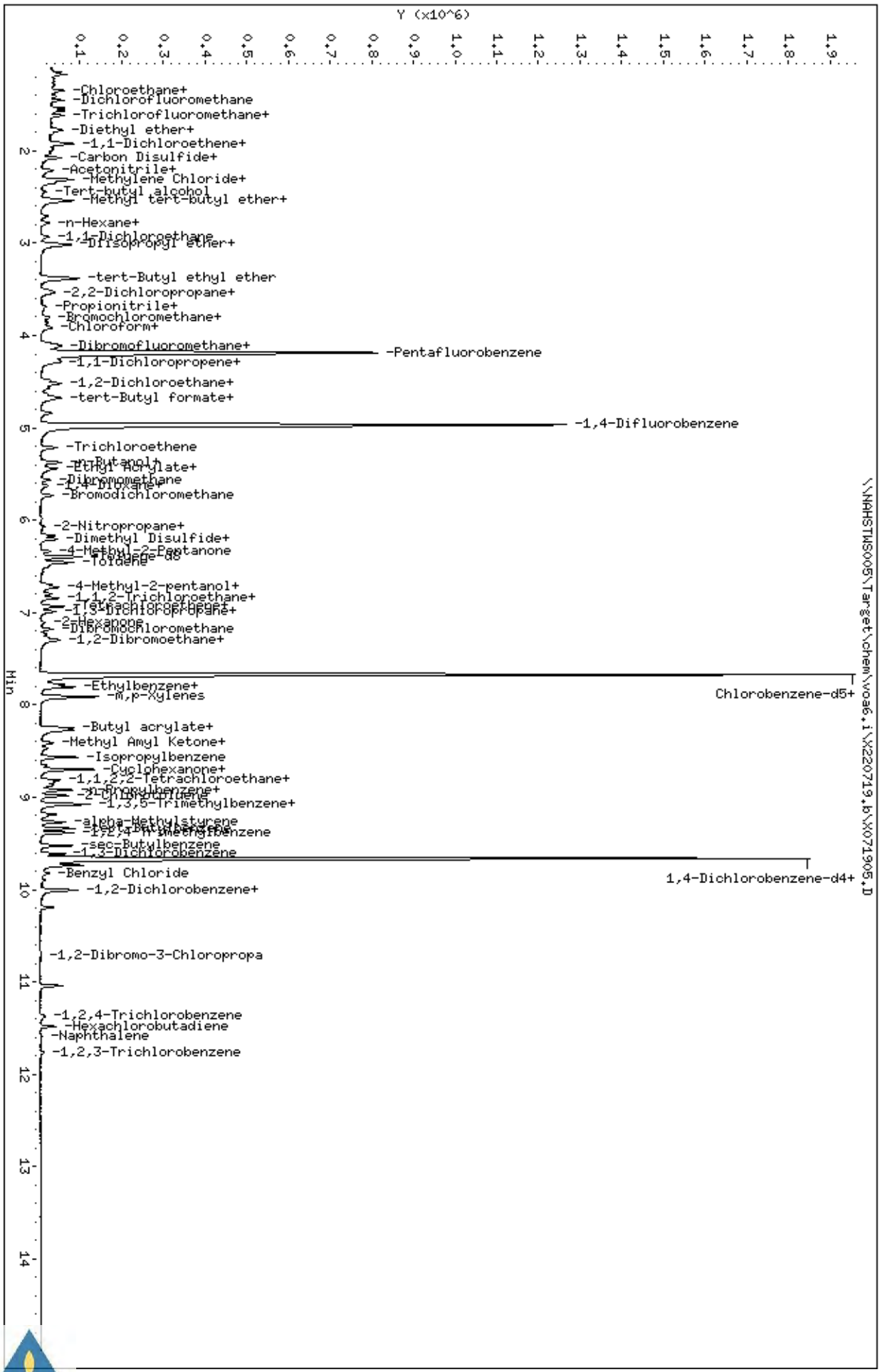
57	1,2-Dibromoethane	107	7.266	7.266 (0.947)	11493	2.00000	1.80(a)
88	1,2-Dichlorobenzene	146	10.003	10.003 (1.035)	21378	2.00000	1.88(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D Page 2
Report Date: 19-Aug-2022 11:00

						AMOUNTS	
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
33 1,2-Dichloroethane	62	4.571	4.571	(0.920)	18694	2.00000	1.95(a)
42 1,2-Dichloropropane	63	5.441	5.441	(1.095)	12652	2.00000	1.88(aM)
75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	40980	2.00000	1.85(a)
83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	23262	2.00000	1.84(a)
54 1,3-Dichloropropane	76	6.989	6.989	(0.911)	18638	2.00000	1.82(a)
84 1,4-Dichlorobenzene	146	9.688	9.688	(1.002)	27562	2.00000	2.05(a)
26 2,2-Dichloropropane	77	3.514	3.514	(0.840)	20343	2.00000	1.74(a)
24 2-Butanone	43	3.675	3.675	(0.878)	7321	4.00000	3.89(aM)
76 2-Chlorotoluene	91	8.979	8.979	(0.929)	37863	2.00000	1.94(aM)
52 2-Hexanone	43	7.105	7.105	(0.926)	11235	4.00000	3.65(aM)
77 4-Chlorotoluene	91	9.081	9.081	(0.940)	40205	2.00000	1.84(a)
82 p-Isopropyltoluene	119	9.654	9.654	(0.999)	37293	2.00000	1.68(a)
45 4-Methyl-2-Pentanone	43	6.340	6.340	(0.827)	17683	4.00000	3.70(a)
10 Acetone	43	1.981	1.981	(0.473)	7337	4.00000	(aM)
37 Benzene	78	4.519	4.519	(0.909)	48445	2.00000	1.87(a)
74 Bromobenzene	156	8.815	8.815	(0.912)	14765	2.00000	1.90(a)
29 Bromochloromethane	128	3.799	3.799	(0.908)	7950	2.00000	1.88(a)
39 Bromodichloromethane	83	5.733	5.733	(1.154)	16875	2.00000	1.82(a)
66 Bromoform	173	8.417	8.417	(1.097)	7169	2.00000	2.70(TaM)
6 Bromomethane	94	1.347	1.347	(0.322)	13133	2.00000	1.26(aM)
19 Carbon Disulfide	76	2.078	2.078	(0.497)	59291	4.00000	3.58(a)
34 Carbon Tetrachloride	117	4.271	4.271	(0.860)	17025	2.00000	1.80(aMH)
59 Chlorobenzene	112	7.697	7.697	(1.003)	35149	2.00000	1.89(a)
7 Chloroethane	64	1.411	1.411	(0.337)	9295	2.00000	1.93(a)
28 Chloroform	83	3.919	3.919	(0.936)	22862	2.00000	1.80(a)
3 Chloromethane	50	1.085	1.085	(0.259)	13594	2.00000	2.01(a)
27 cis-1,2-Dichloroethene	96	3.544	3.544	(0.847)	12905	2.00000	1.73(a)
46 cis-1,3-Dichloropropene	75	6.164	6.164	(1.241)	20286	2.00000	1.79(aM)
55 Dibromochloromethane	129	7.180	7.180	(0.936)	13652	2.00000	1.87(a)
44 Dibromomethane	93	5.564	5.564	(1.120)	8339	2.00000	1.84(a)
2 Dichlorodifluoromethane	85	0.976	0.976	(0.233)	12732	2.00000	1.61(a)
61 Ethylbenzene	106	7.806	7.806	(1.018)	16956	2.00000	1.80(a)
91 Hexachlorobutadiene	225	11.484	11.484	(1.188)	6994	2.00000	1.82(aM)
67 Isopropylbenzene	105	8.567	8.567	(1.117)	50981	2.00000	1.80(a)
62 m,p-Xylenes	106	7.911	7.911	(1.031)	44013	4.00000	3.77(aM)
17 Methylene Chloride	84	2.311	2.311	(0.552)	16740	2.00000	1.59(aM)
87 n-Butylbenzene	91	10.007	10.007	(1.035)	31547	2.00000	1.71(aM)
73 n-Propylbenzene	91	8.919	8.919	(0.923)	53786	2.00000	1.79(a)
92 Naphthalene	128	11.592	11.592	(1.199)	8600	2.00000	1.85(aM)
63 o-Xylene	106	8.248	8.248	(1.075)	20993	2.00000	1.85(aM)
81 sec-Butylbenzene	105	9.523	9.523	(0.985)	46135	2.00000	1.80(a)
64 Styrene	104	8.271	8.271	(1.078)	32495	2.00000	1.74(aM)
78 tert-Butylbenzene	119	9.339	9.339	(0.966)	33676	2.00000	1.80(a)
56 Tetrachloroethene	164	6.933	6.933	(0.904)	11817	2.00000	1.86(a)
50 Toluene	91	6.457	6.457	(0.842)	51658	2.00000	1.87(a)
20 trans-1,2-Dichloroethene	96	2.543	2.543	(0.608)	11820	2.00000	1.79(aM)
51 trans-1,3-Dichloropropene	75	6.697	6.697	(1.348)	17450	2.00000	1.85(aM)
38 Trichloroethene	130	5.216	5.216	(1.050)	14143	2.00000	1.84(a)
8 Trichlorofluoromethane	101	1.565	1.565	(0.374)	22137	2.00000	1.87(a)
5 Vinyl Chloride	62	1.149	1.149	(0.275)	14813	2.00000	1.88(a)

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.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Date : 19-JUL-2022 12:50
Client ID: VSTD002
Sample Info: VSTD002;VSTD0021:1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

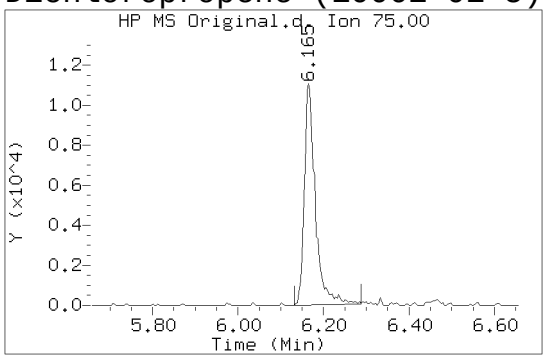
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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

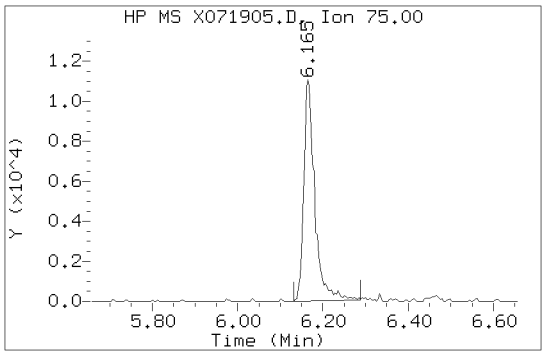
BEFORE

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128
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7950
HEIGHT
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25-Jul-2022
09:00
linh
pham



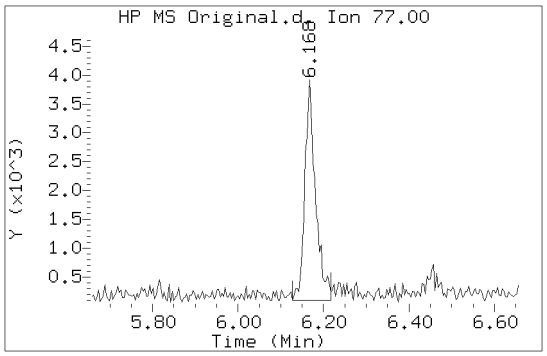
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10:59
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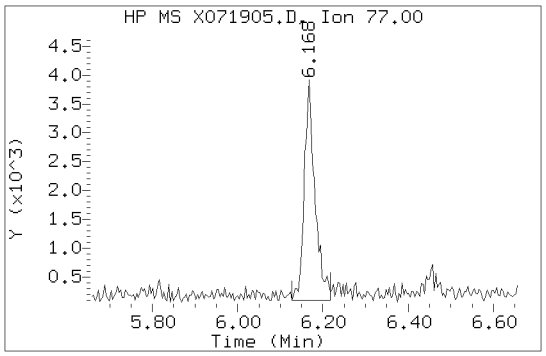
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09:00
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pham



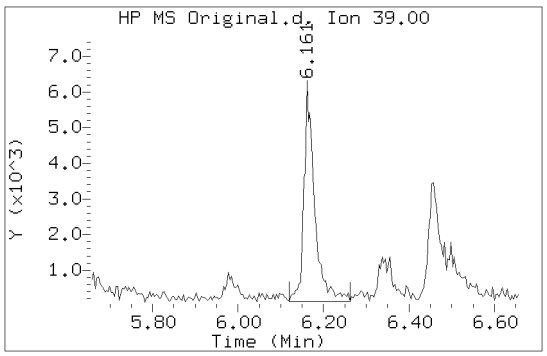
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3822
19-Aug-2022
10:59
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pham



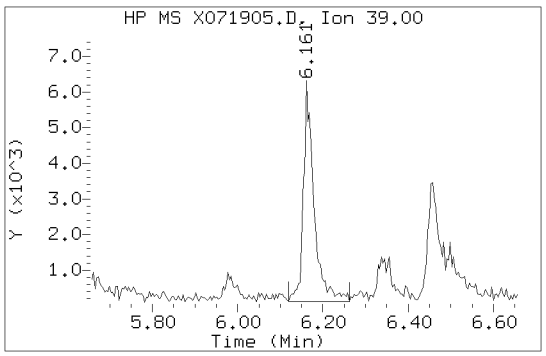
BEFORE

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HEIGHT
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AFTER

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HEIGHT
6193
19-Aug-2022
10:59
linh
pham

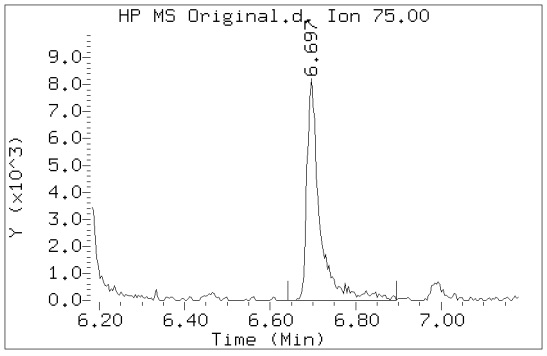


trans-1,3-Dichloropropene (10061-02-6)

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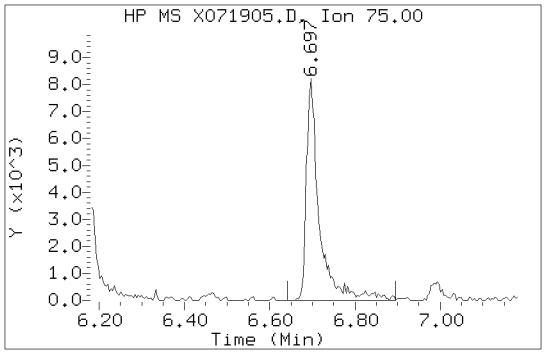
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25-Jul-2022
09:00
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AFTER

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HEIGHT
8215
19-Aug-2022
10:59
linh
pham



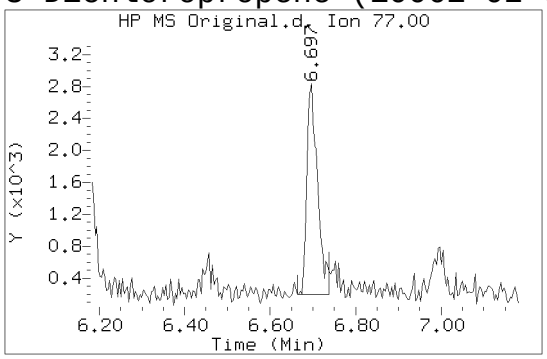
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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

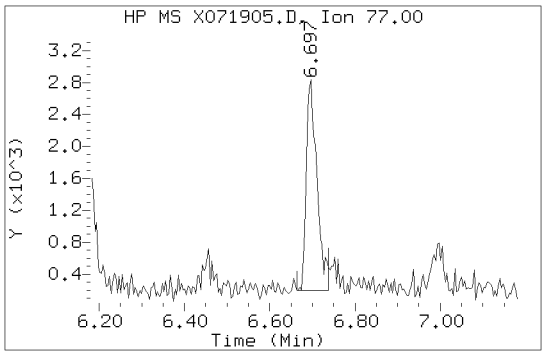
BEFORE

MASS
72
AREA
1160
HEIGHT
768
25-Jul-2022
09:00
linh
pham



AFTER

MASS
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AREA
4630
HEIGHT
2637
19-Aug-2022
10:59
linh
pham

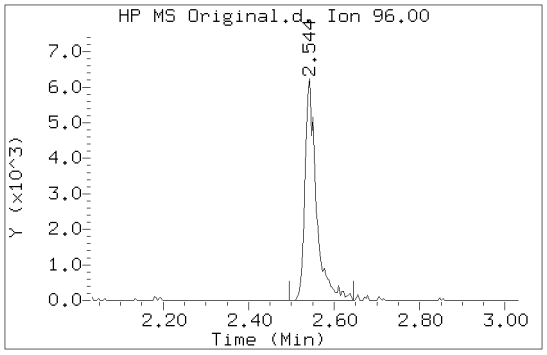


trans-1,2-Dichloroethene (156-60-5)

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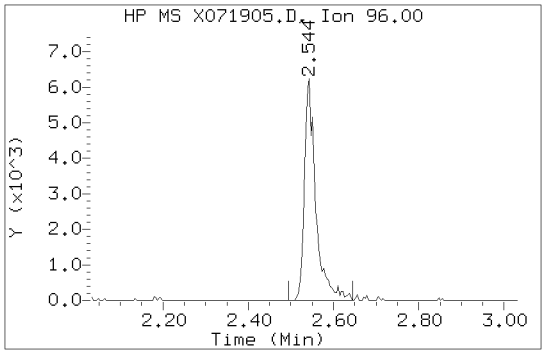
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AREA
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HEIGHT
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25-Jul-2022
09:00
linh
pham



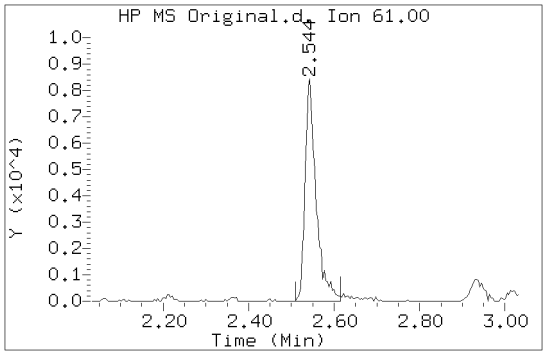
AFTER

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HEIGHT
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19-Aug-2022
10:59
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pham



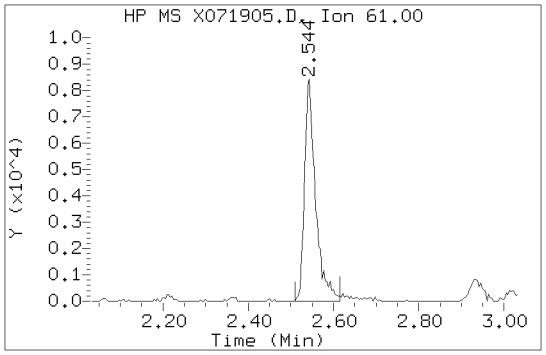
BEFORE

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25-Jul-2022
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AFTER

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19-Aug-2022
10:59
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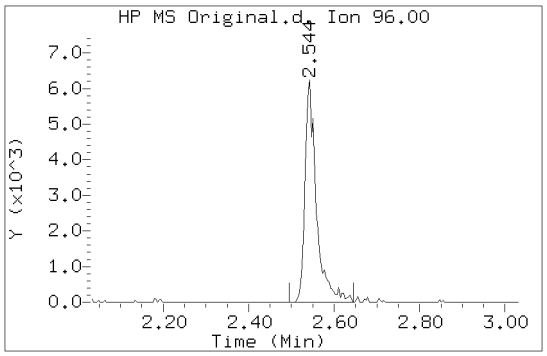


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

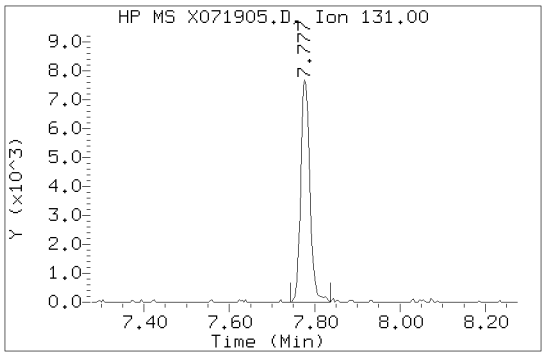
BEFORE

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HEIGHT
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25-Jul-2022
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AFTER

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11843
HEIGHT
7685
19-Aug-2022
10:59
linh
pham

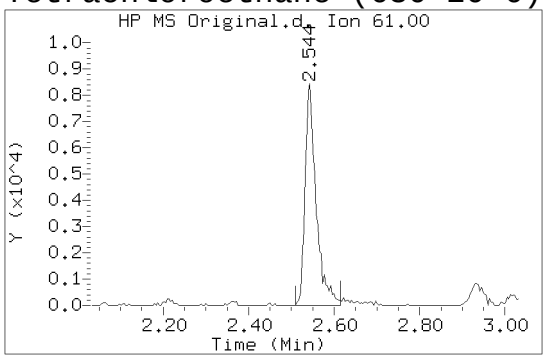


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Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,1,1,2-Tetrachloroethane (630-20-6)

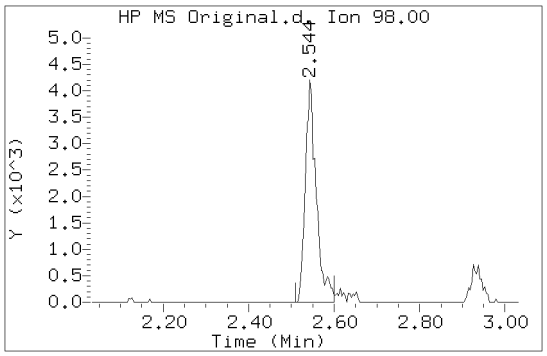
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BEFORE

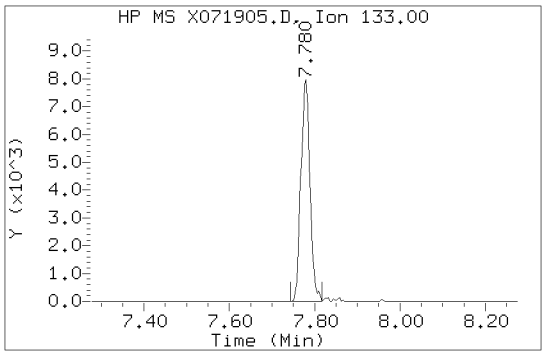
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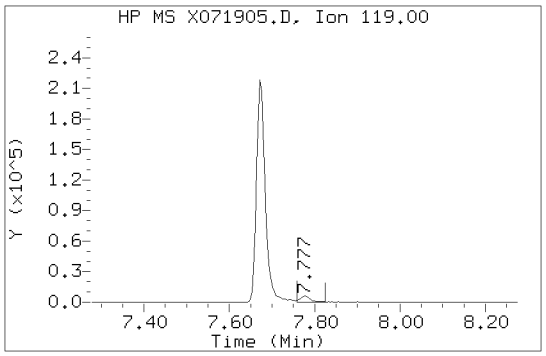
AFTER

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19-Aug-2022
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pham



AFTER

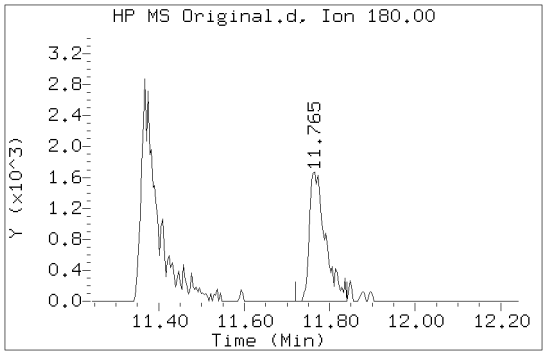
MASS
119
AREA
9417
HEIGHT
5791
19-Aug-2022
10:59
linh
pham



1,2,3-Trichlorobenzene (87-61-6)

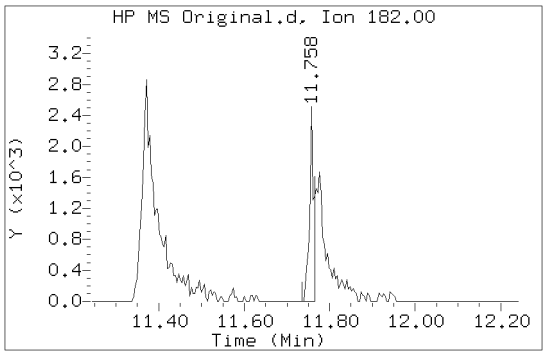
BEFORE

MASS
77
AREA
20343
HEIGHT
7624
25-Jul-2022
09:00
linh
pham



BEFORE

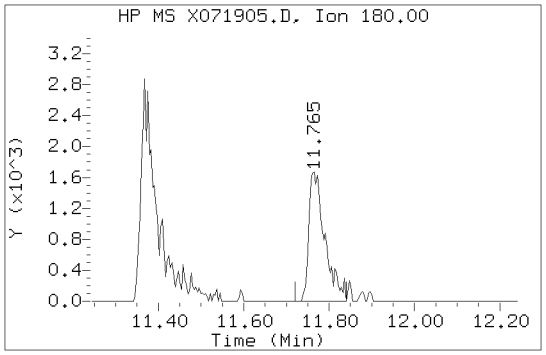
MASS
97
AREA
4262
HEIGHT
1855
25-Jul-2022
09:00
linh
pham



Reason Code:

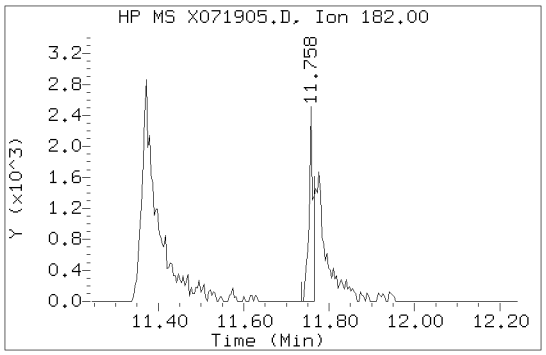
AFTER

MASS
180
AREA
4350
HEIGHT
1674
19-Aug-2022
10:59
linh
pham



AFTER

MASS
182
AREA
1686
HEIGHT
2516
19-Aug-2022
10:59
linh
pham



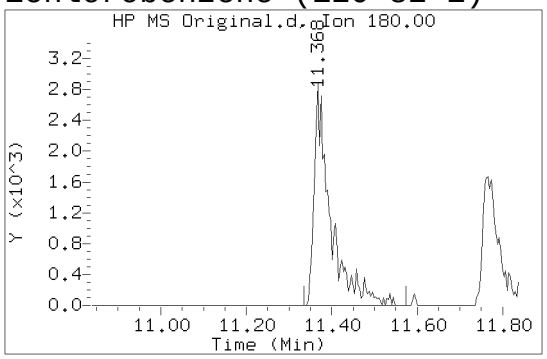
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

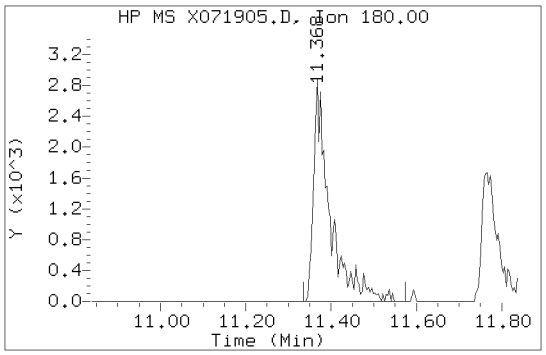
BEFORE

MASS
93
AREA
8339
HEIGHT
4545
25-Jul-2022
09:00
linh
pham



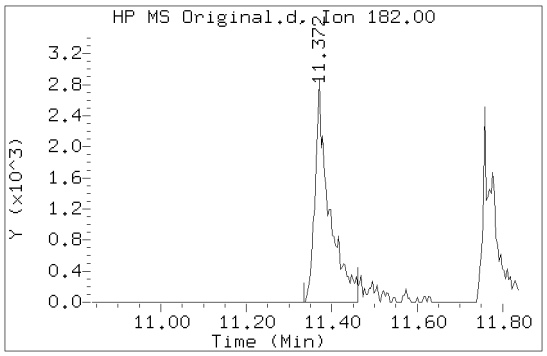
AFTER

MASS
180
AREA
7590
HEIGHT
2875
19-Aug-2022
10:59
linh
pham



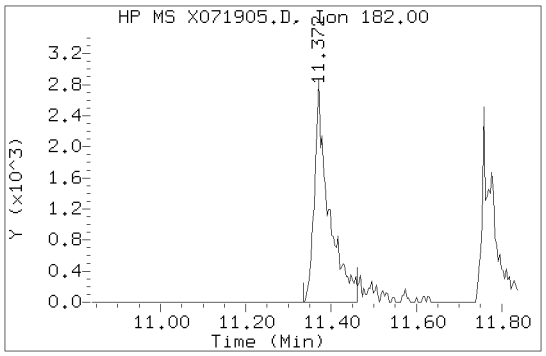
BEFORE

MASS
95
AREA
6507
HEIGHT
3494
25-Jul-2022
09:00
linh
pham



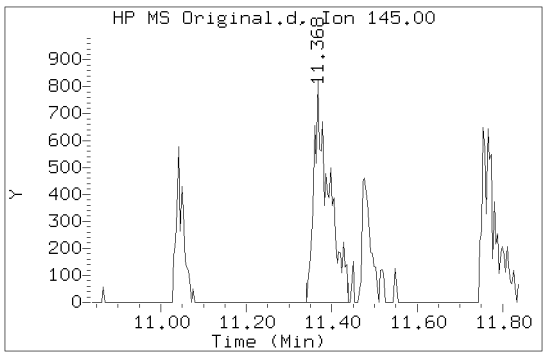
AFTER

MASS
182
AREA
6596
HEIGHT
2861
19-Aug-2022
10:59
linh
pham



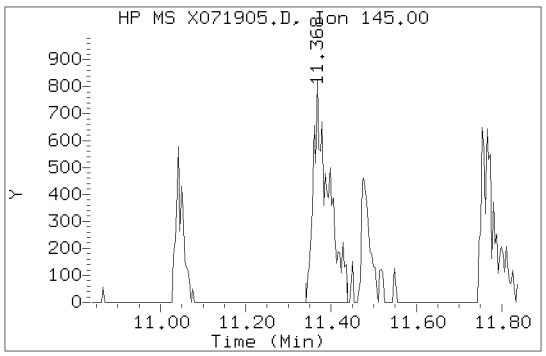
BEFORE

MASS
174
AREA
9376
HEIGHT
4902
25-Jul-2022
09:00
linh
pham



AFTER

MASS
145
AREA
1993
HEIGHT
822
19-Aug-2022
10:59
linh
pham

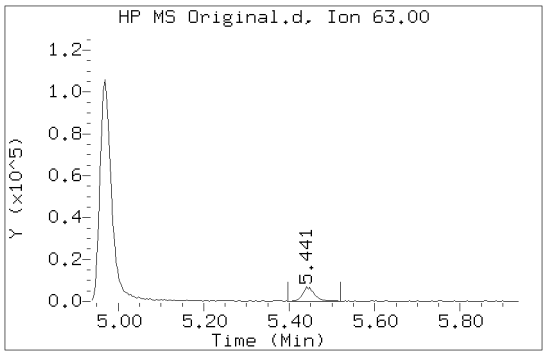


1,2-Dichloropropane (78-87-5)

Reason Code:

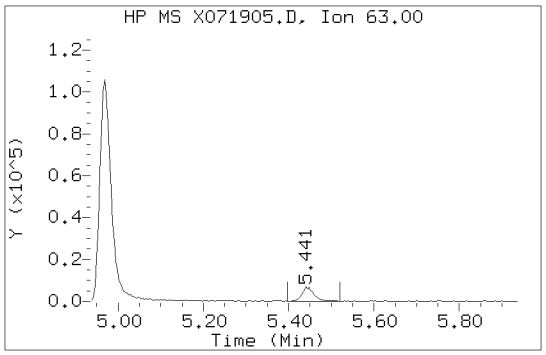
BEFORE

MASS
96
AREA
11820
HEIGHT
6241
25-Jul-2022
09:00
linh
pham



AFTER

MASS
63
AREA
12652
HEIGHT
7049
19-Aug-2022
10:59
linh
pham



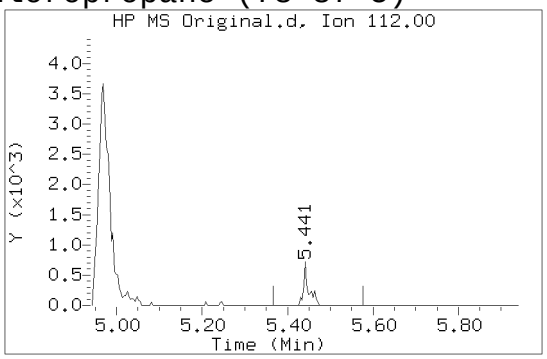
Data File : \\NAHSTWS005\Target\chem\voa6.i\X220719.b\X071905.D
Inj Date : 19-JUL-2022 12:50
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloropropane (78-87-5)

Reason Code:

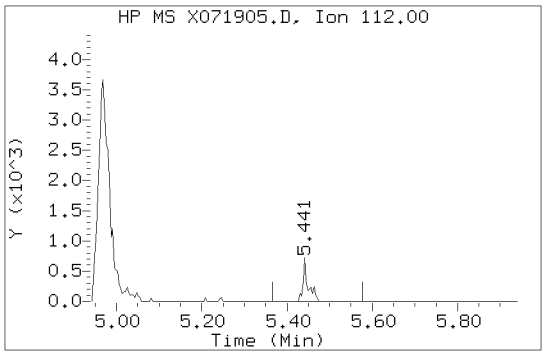
BEFORE

MASS
61
AREA
15499
HEIGHT
8443
25-Jul-2022
09:00
linh
pham



AFTER

MASS
112
AREA
621
HEIGHT
722
19-Aug-2022
10:59
linh
pham

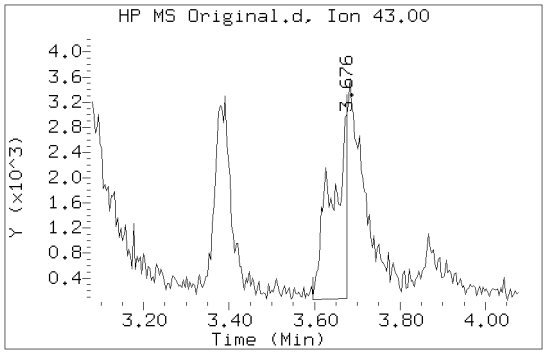


2-Butanone (78-93-3)

Reason Code:

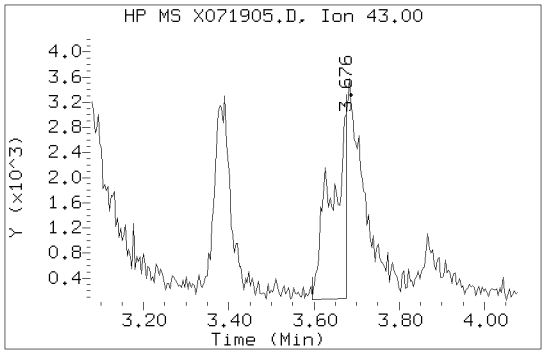
BEFORE

MASS
83
AREA
11877
HEIGHT
7406
25-Jul-2022
09:00
linh
pham



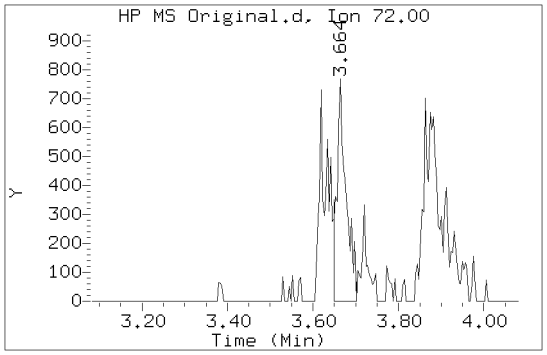
AFTER

MASS
43
AREA
7321
HEIGHT
2938
19-Aug-2022
10:59
linh
pham



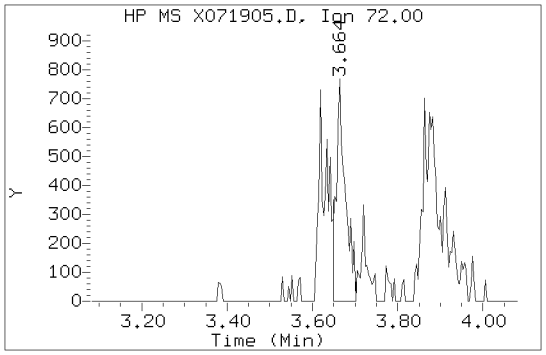
BEFORE

MASS
131
AREA
1518
HEIGHT
1092
25-Jul-2022
09:00
linh
pham



AFTER

MASS
72
AREA
1160
HEIGHT
768
19-Aug-2022
10:59
linh
pham

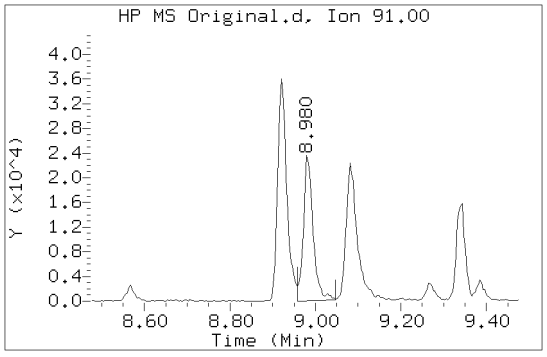


2-Chlorotoluene (95-49-8)

Reason Code:

BEFORE

MASS
164
AREA
11817
HEIGHT
8696
25-Jul-2022
09:00
linh
pham



AFTER

MASS
91
AREA
37863
HEIGHT
23522
19-Aug-2022
10:59
linh
pham

